

National Aeronautics and
Space Administration

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



November 12, 2015

Reply to Attn of: RE-15-121

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 October 2015

Enclosed is the WSTF Monthly Environmental Activity Report for October 2015. This reporting format includes an Executive Summary that provides important events/observations as Enclosure 1, a paper copy of the report as Enclosure 2, and a CD-ROM with the report in PDF as Enclosure 3.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

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

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

Timothy J. Davis
Chief, Environmental Office

3 Enclosures

cc:

Ms. Kristen Van Horn
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



National Aeronautics and
Space Administration

Monthly Environmental Activity Report

October 2015

Submitted November 9, 2015

NM8800019434

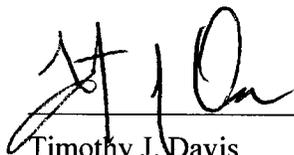
NASA Johnson Space Center White Sands Test Facility

12600 NASA Road Las Cruces, New Mexico 88012

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

October 2015

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

11 | 10 | 15
Date

Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in October 2015:

- NASA completed two shipments of hazardous waste and one shipment of asbestos waste in October 2015.
- NASA performed sampling at 41 of 41 groundwater monitoring wells and completed all required groundwater remediation system sampling scheduled for October 2015.
- The Mid-plume Interception and Treatment System operated on 31 of 31 days in October 2015 and treated approximately 1.87 acre-feet of groundwater and investigation-derived waste.
- The Plume Front Treatment System operated on 29 of 31 days in October 2015 and treated approximately 122.08 acre-feet of contaminated groundwater.
- NASA continued project and procurement planning for the investigation of SWMUs 16 and 19.
- NASA continued fieldwork associated with the investigation and closure of the WSTF wastewater lagoons.
- NASA continued reviewing and processing analytical data from investigation samples collected during fieldwork performed at SWMUs 1, 3, and 15 and continued development of the investigation report.
- 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 continued the conversion of Westbay wells to purgeable sampling systems in accordance with the approved work plan.
- NASA continued planning for the investigation and removal of additional WSTF septic tanks.
- NASA extracted 179 gallons of perched contaminated groundwater from monitoring well 600-G-138 in October 2015.
- There were no reportable non-compliance issues in October 2015.

1.0 Waste Management Activities

- 1.1 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on October 15, 2015. The shipment consisted of eight containers with 193 kilograms of hazardous waste for disposal.
- 1.2 NASA completed a shipment of P078 ADGAS treatment residual (water) waste to Veolia in Henderson, Colorado on October 15, 2015. The shipment consisted of two 330-gallon intermediate bulk containers with 2,260 kilograms of hazardous waste for disposal.
- 1.3 NASA completed a shipment of asbestos-containing waste to the Otero/Greentree Regional Landfill near Alamogordo, New Mexico on October 15, 2015. The shipment consisted of two containers, a 1-cubic yard Supersack and a 30-gallon drum, with a total of 317 kilograms of waste for disposal.

2.0 Environmental Monitoring

- 2.1 NASA performed sampling at 41 of 41 groundwater monitoring wells or zones scheduled for sampling in October 2015, including the six wells/zones that were rescheduled from September 2015 to coincide with planned post-closure care groundwater sampling at the closed 700 Area landfill. Eight groundwater monitoring wells previously scheduled for preceding months were not sampled because of equipment failures or deficiencies, or interference from the ongoing groundwater dye tracer test. These issues are being addressed as necessary and will be reported on in future monthly reports.
- 2.2 Sampling of operational groundwater remediation system influent, effluent, and extraction wells was performed in accordance with applicable permits and approved plans.

3.0 Corrective Actions/Investigations

- 3.1 Mid-plume Interception and Treatment System
 - MPITS Operation – The MPITS operated on 31 of 31 days in October 2015 and treated approximately 1.85 acre-feet of groundwater and 6,250 gallons of IDW. All treated water was discharged to the infiltration basin.
 - MPITS Shutdowns, Repairs, and Modifications – There were two unplanned shutdowns of the MPITS. On October 20, 2015 the system shut down automatically when a lightning strike caused a disruption in the electrical power supply. The system was restarted on October 21, 2015. On October 29, 2015 the system shut down automatically because of a leak detection notification. The issue was resolved and the system was restarted later that day.
- 3.2 Plume Front Treatment System
 - PFTS Operation – The PFTS operated on 29 of 31 days in October 2015 at an average flow rate of 858 gallons per minute. The system extracted and treated approximately 122.08 acre-feet of groundwater, most of which was injected into the aquifer following treatment. Approximately 0.003 acre-feet of groundwater were discharged to the on-site Modu-tank system during system startup events. Approximately 2.66 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 were two unplanned shutdowns and two planned shutdowns of the PFTS in October 2015. On October 6, 2015 the system was shut down in order to remove a failed pressure gauge assembly on one of the air strippers. The service was completed and the system was restarted within two hours. On October 12, 2015 the system was shut down for several hours to correct a minor issue related to the PFE-1 controller. On October 20, 2015 the system shut down automatically when a lightning strike caused a disruption in the electrical power supply. The related issues were resolved and additional

needed repairs were performed before the system was restarted on October 22, 2015. On October 30, 2015 the system was shut down in order to perform an unplanned inspection of the UV controller. The system remained offline for the remainder of October 2015.

