

National Aeronautics and
Space Administration

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



March 27, 2023

Reply to Attn of: RE-23-054

Ms. Melanie Sandoval
New Mexico Environment Department
Ground Water Quality Bureau
1190 S. St. Francis Dr.
Santa Fe, NM 87502-5469

Subject: Notice of Intent to Discharge Groundwater at NASA-JSC White Sands Test Facility (WSTF) During Drilling of Monitoring Wells BLM-43, 600B-001-GW, and 600C-001-GW

NASA is providing the following Notices of Intent (NOIs) to obtain authorization to discharge drilling fluids (non-chlorinated groundwater and drilling mud or foam) to temporary earthen pits during well vadose zone drilling activities at WSTF. Enclosure 1 provides Ground Water Quality Bureau Notice of Intent to Discharge forms for each of the proposed discharge locations. Enclosure 2 provides maps that show the locations of the proposed groundwater monitoring wells at which these discharges are planned. Enclosure 3 provides baseline sampling analytical results from sampling performed at Well M.

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 Michael Zigmond of my staff at 575-524-5484.

Sincerely,

**TIMOTHY
DAVIS**

Digitally signed by
TIMOTHY DAVIS
Date: 2023.03.27
13:34:41 -06'00'

Timothy J. Davis
Chief, Environmental Office

3 Enclosures

Enclosure 1



For Department use Only:

Agency Interest Number _____
PRD Assigned _____

1. Name and mailing address of person proposing to discharge (Responsible Person):

<u>Timothy J. Davis – Chief, Environmental Office</u>	Work Phone: <u>575-524-5024</u>
<u>NASA-JSC White Sands Test Facility</u>	Cell/Home Phone: <u>N/A</u>
<u>P. O. BOX 20</u>	Fax: <u>575-527-5798</u>
<u>Las Cruces, NM 88004</u>	Email: <u>timothy.j.davis@nasa.gov</u>

2. Name and Position of person Completing Form:

<u>Phillip Bolen – Geologist</u>	Work Phone: <u>575-524-5286</u>
<u>NASA-JSC White Sands Test Facility</u>	Cell/Home Phone: <u>N/A</u>
<u>P.O. BOX 20</u>	Fax: <u>575-527-5544</u>
<u>Las Cruces, NM 88004</u>	Email: <u>phillip.n.bolen@nasa.gov</u>

3. Name of facility:

NASA-JSC White Sands Test Facility (WSTF)

4. Physical location of the discharge (if applicable, give street address, township, range, section, distance from closest town or landmark, directions to facility, location map):

The lined earthen pits (discharge location) will be constructed in the immediate vicinity of proposed groundwater monitoring well BLM-43. The proposed well is to be located approximately two and one-half miles northwest of the WSTF 100 Area in the NE ¼ of the NE ¼ of the NW ¼ of Section 33 Township 20S Range 03E. The new well will be located approximately 50 ft east of former groundwater monitoring well BLM-30. Maps indicating the proposed locations of the discharges are provided in Enclosure 2.

5. Type of operation generating the discharge (e.g., agricultural facility, domestic wastewater discharge, industrial discharge, mining operation, etc.):

The discharge of drilling fluids and cuttings will be generated during the vadose zone drilling of groundwater monitoring well BLM-43.

6. Source(s) of the discharge. Describe how the wastewater, sludge, or other discharges processed and/or disposed at your facility are generated. Identify all sources. Attach additional pages if needed:

An estimated total of 20,000 gallons (0.061 acre-feet) will be discharged. Up to 0.0036 acre-feet per day (1,200 gpd) of drilling fluids will be generated during vadose zone well drilling activities. The discharge is anticipated to occur between July 1, 2023 and March 31, 2024. Minor adjustments of the expected volume and dates may be required if unanticipated geological conditions are encountered, changes in well design are required, or if subcontractor schedule changes occur during drilling.

7. Expected contaminants in the discharge (e.g., nitrate-nitrogen, metals, organic compounds, salts, etc.) Include estimated concentration if known, and copies of results of laboratory analyses, if available:

No toxic pollutants, per 20.6.2.7.WW NMAC, or contaminants in exceedance of WQCC standards of 20.6.2 NMAC are expected to be encountered in the vadose zone or discharged at this location. This potable water added to the drilling mud or foam meets Primary Safe Drinking Water Act Standards and will be obtained from WSTF drinking water supply well K and/or well M. Baseline analytical results from sampling performed at well M (the newest supply well) are included in Enclosure 3. These results are consistent with those from past sampling performed at well K. Baseline results from well M sampling include two exceedances of



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PRD Assigned _____

secondary maximum contaminant level (SMCL): sulfate at 320 mg/L (SMCL = 250 mg/L) and total dissolved solids at 747 mg/L (SMCL = 500 mg/L).

8. Describe all components of wastewater processing, treatment, storage, and disposal system (e.g., pre-treatment units, impoundments(s), septic tank/leachfield, etc.). Include sizes, site layout map, plans, and specifications, etc. if available:

From ground surface to approximately 50 ft above the water table (estimated at 520 ft bgs), drilling foam or mud mixed with non-chlorinated potable WSTF site water will be discharged to one or more lined (10-mil plastic) earthen pit(s) on location. The pit(s) will be left in place. Water will be permitted to evaporate, and the pit(s) will be filled in with the originally excavated soil.

No discharge will occur from approximately 50 ft above the WSTF groundwater table to the total depth of the borehole. Development water, drill cuttings and fluids generated while drilling in the saturated zone are known to contain hazardous constituents. Therefore, all cuttings and fluids generated while drilling in the saturated zone will be accumulated in appropriately sized containers (e.g., covered roll-offs or Baker Tanks) and managed as hazardous waste.

9. Estimated maximum daily discharge volume in gallons per day. Provide water usage records or system sizing criteria if available:

Approximately 1,250 gallons per day with an estimated maximum of 20,000 gallons.

10. Estimated depth to ground water (ft): ~520 ft Source of information

Estimated based on last water level measurements taken from BLM-30 in 2018.

11. Current Total Dissolved Solids Concentration in Groundwater

The closest well with current TDS data is BLM-30, approximately 50 ft to the west @ 796 mg/L.

