

National Aeronautics and
Space Administration

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



March 9, 2016

Reply to Attn of: RE-16-042

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 February 2016

Enclosed is the WSTF Monthly Environmental Activity Report for February 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.

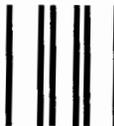
A handwritten signature in black ink, appearing to read "T J Davis".

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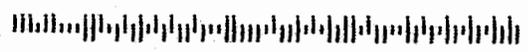
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**National Aeronautics and
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White Sands Test Facility
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Gabriel Acevedo
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg 1
Santa Fe, NM 87505

2. Article Number

(Transfer from service label)

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**Martinez*

Agent

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Executive Summary

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

- NASA completed shipments of hazardous, universal, New Mexico special, and non-DOT/non-hazardous waste in February 2016.
- NASA performed sampling at 23 of 23 groundwater monitoring wells scheduled for February 2016.
- The Mid-plume Interception and Treatment System did not operate in February 2016.
- The Plume Front Treatment System did not operate in February 2016.
- NASA completed and submitted investigation reports for SWMU 16 and SWMU 19.
- NASA continued fieldwork associated with the investigation and closure of the WSTF wastewater lagoons (SWMUs 2, 8, and 34 and AOC 51).
- NASA continued planning cleanup work at three closed small arms firing ranges (SWMUs 29-31).
- NASA continued the investigation and removal of additional WSTF septic tanks (SWMUs 21-27).
- NASA continued project planning activities for the upcoming investigation of the hazardous waste transmission line (SWMU 10).
- NASA initiated development of the investigation work plan and historical information summary for the TDRSS diesel release (SWMU 50).
- 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 143 gallons of perched contaminated groundwater from monitoring well 600-G-138 in February 2016.
- NASA continued an ongoing project to reconfigure several Westbay groundwater monitoring wells with purgeable sampling systems.
- NASA submitted a variety of documents to NMED in February 2016, including “contained-in” requests and investigation reports for SMWUs 16 and 19, a drilling work plan for a new groundwater monitoring well, the response to NMED findings during a recent compliance evaluation, and a work plan for assessing vapor intrusion in the 200 and 600 Areas.
- There were no reportable non-compliance issues in February 2016.



National Aeronautics and
Space Administration

Monthly Environmental Activity Report

February 2016

Submitted March 14, 2016

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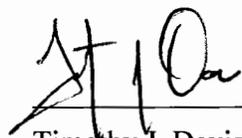
NASA Johnson Space Center White Sands Test Facility

12600 NASA Road Las Cruces, New Mexico 88012

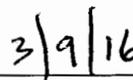
NASA Johnson Space Center White Sands Test Facility
Monthly Environmental Activity Report

February 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 February 2016:

- NASA completed shipments of hazardous, universal, New Mexico special, and non-DOT/non-hazardous waste in February 2016.
- NASA performed sampling at 23 of 23 groundwater monitoring wells scheduled for February 2016.
- The Mid-plume Interception and Treatment System did not operate in February 2016.
- The Plume Front Treatment System did not operate in February 2016.
- NASA completed and submitted investigation reports for SWMU 16 and SWMU 19.
- NASA continued fieldwork associated with the investigation and closure of the WSTF wastewater lagoons (SWMUs 2, 8, and 34 and AOC 51).
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- 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 143 gallons of perched contaminated groundwater from monitoring well 600-G-138 in February 2016.
- NASA continued an ongoing project to reconfigure several Westbay groundwater monitoring wells with purgeable sampling systems.
- NASA submitted a variety of documents to NMED in February 2016, including “contained-in” requests and investigation reports for SMWUs 16 and 19, a drilling work plan for a new groundwater monitoring well, the response to NMED findings during a recent compliance evaluation, and a work plan for assessing vapor intrusion in the 200 and 600 Areas.
- There were no reportable non-compliance issues in February 2016.