3.3 200 Area Investigation

- NMED continued review of the *200 Area Phase II Investigation Report* (June 29, 2015), which presents the results of an evaluation of subsurface soil, bedrock, groundwater, and soil vapor within the 200 Area vadose zone.

3.4 600 Area Perched Groundwater Extraction Pilot Test

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in October 2015 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 179 gallons of perched groundwater were removed from 600-G-138 in October 2015.
- On July 15, 2015, NMED approved NASA's April 16, 2015, *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 2* with modifications. The approval included a requirement to develop and submit a Work Plan to evaluate the potential source of volatiles in the soil vapor beneath the 600 Area Closure. NASA believes that previous investigations at the 600 Area Closure have clearly identified the source of volatiles in soil vapor. NASA expects to discuss this issue with NMED in the near future.

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

- NASA completed processing and evaluating chemical analytical data from soil samples collected during investigation fieldwork at SWMUs 1, 3, and 15 and nearby areas of interest and continued development of the investigation report for submittal to NMED in November 2015.
- NASA continued to manage investigation-derived waste in accordance with site procedures and applicable regulations. Non-soil IDW was disposed of as solid waste in September 2015 in accordance with NMED-approved requests for no longer "contained-in" determinations (approved August 26, 2015). NASA applied the IDW soil to the surface of the ground at locations adjacent to the investigation sites in October 2015.

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

- NASA completed groundwater and wastewater sampling at the 100, 200, and 600 Area lagoons in October 2015 in accordance with the NMED-approved *Wastewater Lagoon Areas Closure Investigation Work Plan* (October 15, 2012). NASA also performed soil vapor sampling in the vicinity of the lagoons as required.
- NASA completed planning for sludge sampling, and initiated that activity at the 100 Area Lagoons in October 2015.

3.7 SWMU 10 (200 Area Hazardous Waste Transmission Line)

- The recently submitted *200 Area HWTL (SWMU 10) Investigation Work Plan and Historical Information Summary* (July 29, 2015) remain under NMED review.

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

- NASA continued project planning and procurement activities.

3.9 SWMU 19 (800 Area Below Grade Storage Tank)

- NASA continued project planning and procurement activities.

3.10 SWMUs 21-27 (Septic Tanks)

- NASA continues to plan for the removal of several more septic tanks and the investigation of the SWMU 22 tank location. NASA expects to complete septic tank removals and initiate SWMU 22 investigation activities by the end of the 2015 calendar year.

3.11 SWMUs 29-31 (Small Arms Firing Ranges)

- NASA continued the review of analytical and field data collected during field screening at three small arms firing ranges in accordance with the *Small Arms Firing Ranges (SWMUs 29 – 31) Accelerated Corrective Measures Work Plan* (February 26, 2015).
- NASA continued planning and procurement activities for the required follow-on cleanup work.

3.12 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 throughout October 2015 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. Eocene, which was introduced in monitoring well BLM-15-305, has been detected at two monitoring wells in the Mid-plume area. To date, there have been no detections of tracer dyes released in the 200 Area.

3.13 JER Anomalous NDMA Detections

- NASA completed and submitted the *Investigation Report for Evaluating Anomalous Detections of NDMA in JER-1 and JER-2* on September 29, 2015. NASA received NMED's October 14, 2015 fee assessment for review of the report and is processing the request for payment.

3.14 Westbay Monitoring Well Conversion

- NASA and two off-site contractors removed the Westbay sampling systems from monitoring wells WW-4 and WW-5 in accordance with the NMED-approved *Westbay Well Conversion Work Plan* (November 1, 2012). NASA completed redevelopment of the four screened intervals in each of the monitoring well conventional casings. Water FLUTE multilevel groundwater sampling systems have been ordered and are scheduled for installation in December 2015.
- The off-site vendor responsible for the construction of the dedicated low-flow bladder pump system (with packer) planned for installation in the borehole at monitoring well BLM-28 was notified by a supplier that they were ceasing operations and would not be able to provide the required packer. An alternate supplier was located and the packer has been designed and ordered. However, the substantial lead time for the new supplier is expected to delay the installation of the system at BLM-28 until December 2015.
- Because of several delays encountered during Westbay conversion activities, NASA submitted a Request for Extension of Time for Conversion of Westbay Wells BLM-28, WW-4, and WW-5 (October 29, 2015).