Signature: TIMOTHY DAVIS Digitally signed by TIMOTHY DAVIS
Date: 2023.03.27 13:35:40 -06'00'

Date: See Electronic Signature

Printed name: Timothy J. Davis

Title: Chief, Environmental Office

Certification by Responsible Person

I, _____, hereby certify that the information and data submitted in this application are true and accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this ____ day of _____, _____, upon my oath or affirmation, before a notary of the State of _____

Please return this form to:
NMED Ground Water Quality Bureau
P.O. Box 5469
Santa Fe, New Mexico 87502-5469

Telephone: 505-827-2900
Fax: 505-827-2965



For Department use Only:

Agency Interest Number _____
PRD Assigned _____

1. Name and mailing address of person proposing to discharge (Responsible Person):

<u>Timothy J. Davis – Chief, Environmental Office</u>	Work Phone: <u>575-524-5024</u>
<u>NASA-JSC White Sands Test Facility</u>	Cell/Home Phone: <u>N/A</u>
<u>P. O. BOX 20</u>	Fax: <u>575-527-5798</u>
<u>Las Cruces, NM 88004</u>	Email: <u>timothy.j.davis@nasa.gov</u>

2. Name and Position of person Completing Form:

<u>Phillip Bolen – Geologist</u>	Work Phone: <u>575-524-5286</u>
<u>NASA-JSC White Sands Test Facility</u>	Cell/Home Phone: <u>N/A</u>
<u>P.O. BOX 20</u>	Fax: <u>575-527-5544</u>
<u>Las Cruces, NM 88004</u>	Email: <u>phillip.n.bolen@nasa.gov</u>

3. Name of facility:

NASA-JSC White Sands Test Facility (WSTF)

4. Physical location of the discharge (if applicable, give street address, township, range, section, distance from closest town or landmark, directions to facility, location map):

The lined earthen pits (discharge location) will be constructed in the immediate vicinity of proposed groundwater monitoring well 600B-001-GW. The proposed well is to be located approximately one mile west of the WSTF 100 Area in the SW 1/4 SW 1/4 SW 1/4 Section 3, Township 21S, Range 3E. The new well will be located approximately 50 ft northwest of former groundwater monitoring well BLM-28. Maps indicating the proposed locations of the discharges are provided in Enclosure 2.

5. Type of operation generating the discharge (e.g., agricultural facility, domestic wastewater discharge, industrial discharge, mining operation, etc.):

The discharge of drilling fluids and cuttings will be generated during the vadose zone drilling of groundwater monitoring well 600B-001-GW.

6. Source(s) of the discharge. Describe how the wastewater, sludge, or other discharges processed and/or disposed at your facility are generated. Identify all sources. Attach additional pages if needed:

An estimated total of 20,000 gallons (0.061 acre-feet) will be discharged. Up to 0.0036 acre-feet per day (1,200 gpd) of drilling fluids will be generated during vadose zone well drilling activities. The discharge is anticipated to occur between July 1, 2023 and March 31, 2024. Minor adjustments of the stated volume and dates may be required if unanticipated geological conditions are encountered, changes in well design are required, or subcontractor schedule changes occur during drilling.

7. Expected contaminants in the discharge (e.g., nitrate-nitrogen, metals, organic compounds, salts, etc.) Include estimated concentration if known, and copies of results of laboratory analyses, if available:

No toxic pollutants, per 20.6.2.7.WW NMAC, or contaminants in exceedance of WQCC standards of 20.6.2 NMAC are expected to be encountered in the vadose zone or discharged at this location. The potable water added to the drilling mud or foam meets Primary Safe Drinking Water Act Standards and will be obtained from WSTF drinking water supply well K and/or well M. Baseline analytical results from sampling performed at well M (the newest WSTF supply well) are attached in Enclosure 3. These results are consistent with those from past sampling performed at well K. Baseline results from well M sampling include two exceedances of



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PRD Assigned _____

secondary maximum contaminant levels (SMCLs): sulfate at 320 mg/L (SMCL = 250 mg/L) and total dissolved solids at 747 mg/L (SMCL = 500 mg/L).

8. Describe all components of wastewater processing, treatment, storage, and disposal system (e.g., pre-treatment units, impoundments(s), septic tank/leachfield, etc.). Include sizes, site layout map, plans, and specifications, etc. if available:

From ground surface to approximately 20 ft above the water table (estimated at 338 ft bgs), drilling foam or mud mixed with non-chlorinated potable WSTF site water will be discharged to one or more lined (10-mil plastic) earthen pit(s) on location. The pit(s) will be left in place. Water will be permitted to evaporate, and the pit(s) will be filled in with the originally excavated soil.

No discharge will occur from the approximately 20 ft above the WSTF groundwater table to the total depth of the borehole. Development water, drill cuttings and fluids generated while drilling in the saturated zone could potentially contain hazardous constituents. Therefore, all cuttings and fluids generated while drilling in the saturated zone will be accumulated in appropriately sized containers (e.g., covered roll-offs or Baker Tanks) and managed as hazardous waste.

9. Estimated maximum daily discharge volume in gallons per day. Provide water usage records or system sizing criteria if available:

Approximately 1,250 gallons per day with an estimated maximum of 20,000 gallons.

10. Estimated depth to ground water (ft): ~338 ft Source of information:

Estimated based on last water level measurements taken in 2022 at well BLM-28.

11. Current Total Dissolved Solids Concentration in Groundwater:

The closest well with current TDS data is BLM-28, approximately 50 ft to the northwest @ 1400-1870 mg/L.

Signature: TIMOTHY DAVIS Digitally signed by TIMOTHY DAVIS
Date: 2023.03.27 13:36:12 -06'00'

Date: See Electronic Signature

Printed name: Timothy J. Davis

Title: Chief, Environmental Office

Certification by Responsible Person

I, _____, hereby certify that the information and data submitted in this application are true and accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this ____ day of _____, _____, upon my oath or affirmation, before a notary of the State of _____

Please return this form to:
NMED Ground Water Quality Bureau
P.O. Box 5469
Santa Fe, New Mexico 87502-5469

Telephone: 505-827-2900
Fax: 505-827-2965



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Agency Interest Number _____
PRD Assigned _____

1. Name and mailing address of person proposing to discharge (Responsible Person):

<u>Timothy J. Davis – Chief, Environmental Office</u>	Work Phone: <u>575-524-5024</u>
<u>NASA-JSC White Sands Test Facility</u>	Cell/Home Phone: <u>N/A</u>
<u>P. O. BOX 20</u>	Fax: <u>575-527-5798</u>
<u>Las Cruces, NM 88004</u>	Email: <u>timothy.j.davis@nasa.gov</u>

2. Name and Position of person Completing Form:

<u>Phillip Bolen – Geologist</u>	Work Phone: <u>575-524-5286</u>
<u>NASA-JSC White Sands Test Facility</u>	Cell/Home Phone: <u>N/A</u>
<u>P.O. BOX 20</u>	Fax: <u>575-527-5544</u>
<u>Las Cruces, NM 88004</u>	Email: <u>phillip.n.bolen@nasa.gov</u>

3. Name of facility:

NASA-JSC White Sands Test Facility (WSTF)

4. Physical location of the discharge (if applicable, give street address, township, range, section, distance from closest town or landmark, directions to facility, location map):

The lined earthen pits (discharge location) will be constructed in the immediate vicinity of the proposed groundwater monitoring well 600C-001-GW. The proposed well is to be located approximately 2 miles west of the WSTF 100 Area in the SW 1/4 SW 1/4 SW 1/4 Section 4, Township 21S, Range 3E. The new well will be located approximately 50 ft east of existing groundwater monitoring well BLM-10-517. Maps indicating the proposed locations of the discharges are provided in Enclosure 2.