1.0 Waste Management Activities

- 1.1 NASA completed a shipment of non-DOT/non-hazardous waste (diesel-contaminated soil) to the Valencia Landfill and Recycling Facility in Rio Rancho, New Mexico on February 18, 2016. The shipment consisted of 13 containers with 4,590 kilograms of contaminated soil for disposal.
- 1.2 NASA completed a shipment of New Mexico special waste (regulated asbestos-containing material) to the Otero County Regional Landfill in Alamogordo, New Mexico on February 18, 2016. The shipment consisted of two bulk bags (Super Sacks) with 105 kilograms of special waste for disposal.
- 1.3 NASA completed a shipment of universal waste to Veolia in Phoenix, Arizona on February 18, 2016. The shipment consisted of 24 containers with 2,309 kilograms of universal waste for disposal.
- 1.4 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on February 18, 2016. The shipment consisted of 14 containers with 772 kilograms of hazardous waste for disposal.
- 1.5 NASA completed a shipment of P078 ADGAS treatment residual (water) waste to Veolia in Henderson, Colorado on February 18, 2016. The shipment consisted of two intermediate bulk containers with 2,330 kilograms of hazardous waste for disposal.

2.0 Environmental Monitoring

- 2.1 NASA performed sampling at 23 of 23 groundwater monitoring wells or zones scheduled for sampling in February 2016.
- 2.2 Groundwater remediation system influent, effluent, and extraction wells were not sampled in February 2016 because the systems were not operational (see next section).

3.0 Corrective Actions/Investigations

- 3.1 Mid-plume Interception and Treatment System and Plume Front Treatment System
 - Both groundwater treatment systems shut down automatically on December 26, 2015 because of an interruption in the electrical power supply following an off-site event during a winter storm. The MPITS was restarted on December 28, 2015 and operated until January 23, 2016, when it shut down automatically because of a leak detection alarm. The PFTS was not restarted in December 2015 because scheduled maintenance was initiated following the unexpected shutdown on December 26, 2015. While performing this scheduled maintenance, NASA determined that the electrical power supply provided by an off-site generator was out of phase by greater than 2%. This condition created electrical current unbalances outside of National Electrical Manufacturers Association standards and greater than the PFE well pump motor protection devices allow. Operating the PFE well pump motors under these conditions would result in premature failure, with an expected operational life of approximately 50% of that expected. As a result, the PFTS has not been restarted since the December 2015 shutdown, and the MPITS was not restarted after its January 23, 2016 shutdown. Subsequent testing has shown that the pump motors used in the MPE wells are less susceptible to the phase shift and unbalanced current. The MPITS was restarted on March 1, 2016 and is being monitored closely for signs of unexpected damage resulting from unbalanced electrical current. The PFTS is expected to remain offline until NASA and the off-site electrical power generator complete ongoing efforts to resolve the phase shift issues and reduce the electrical current unbalance to acceptable levels.

3.2 200 Area Investigation

- NASA completed the work plan for the 200 Area quantitative assessment of soil vapor intrusion required by NMED's approval with modification of the *200 Area Phase II Investigation Report* (June 29, 2015). The *200 and 600 Area Vapor Intrusion Assessment Work Plan* was submitted to NMED on February 25, 2016.

3.3 600 Area Perched Groundwater Extraction Pilot Test

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in February 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 143 gallons of perched groundwater were removed from 600-G-138 in February 2016.

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

- 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) remains under NMED review.

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

- NASA began transferring wastewater from the 100 Area lagoons to the 600 Area lagoons in order to more rapidly dry the 100 Area sludge and allow for the collection of fully representative sludge samples.

3.6 SWMU 10 (200 Area Hazardous Waste Transmission Line)

- NASA continued project planning activities for investigation fieldwork in accordance with the *200 Area HWTL (SWMU 10) Investigation Work Plan and Historical Information Summary* (July 29, 2015).

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

- NASA completed a request for a no longer "contained-in" determination for investigation-derived waste and submitted the request to NMED on February 4, 2016. NMED approved the request and instructed NASA to dispose of the IDW soil in a solid waste landfill. NASA began planning for the required disposal.
- NASA completed the investigation report and submitted it to NMED on February 25, 2016.

3.8 SWMU 19 (800 Area Below Grade Storage Tank)

- NASA prepared a request for a no longer "contained-in" determination for IDW and submitted the request to NMED on January 21, 2016. NMED approved the request with instructions to dispose of some of the IDW soil in a solid waste landfill. NASA began planning for the required disposal.
- NASA completed the investigation report and submitted it to NMED on February 17, 2016.

3.9 SWMUs 21-27 (Septic Tanks)

- NASA removed three septic tanks in February 2016 – those at Buildings 320, 447, and 650. All tanks were demolished in place. Concrete debris from the tanks was recycled at the City of Las Cruces Clean Fill Landfill.
- NASA continues to plan for the removal of several more septic tanks and the investigation of the SWMU 22 tank location, which will be performed after non-SWMU tanks are removed. NASA continues planning for the collection of soil samples from inside the SWMU 22 tank.