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 in October 2015

- NASA submitted the NASA White Sands Test Facility (WSTF) 2015 Annual Fee Payment of \$51,500 on October 22, 2015.
- NASA submitted the Request for Extension of Time for Conversion of Westbay Wells BLM-28, WW-4, and WW-5 on October 29, 2015.
- NASA submitted the review fees for the Periodic Monitoring Report – Second Quarter 2015 and the 2015 Remediation System Monitoring Plan Annual Update on October 29, 2015.

5.2 Status of documents submitted in previous months

- NASA submitted the *Transmittal of Class 1 Permit Modification Request for the NASA WSTF Hazardous Waste Permit No. NM8800019434 Attachment 16* on May 11, 2015. NMED approved the request on May 29, 2015. NASA received NMED's August 26, 2015 Fee Assessment for review of the request and submitted the \$2,500 review fee on October 26, 2015.
- NASA submitted the *200 Area Phase II Investigation Report* on June 29, 2015. NASA received NMED's August 21, 2015 Fee Assessment for review of the IWP and submitted the \$18,500 review fee on October 16, 2015.
- NASA submitted the *200 Area HWTL (SWMU 10) Investigation Work Plan and Historical Information Summary* on June 29, 2015. NASA received NMED's August 21, 2015 Fee Assessment for review of the IWP and submitted the \$10,000 review fee on September 28, 2015.
- NASA submitted the *Remediation System Monitoring Plan Annual Update for 2015* on July 29, 2015. NMED approved the Plan on September 16, 2015. NASA received NMED's September 11, 2015 Fee Assessment for review of the Plan and submitted the \$2,500 review fee on October 29, 2015.
- NASA submitted the *Investigation Report for Evaluating Anomalous Detections of NDMA in JER-1 and JER-2* on September 29, 2015. NASA received NMED's October 14, 2015 Fee Assessment for review of the report and is processing the required \$7,500 payment.

Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in October 2015:

- NASA completed two shipments of hazardous waste and one shipment of asbestos waste in October 2015.
- NASA performed sampling at 41 of 41 groundwater monitoring wells and completed all required groundwater remediation system sampling scheduled for October 2015.
- The Mid-plume Interception and Treatment System operated on 31 of 31 days in October 2015 and treated approximately 1.87 acre-feet of groundwater and investigation-derived waste.
- The Plume Front Treatment System operated on 29 of 31 days in October 2015 and treated approximately 122.08 acre-feet of contaminated groundwater.
- NASA continued project and procurement planning for the investigation of SWMUs 16 and 19.
- NASA continued fieldwork associated with the investigation and closure of the WSTF wastewater lagoons.
- NASA continued reviewing and processing analytical data from investigation samples collected during fieldwork performed at SWMUs 1, 3, and 15 and continued development of the investigation report.
- 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 continued the conversion of Westbay wells to purgeable sampling systems in accordance with the approved work plan.
- NASA continued planning for the investigation and removal of additional WSTF septic tanks.
- NASA extracted 179 gallons of perched contaminated groundwater from monitoring well 600-G-138 in October 2015.
- There were no reportable non-compliance issues in October 2015.

ALBUQUERQUE
UNITED STATES POSTAL SERVICE

17 NOV '15

PM 2 1



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

**National Aeronautics and
Space Administration**

Mail Code: AE-15-121
**Lyndon B. Johnson Space Center
White Sands Test Facility
Post Office Box 20
Las Cruces, NM 88004-0020**



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ms. Kristen Van Horn
 Hazardous Waste Bureau
 New Mexico Environmental Dept
 2905 Rodeo Park Drive East, Building 1
 Santa Fe, NM 87505

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Matthew Lopez* Agent
 Addressee

B. Received by (Printed Name)

Matthew T. Lopez

C. Date of Delivery

1/20/04

D. Is delivery address different from item 1? Yes

If YES, enter delivery address below: No

3. Service Type

- Certified Mail Express Mail
- Registered Return Receipt for Merchandise
- Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee)

Yes

2. *7011 2970 0004 4020 0908*

service label)

7011 2970 0004 4020 0908

February 2004

Domestic Return Receipt

102595-02-M-1540

UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

**National Aeronautics and
Space Administration**

Mail Code: *AE-15-121*
**Lyndon B. Johnson Space Center
White Sands Test Facility
Post Office Box 20
Las Cruces, NM 88004-0020**



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

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)

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 Addressee
B. Received by (Printed Name) C. Date of Delivery
D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

7011 2970 0004 4020 0892