5. Type of operation generating the discharge (e.g., agricultural facility, domestic wastewater discharge, industrial discharge, mining operation, etc.):

The discharge of drilling fluids and cuttings will be generated during the vadose zone drilling of groundwater monitoring well 600C-001-GW.

6. Source(s) of the discharge. Describe how the wastewater, sludge, or other discharges processed and/or disposed at your facility are generated. Identify all sources. Attach additional pages if needed:

An estimated total of 20,000 gallons (0.061 acre-feet) will be discharged. Up to 0.0036 acre-feet per day (1,200 gpd) of drilling fluids will be generated during vadose zone well drilling activities. The discharge is anticipated to occur between July 1, 2023 and March 31, 2024. Minor adjustments of the expected volume and dates may be required if unanticipated geological conditions are encountered, changes in well design are required, or subcontractor schedule changes occur during drilling.

7. Expected contaminants in the discharge (e.g., nitrate-nitrogen, metals, organic compounds, salts, etc.) Include estimated concentration if known, and copies of results of laboratory analyses, if available:

No toxic pollutants, per 20.6.2.7.WW NMAC, or contaminants in exceedance of WQCC standards of 20.6.2 NMAC are expected to be encountered or discharged. This potable water added to the drilling mud or foam meets Primary Safe Drinking Water Act Standards and will be obtained from WSTF drinking water supply well K and /or well M. Baseline analytical results from sampling performed at well M (the newest supply well) are included in Enclosure 3. These results are consistent with those from past sampling performed at well K. Baseline results from well M sampling include two exceedances of secondary maximum contaminant level (SMCL): sulfate at 320 mg/L (SMCL = 250 mg/L) and total dissolved solids at 747 mg/L (SMCL = 500 mg/L).



For Department use Only:

Agency Interest Number _____
PRD Assigned _____

8. Describe all components of wastewater processing, treatment, storage, and disposal system (e.g., pre-treatment units, impoundments(s), septic tank/leachfield, etc.). Include sizes, site layout map, plans, and specifications, etc. if available:

From ground surface to approximately 20 ft above the water table (estimated at 497 ft bgs), drilling foam or mud mixed with non-chlorinated potable WSTF site water will be discharged to one or more lined (10-mil plastic) earthen pit(s) on location. The pit(s) will be left in place. Water will be permitted to evaporate, and the pit(s) will be filled in with the originally excavated soil.

No discharge will occur from approximately 50 ft above the WSTF groundwater table to the total depth of the borehole. Development water, drill cuttings, and fluids generated while drilling in the saturated zone, while not considered hazardous, will still be containerized and characterized before its disposal. Therefore, all cuttings and fluids generated while drilling in the saturated zone will be accumulated in appropriately sized containers (e.g., covered roll-offs or Baker Tanks) until the results of confirmation sampling are known.

9. Estimated maximum daily discharge volume in gallons per day. Provide water usage records or system sizing criteria if available:

Approximately 1,250 gallons per day with an estimated maximum of 20,000 gallons.

10. Estimated depth to ground water (ft): ~497 ft Source of information:

Estimated based on last water level measurements taken in 2022 at BLM-10-517.

11. Current Total Dissolved Solids Concentration in Groundwater:

The closest well with current TDS data is BLM-10-517, approximately 50 ft to the west @ 774 mg/L.

Signature: TIMOTHY DAVIS Digitally signed by TIMOTHY DAVIS
Date: 2023.03.27 13:36:41 -06'00'

Date: See Electronic Signature

Printed name: Timothy J. Davis

Title: Chief, Environmental Office

Certification by Responsible Person

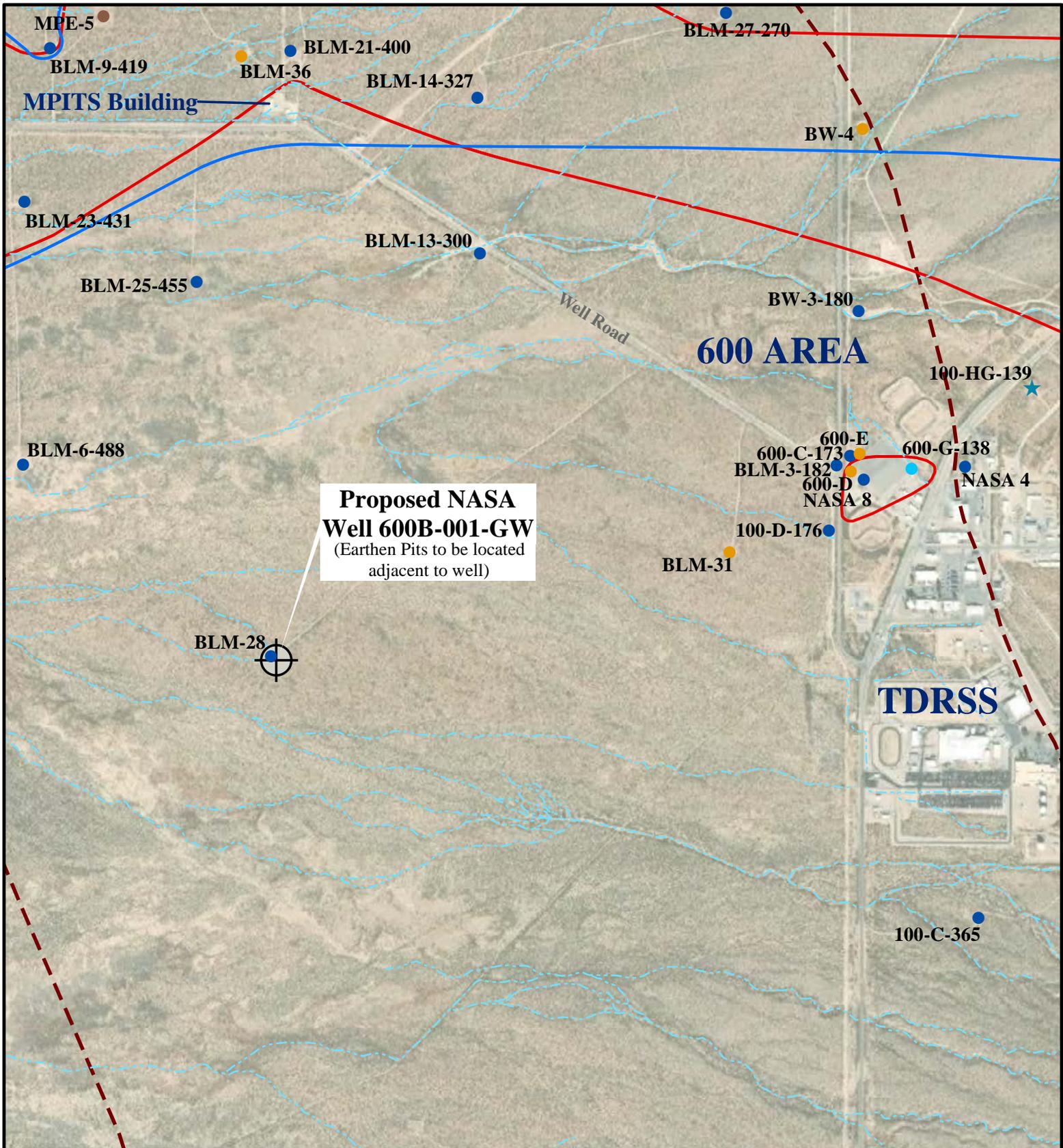
I, _____, hereby certify that the information and data submitted in this application are true and accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this ____ day of _____, _____, upon my oath or affirmation, before a notary of the State of _____