3.10 SWMUs 29-31 (Small Arms Firing Ranges)

- Utilizing chemical and field screening data, NASA continued preparing updated maps of the firing ranges in accordance with the *Small Arms Firing Ranges (SWMUs 29 – 31) Accelerated Corrective Measures Work Plan* (February 26, 2015). These maps will provide additional delineation of the horizontal extent of the firing range study areas.
- NASA continued planning activities for the required follow-on cleanup work at the three closed small arms firing ranges.

3.11 SWMU 50 (TDRSS Diesel Release)

- NASA initiated development of the investigation work plan and historical information summary for SWMU 50. These documents are due to NMED by June 30, 2016.

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 through February 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. Eocene, which was introduced in monitoring well BLM-15-305, has been detected at three different monitoring wells to the southwest of the Mid-plume area. To date, there have been no confirmed detections of tracer dyes released in the 200 Area.

3.13 JER Anomalous NDMA Detections

- NMED approved the *Investigation Report for Evaluating Anomalous Detections of NDMA in JER-1 and JER-2* (September 29, 2015) with modifications on January 8, 2016. As requested in the NMED approval with modifications, NASA completed and submitted the analytical laboratory reports for samples collected during the investigation.
- NASA continued preparation of the Westbay well reconfiguration work plan required by NMED's approval.

3.14 Westbay Monitoring Well Reconfiguration

- Routine sampling of recently reconfigured Westbay wells BLM-32, WW-4, and WW-5 continues in accordance with the approved Groundwater Monitoring Plan.
- NASA continued 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. It is believed that the inflatable packer supplied with the system is too large in diameter for installation in the open borehole at BLM-28. NASA continued efforts to install the system in this well in February 2016, but was unsuccessful. The sampling equipment will be removed from the well in March 2016 and reconfigured in attempt to collect samples from the well.

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 February 2016.

- NASA submitted the *Request for “Contained-in” Determination for SWMU 16 Investigation-Derived Waste (IDW)* on February 4, 2016. NMED approved the request on February 24, 2016.
- NASA submitted the *Drilling Work Plan for Supplement Groundwater Monitoring Well (PL-11)* on February 10, 2016.
- NASA submitted the *Hazardous Waste Compliance Evaluation Report Response* on February 11, 2016.
- NASA submitted the *SWMU 19 (800 Area Below Grade Storage Tank) Investigation Report* on February 17, 2016.
- NASA submitted the *SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report* on February 25, 2016.
- NASA submitted the *200 and 600 Area Vapor Intrusion Assessment Work Plan* on February 25, 2016.
- NASA submitted the *2015 Hazardous Waste Report for the NASA White Sands Test Facility* on February 29, 2016.

5.2 Pertinent Documents submitted to other NMED Bureaus in February 2016.

- NASA submitted the *On-Site Liquid Waste Abandonment Forms for WSTF Building 272 Septic Tanks A, B, and C* to the Liquid Waste Program on February 4, 2016.
- NASA submitted the *2015 Solid Waste Management Annual Report White Sands Test Facility (WSTF) 700 Area Post-Closure Solid Waste Landfill* to the Solid Waste Bureau on February 10, 2016.
- NASA submitted the *Semi-Annual Report for Discharge Plan (DP)-1255 – Second Half of 2015* to the Ground Water Quality Bureau on February 25, 2016.

5.3 Status of documents submitted in previous months

- 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 submitted the \$7,500 review fee on November 23, 2015. NMED approved the report on January 8, 2016 with modifications, which required the submittal of laboratory reports for samples collected during the investigation. NASA submitted the required reports on February 10, 2016, in a submittal entitled *Approval with Modifications, Investigation Report for Evaluating Anomalous Detections of NDMA in JER-1 and JER-2*.

NASA White Sands Test Facility

- 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.
- NASA submitted the *Additional Work Plan Requirement to Evaluate Potential Source of 600 Area Contamination* on November 25, 2015. NMED responded to NASA's submittal on February 11, 2016 with clarification and direction to submit a work plan for 600 Area perched groundwater zone investigation by June 30, 2016.
- NASA submitted the *Request for a "Contained-in" Determination for SWMU 19 Investigation-Derived Waste (IDW)* on January 21, 2016. NMED approved the request on February 11, 2016.