Please return this form to:
NMED Ground Water Quality Bureau
P.O. Box 5469
Santa Fe, New Mexico 87502-5469

Telephone: 505-827-2900
Fax: 505-827-2965

Enclosure 2



Proposed NASA Well 600B-001-GW
 (Earthen Pits to be located adjacent to well)

Proposed Monitoring Well
600B-001-GW
Discharge Location

NASA Johnson Space Center
 White Sands Test Facility Las Cruces,
 New Mexico

Coordinate System:
 NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet
 G:\Projects\environmental\Well_Installation\600B-001-GW\



Proposed 600B-001-GW Location

- Conventional Well
- Multiport Well
- Perched Well
- Exploration Well
- ★ MSVGM Well

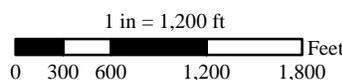
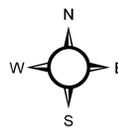
— NDMA MCL (1.1 ppt)

— TCE MCL (4.9 ppb)

- - - Arroyo

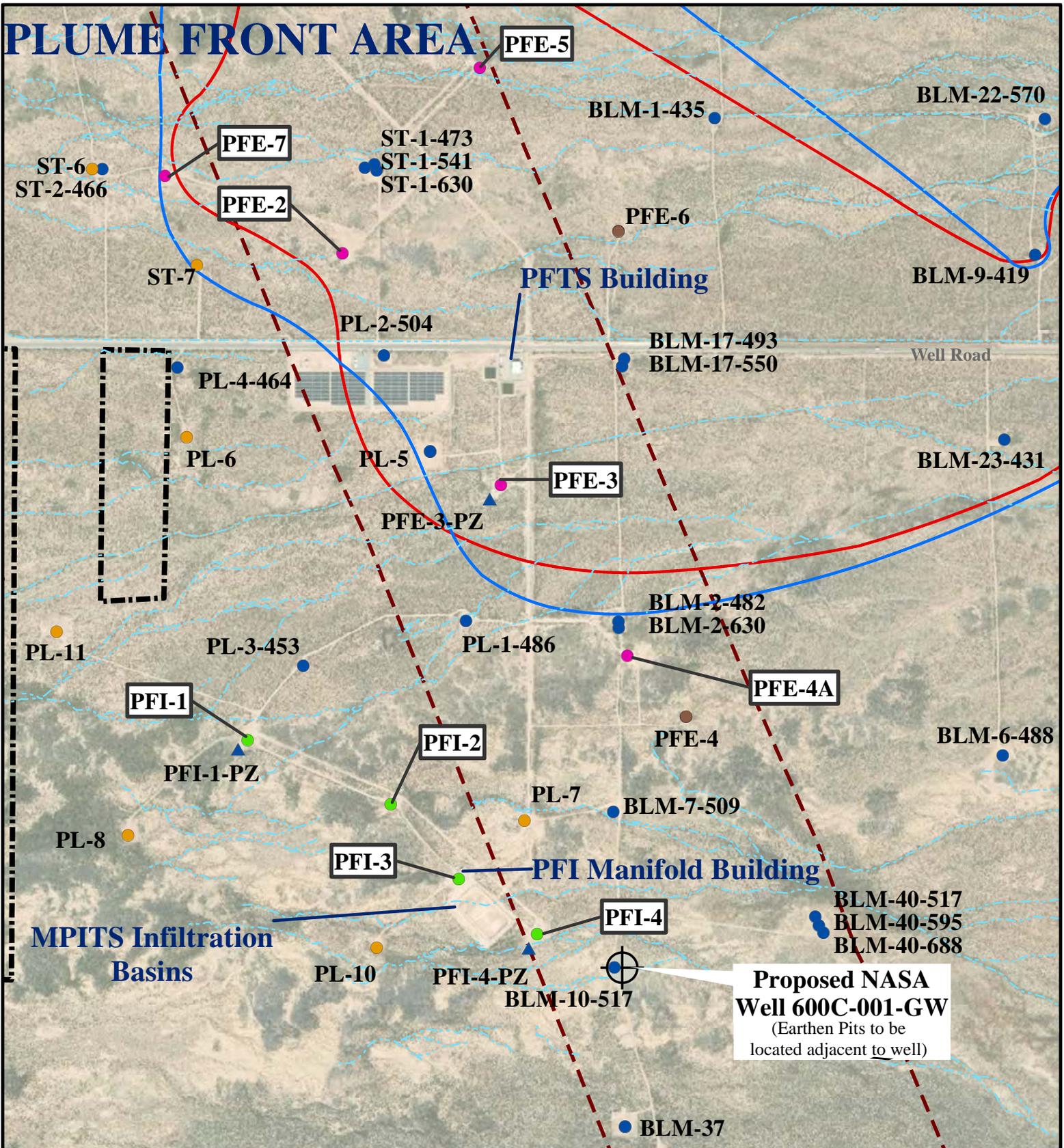
- - - Fault Zone

WSTF Boundary



March 2023

PLUME FRONT AREA



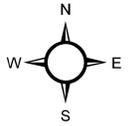
Proposed Monitoring Well 600C-001-GW Discharge Location

NASA Johnson Space Center
White Sands Test Facility Las Cruces,
New Mexico

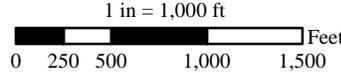
Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

G:\Projects\environmental\Well_Installation\BLM-10\twin_600C-001-GW\

- Proposed 600C-001-GW Location
- Multipoint Well
- Conventional Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- NDMA MCL (1.1 ppt)
- TCE MCL (4.9 ppb)
- Arroyo
- Western Boundary Fault Zone
- WSTF Boundary

1 in = 1,000 ft



0 250 500 1,000 1,500 Feet

March 2023

Enclosure 3



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 20, 2019

Brian Barrick
NASA White Sands Test Facility
P.O. Box 20
Las Cruces, NM 88004
TEL: (575) 524-5119
FAX

RE: NM3590607
NASA JSC White Sands Test Facility FF

OrderNo.: 1904174

Dear Brian Barrick:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/3/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written in a cursive style.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: NASA White Sands Test Facility

Client Sample ID: Treatment Plant-1

Project: NM3590607

Collection Date: 4/2/2019 8:31:00 AM

Lab ID: 1904174-001

Matrix: AQUEOUS

Received Date: 4/3/2019 8:47:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 504.1: EDB/DBCP								Analyst: CLP
1,2-Dibromo-3-chloropropane	ND	0.0039	0.019		µg/L	1	4/11/2019 5:27:15 PM	44277
1,2-Dibromoethane	ND	0.0033	0.0095		µg/L	1	4/11/2019 5:27:15 PM	44277
EPA METHOD 300.0: ANIONS								Analyst: smb
Fluoride	0.45	0.050	0.10		mg/L	1	4/24/2019 12:01:07 AM	R59387
Chloride	40	10	10		mg/L	20	4/24/2019 12:13:32 AM	R59387
Sulfate	320	1.1	10	*	mg/L	20	4/24/2019 12:13:32 AM	R59387
Nitrate+Nitrite as N	0.81	0.040	1.0	J	mg/L	5	4/24/2019 12:25:56 AM	R59387
PURGEABLE ORGANICS BY EPA 524								Analyst: DJF
Benzene	ND	0.028	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Carbon tetrachloride	ND	0.045	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Chlorobenzene	ND	0.035	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
cis-1,2-Dichloroethene	ND	0.036	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
1,2-Dichlorobenzene	ND	0.057	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
1,4-Dichlorobenzene	ND	0.043	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
1,2-Dichloroethane	ND	0.034	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
1,1-Dichloroethene	ND	0.035	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
1,2-Dichloropropane	ND	0.062	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Ethylbenzene	ND	0.051	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Methylene chloride	ND	0.055	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Styrene	ND	0.050	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Tetrachloroethene	ND	0.028	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Toluene	ND	0.051	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
trans-1,2-Dichloroethene	ND	0.046	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
1,2,4-Trichlorobenzene	ND	0.060	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
1,1,1-Trichloroethane	ND	0.048	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
1,1,2-Trichloroethane	ND	0.068	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Trichloroethene	ND	0.049	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Vinyl chloride	ND	0.042	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Total Xylenes	ND	0.17	0.50		µg/L	1	4/5/2019 2:38:37 PM	W5896
Surr: 1,2-Dichlorobenzene-d4	113		70-130		%Rec	1	4/5/2019 2:38:37 PM	W5896
Surr: 4-Bromofluorobenzene	111		70-130		%Rec	1	4/5/2019 2:38:37 PM	W5896
525.2 SYNTHETIC ORGANICS								Analyst: Anat
Di(2-Ethylhexyl)adipate	ND	0.200	0.200		µg/L	1	4/20/2019	R59993
Hexachlorocyclopentadiene	ND	0.100	0.100		µg/L	1	4/20/2019	R59993
Atrazine	ND	0.100	0.100		µg/L	1	4/20/2019	R59993
Alachlor	ND	0.200	0.200		µg/L	1	4/20/2019	R59993
Hexachlorobenzene	ND	0.100	0.100		µg/L	1	4/20/2019	R59993
Di(2-ethylhexyl)phthalate	ND	0.600	0.600		µg/L	1	4/20/2019	R59993

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quantitative Limit
S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1904174

Date Reported: 5/20/2019

CLIENT: NASA White Sands Test Facility

Client Sample ID: Treatment Plant-1

Project: NM3590607

Collection Date: 4/2/2019 8:31:00 AM

Lab ID: 1904174-001

Matrix: AQUEOUS

Received Date: 4/3/2019 8:47:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
525.2 SYNTHETIC ORGANICS								Analyst: Anat
Benzo(a)pyrene	ND	0.0200	0.0200		µg/L	1	4/20/2019	R59993
Simazine	ND	0.0700	0.0700		µg/L	1	4/20/2019	R59993
EPA 531.2: CARBAMATES								Analyst: Anat
Carbofuran	ND	0.90	0.90		µg/L	1	4/9/2019	R59993
Oxamyl	ND	2.0	2.0		µg/L	1	4/9/2019	R59993
EPA 335.4: TOTAL CYANIDE SUBBED								Analyst: Anat
Cyanide	ND	0.0100	0.0100		mg/L	1	4/8/2019	R59993
SM2120B: COLOR								Analyst: Anat
Color	ND @ pH 7.27	5.0	5.0		Color Uni	1	4/5/2019	R59993
EPA 549.2: DIQUAT								Analyst: Anat
Diquat	ND	0.40	0.40		µg/L	1	4/8/2019	R59993
EPA 548.1: ENDOTHALL								Analyst: Anat
Endothall	ND	9.0	9.0		µg/L	1	4/10/2019	R59993
EPA 547: GLYPHOSATE								Analyst: Anat
Glyphosate	ND	5.0	5.0		µg/L	1	4/11/2019	R59993
EPA 515.3 HERBICIDES								Analyst: Anat
2,4-D	ND	0.10	0.10		µg/L	1	4/25/2019	R59993
2,4,5-TP (Silvex)	ND	0.20	0.20		µg/L	1	4/25/2019	R59993
Dalapon	ND	1.0	1.0		µg/L	1	4/25/2019	R59993
Dinoseb	ND	0.20	0.20		µg/L	1	4/25/2019	R59993
Pentachlorophenol	ND	0.040	0.040		µg/L	1	4/25/2019	R59993
Picloram	ND	0.10	0.10		µg/L	1	4/25/2019	R59993
SM2150B: ODOR								Analyst: Anat
Odor	ND	1.0	1.0		TON	1	4/5/2019	R59993
EPA 505: CHLORINATED PESTICIDES & PCBS								Analyst: Anat
Endrin	ND	0.010	0.010		µg/L	1	4/12/2019	R59993
gamma-BHC	ND	0.020	0.020		µg/L	1	4/12/2019	R59993
Methoxychlor	ND	0.10	0.10		µg/L	1	4/12/2019	R59993
Toxaphene	ND	1.0	1.0		µg/L	1	4/12/2019	R59993
Heptachlor	ND	0.040	0.040		µg/L	1	4/12/2019	R59993
Heptachlor epoxide	ND	0.020	0.020		µg/L	1	4/12/2019	R59993
Polychlorinated Biphenyls	ND	0.10	0.10		µg/L	1	4/12/2019	R59993
Chlordane	ND	0.10	0.10		µg/L	1	4/12/2019	R59993
SM5540C: SURFACTANTS								Analyst: Anat

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1904174

Date Reported: 5/20/2019

CLIENT: NASA White Sands Test Facility

Client Sample ID: Treatment Plant-1

Project: NM3590607

Collection Date: 4/2/2019 8:31:00 AM

Lab ID: 1904174-001

Matrix: AQUEOUS

Received Date: 4/3/2019 8:47:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM5540C: SURFACTANTS								Analyst: Anat
Surfactants	ND	0.050	0.050	H	mg/L	1	4/10/2019	R59993
SM4500-H+B / 9040C: PH								Analyst: JRR
pH	7.48			H	pH units	1	4/4/2019 11:00:33 AM	R58958
SM2540C MOD: TOTAL DISSOLVED SOLIDS								Analyst: KS
Total Dissolved Solids	747	20.0	20.0	*	mg/L	1	4/6/2019 1:10:00 PM	44108

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: NASA White Sands Test Facility

Client Sample ID: Treatment Plant-1

Project: NM3590607

Collection Date: 3/29/2019 8:30:00 AM

Lab ID: 1904174-002

Matrix: AQUEOUS

Received Date: 4/3/2019 8:47:00 AM

Table with columns: Analyses, Result, MDL, RL, Qual, Units, DF, Date Analyzed, Batch ID. Includes sections for EPA METHOD 200.7: METALS, EPA 200.8: METALS, EPA METHOD 245.1: MERCURY, EPA 900.0: GROSS ALPHA, and EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers: * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit PQL Practical Quantitative Limit S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank E Value above quantitation range J Analyte detected below quantitation limits P Sample pH Not In Range RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: NASA White Sands Test Facility

Client Sample ID: Trip Blank

Project: NM3590607

Collection Date:

Lab ID: 1904174-003

Matrix: TRIP BLANK

Received Date: 4/3/2019 8:47:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
PURGEABLE ORGANICS BY EPA 524								Analyst: DJF
Benzene	ND	0.028	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Carbon tetrachloride	ND	0.045	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Chlorobenzene	ND	0.035	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
cis-1,2-Dichloroethene	ND	0.036	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
1,2-Dichlorobenzene	ND	0.057	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
1,4-Dichlorobenzene	ND	0.043	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
1,2-Dichloroethane	ND	0.034	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
1,1-Dichloroethene	ND	0.035	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
1,2-Dichloropropane	ND	0.062	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Ethylbenzene	ND	0.051	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Methylene chloride	ND	0.055	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Styrene	ND	0.050	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Tetrachloroethene	ND	0.028	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Toluene	ND	0.051	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
trans-1,2-Dichloroethene	ND	0.046	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
1,2,4-Trichlorobenzene	ND	0.060	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
1,1,1-Trichloroethane	ND	0.048	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
1,1,2-Trichloroethane	ND	0.068	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Trichloroethene	ND	0.049	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Vinyl chloride	ND	0.042	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Total Xylenes	ND	0.17	0.50		µg/L	1	4/5/2019 3:06:10 PM	W5896
Surr: 1,2-Dichlorobenzene-d4	116		70-130		%Rec	1	4/5/2019 3:06:10 PM	W5896
Surr: 4-Bromofluorobenzene	104		70-130		%Rec	1	4/5/2019 3:06:10 PM	W5896

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1904174

20-May-19

Client: NASA White Sands Test Facility

Project: NM3590607

Sample ID: MB-44204	SampType: MBLK		TestCode: EPA 200.8: Metals							
Client ID: PBW	Batch ID: 44204		RunNo: 59014							
Prep Date: 4/8/2019	Analysis Date: 4/9/2019		SeqNo: 1985513		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Selenium	ND	0.0010								
Thallium	ND	0.00050								
Uranium	ND	0.00050								

Sample ID: MSLLCS-44204	SampType: LCSLL		TestCode: EPA 200.8: Metals							
Client ID: BatchQC	Batch ID: 44204		RunNo: 59014							
Prep Date: 4/8/2019	Analysis Date: 4/9/2019		SeqNo: 1985514		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00098	0.0010	0.001000	0	97.7	50	150			J
Arsenic	0.00076	0.0010	0.001000	0	75.9	50	150			J
Copper	0.00098	0.0010	0.001000	0	98.2	50	150			J
Selenium	0.00090	0.0010	0.001000	0	89.9	50	150			J
Thallium	0.00043	0.00050	0.0005000	0	86.6	50	150			J
Uranium	0.00049	0.00050	0.0005000	0	97.9	50	150			J

Sample ID: MSLCS-44204	SampType: LCS		TestCode: EPA 200.8: Metals							
Client ID: LCSW	Batch ID: 44204		RunNo: 59014							
Prep Date: 4/8/2019	Analysis Date: 4/9/2019		SeqNo: 1985515		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.8	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.2	85	115			
Copper	0.023	0.0010	0.02500	0	91.9	85	115			
Selenium	0.023	0.0010	0.02500	0	91.2	85	115			
Thallium	0.011	0.00050	0.01250	0	91.9	85	115			
Uranium	0.013	0.00050	0.01250	0	101	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1904174

20-May-19

Client: NASA White Sands Test Facility

Project: NM3590607

Sample ID: MB-44411	SampType: MBLK	TestCode: EPA Method 245.1: Mercury								
Client ID: PBW	Batch ID: 44411	RunNo: 59288								
Prep Date: 4/17/2019	Analysis Date: 4/18/2019	SeqNo: 1996307	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: LCS-44411	SampType: LCS	TestCode: EPA Method 245.1: Mercury								
Client ID: LCSW	Batch ID: 44411	RunNo: 59288								
Prep Date: 4/17/2019	Analysis Date: 4/18/2019	SeqNo: 1996308	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.4	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1904174

20-May-19

Client: NASA White Sands Test Facility

Project: NM3590607

Sample ID: MB	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R59387	RunNo: 59387								
Prep Date:	Analysis Date: 4/23/2019	SeqNo: 2000629	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: LCS	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: R59387	RunNo: 59387								
Prep Date:	Analysis Date: 4/23/2019	SeqNo: 2000631	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	0.49	0.10	0.5000	0	98.1	90	110			
Chloride	4.9	0.50	5.000	0	97.4	90	110			
Sulfate	10	0.50	10.00	0	101	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1904174

20-May-19

Client: NASA White Sands Test Facility

Project: NM3590607

Sample ID: MB-44277	SampType: MBLK		TestCode: EPA Method 504.1: EDB/DBCP							
Client ID: PBW	Batch ID: 44277		RunNo: 59112							
Prep Date: 4/11/2019	Analysis Date: 4/11/2019		SeqNo: 1989856				Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.020								
1,2-Dibromoethane	ND	0.010								

Sample ID: LCS-44277	SampType: LCS		TestCode: EPA Method 504.1: EDB/DBCP							
Client ID: LCSW	Batch ID: 44277		RunNo: 59112							
Prep Date: 4/11/2019	Analysis Date: 4/11/2019		SeqNo: 1989857				Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	0.11	0.020	0.1000	0	110	70	130			
1,2-Dibromoethane	0.11	0.010	0.1000	0	106	70	130			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1904174

20-May-19

Client: NASA White Sands Test Facility
Project: NM3590607

Sample ID: rb	SampType: MBLK		TestCode: PURGEABLE ORGANICS by EPA 524							
Client ID: PBW	Batch ID: W58964		RunNo: 58964							
Prep Date:	Analysis Date: 4/5/2019		SeqNo: 1983627		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
Carbon tetrachloride	ND	0.50								
Chlorobenzene	ND	0.50								
cis-1,2-Dichloroethene	ND	0.50								
1,2-Dichlorobenzene	ND	0.50								
1,4-Dichlorobenzene	ND	0.50								
1,2-Dichloroethane	ND	0.50								
1,1-Dichloroethene	ND	0.50								
1,2-Dichloropropane	ND	0.50								
Ethylbenzene	ND	0.50								
Methylene chloride	ND	0.50								
Styrene	ND	0.50								
Tetrachloroethene	ND	0.50								
Toluene	ND	0.50								
trans-1,2-Dichloroethene	ND	0.50								
1,2,4-Trichlorobenzene	ND	0.50								
1,1,1-Trichloroethane	ND	0.50								
1,1,2-Trichloroethane	ND	0.50								
Trichloroethene	ND	0.50								
Vinyl chloride	ND	0.50								
Total Xylenes	ND	0.50								
Surr: 1,2-Dichlorobenzene-d4	2.3		2.000		114	70	130			
Surr: 4-Bromofluorobenzene	2.2		2.000		108	70	130			

Sample ID: 62.5ng ccv_lcs	SampType: LCS		TestCode: PURGEABLE ORGANICS by EPA 524							
Client ID: LCSW	Batch ID: W58964		RunNo: 58964							
Prep Date:	Analysis Date: 4/5/2019		SeqNo: 1983630		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	2.4	0.50	2.500	0	94.6	70	130			
Carbon tetrachloride	2.4	0.50	2.500	0	97.6	70	130			
Chlorobenzene	2.5	0.50	2.500	0	99.3	70	130			
cis-1,2-Dichloroethene	2.5	0.50	2.500	0	98.7	70	130			
1,2-Dichlorobenzene	2.5	0.50	2.500	0	101	70	130			
1,4-Dichlorobenzene	2.4	0.50	2.500	0	96.6	70	130			
1,2-Dichloroethane	2.4	0.50	2.500	0	95.9	70	130			
1,1-Dichloroethene	2.3	0.50	2.500	0	93.0	70	130			
1,2-Dichloropropane	2.6	0.50	2.500	0	103	70	130			
Ethylbenzene	2.5	0.50	2.500	0	101	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1904174

20-May-19

Client: NASA White Sands Test Facility
Project: NM3590607

Sample ID: 62.5ng ccv_ics		SampType: LCS		TestCode: PURGEABLE ORGANICS by EPA 524						
Client ID: LCSW		Batch ID: W58964		RunNo: 58964						
Prep Date:		Analysis Date: 4/5/2019		SeqNo: 1983630			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methylene chloride	2.6	0.50	2.500	0	102	70	130			
Styrene	2.2	0.50	2.500	0	88.6	70	130			
Tetrachloroethene	2.4	0.50	2.500	0	96.8	70	130			
Toluene	2.5	0.50	2.500	0	99.4	70	130			
trans-1,2-Dichloroethene	2.4	0.50	2.500	0	96.7	70	130			
1,2,4-Trichlorobenzene	2.5	0.50	2.500	0	100	70	130			
1,1,1-Trichloroethane	2.4	0.50	2.500	0	95.8	70	130			
1,1,2-Trichloroethane	2.6	0.50	2.500	0	103	70	130			
Trichloroethene	2.3	0.50	2.500	0	92.8	70	130			
Vinyl chloride	2.4	0.50	2.500	0	95.9	70	130			
Total Xylenes	7.8	0.50	7.500	0	104	70	130			
Surr: 1,2-Dichlorobenzene-d4	2.2		2.000		112	70	130			
Surr: 4-Bromofluorobenzene	2.1		2.000		106	70	130			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1904174

20-May-19

Client: NASA White Sands Test Facility

Project: NM3590607

Sample ID: MB-R59532	SampType: MBLK	TestCode: EPA 900.0: Gross Alpha								
Client ID: PBW	Batch ID: R59532	RunNo: 59532								
Prep Date:	Analysis Date: 4/19/2019	SeqNo: 2007855			Units: pCi/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gross Alpha	0.263	2.03								
Gross Alpha precision (±)	0.833	2.03								
Gross Beta	-0.098	1.88								
Gross Beta precision (±)	0.754	1.88								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1904174

20-May-19

Client: NASA White Sands Test Facility

Project: NM3590607

Sample ID: MB-R59532	SampType: MBLK	TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed								
Client ID: PBW	Batch ID: R59532	RunNo: 59532								
Prep Date:	Analysis Date: 4/22/2019	SeqNo: 2007854			Units: pCi/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.212	0.520								
Radium-226 ±	0.323	0.520								
Radium-228	-0.0681	0.816								
Radium-228 ±	0.343	0.816								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1904174

20-May-19

Client: NASA White Sands Test Facility

Project: NM3590607

Sample ID: MB-44108	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 44108	RunNo: 58944								
Prep Date: 4/4/2019	Analysis Date: 4/6/2019	SeqNo: 1982159	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-44108	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 44108	RunNo: 58944								
Prep Date: 4/4/2019	Analysis Date: 4/6/2019	SeqNo: 1982160	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	0	103	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix | |

Sample Log-In Check List

Client Name: ~~NMED Drinking Water SF~~ NASA mg 5/20/19 as per JC. Work Order Number: 1904174

RcptNo: 1

Received By: Yazmine Garduno 4/3/2019 8:47:00 AM

Completed By: Victoria Zellar 4/3/2019 10:39:54 AM

Reviewed By: DAD 4/3/19

Victoria Zellar

Victoria Zellar

Labeled by TMM 4-3-19

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? FedEx

Log In

3. Was an attempt made to cool the samples? Yes No NA
 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 5. Sample(s) in proper container(s)? Yes No
 6. Sufficient sample volume for indicated test(s)? Yes No
 7. Are samples (except VOA and ONG) properly preserved? Yes No
 8. Was preservative added to bottles? Yes No NA
 9. VOA vials have zero headspace? Yes No No VOA Vials *WV2 4/3/19*
 10. Were any sample containers received broken? Yes No
 11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes No
 12. Are matrices correctly identified on Chain of Custody? Yes No
 13. Is it clear what analyses were requested? Yes No
 14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes No

of preserved bottles checked for pH: *(6) (<2 or >12 unless noted)*
 Adjusted? *No*
 Checked by: *TMM 4-3-19*

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			

Request ID Here

ANALYTICAL REQUEST

Accession # Here

1904020834		One Form Per Sample	One Form Per Sample		1904174-001
LAB USE >>> ONLY	DATE <<< TIME STAMP	SAMPLE TEMPERATURE (deg C): 2.3°C		Field preservation confirmed	
SUBMITTER CODE (3-digit):		LAB REMARKS:		Sample Priority (If 1 or 2 call lab): <input type="checkbox"/> Preserved to pH < 2 at Lab Date/Initial:	
<input type="radio"/> 55000 (DWB-SDWA - fee-for-service)		<input type="radio"/> 55420 (DWB-non-reg. contaminants)		<input type="radio"/> 64000 (Individual client fee-for-service) <input checked="" type="radio"/> OTHER 55001	
NMED AREA OFFICE: Las Cruces		SAMPLER NAME: Richard Mirabal		SAMPLE CONTACT: 575-640-5137	
WATER SYSTEM ID: NM3590607		WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF			
FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1)		FACILITY ID: 90607005		SAMPLING POINT ENTRY POINT (SP906070051)	
FIELD DATA AND REMARKS	<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated	Residual (mg/l):	pH:	Conductivity (uS/cm):	Temperature (deg. C):
Field remarks:					
SAMPLING DOCUMENTATION	<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite			Describe:	
	<input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other				
SAMPLE TYPE	<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water			Describe:	
	<input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid				
PRESERVATION	<input type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input checked="" type="checkbox"/> HCl added to pH <= 2 <input type="checkbox"/> HNO3 added to pH <= 2 <input type="checkbox"/> H2SO4 added to pH <= 2			Describe:	
	<input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input type="checkbox"/> Other				
	<input checked="" type="checkbox"/> C6H8O6 acid added <input type="checkbox"/> Acidified at Lab <input type="checkbox"/> Na2S2O3				
Analysis Requested:	VOA (EPA 524.2)				
Additional Analytical Requests:					
CHAIN OF CUSTODY					
MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES					
Sample was Collected By:	Print Name Richard Mirabal	Signature <i>Richard Mirabal</i>	Sampler / Operator ID # 06297	Date of Collection MM/DD/YY 04/02/19	Time of Collection HHMM (24 HR) 0834
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Placed in Care of:	Print Name of Carrier Federal Express	Tracking Number / Bill of Lading 7469-0684-2024	Date MM/DD/YY 4-2-19	Time HHMM (24 HR) 10:50	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Relinquished by:	Print Name of Relinquisher	Signature of Relinquisher	Date MM/DD/YY	Time HHMM (24 HR)	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY					
Relinquished by:	Print Name of Receiver Yasmine Garduño	Signature of Receiver <i>Yasmine Garduño</i>	Date MM/DD/YY 04/03/19	Time HHMM (24 HR) 0847	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input checked="" type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Comments:					
Comments:					

Request ID Here
 1904020843
 1904020842

ANALYTICAL REQUEST
 Accession # Here

One Form Per Sample
 1904174-001

LAB USE >>> ONLY	DATE <<< TIME STAMP	SAMPLE TEMPERATURE (deg C): 2.3°	Field preservation confirmed
SUBMITTER CODE (3-digit):		Sample Priority (If 1 or 2 call lab):	<input type="checkbox"/> Preserved to pH < 2 at Lab Date/Initial:
LAB REMARKS:			
<input type="radio"/> 55000 (DWB-SDWA - fee-for-service) <input type="radio"/> 55420 (DWB-non-reg. contaminants) <input type="radio"/> 64000 (Individual client fee-for-service) <input checked="" type="radio"/> OTHER 55001			
NMED AREA OFFICE: Las Cruces		SAMPLER NAME: Richard Mirabal	SAMPLE CONTACT: 575-640-5137
WATER SYSTEM ID: NM3590607		WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF	
FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1)		FACILITY ID: 90607005	SAMPLING POINT Entry Point (SP906070051)
FIELD DATA AND REMARKS	<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated Residual (mg/l): pH: Conductivity (uS/cm): Temperature (deg. C):	Field remarks:	
SAMPLING DOCUMENTATION	<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite Describe:		
SAMPLE TYPE	<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water Describe:		
PRESERVATION	<input checked="" type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input type="checkbox"/> HCl added to pH <= 2 <input type="checkbox"/> HNO3 added to pH <= 2 <input type="checkbox"/> H2SO4 added to pH <= 2 Describe:		
Analysis Requested:	Surfactants (SM5540 C); Corrosivity (EPA 9045D); TDS (SM2540 C (Mod.)); pH (SM4500-H+ B/EPA 9040C); Cont d		
Additional Analytical Requests:	EPA 300.0 (F, NO2, NO3, Nitrate+Nitrite, Cl, SO4)		

CHAIN OF CUSTODY

MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES

Sample was Collected By:	Print Name Richard Mirabal	Signature <i>Richard Mirabal</i>	Sampler / Operator ID # 08297	Date of Collection MM/DD/YY 04/02/19	Time of Collection HHMM (24 HR) 0842, 0843
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Placed in Care of:	Print Name of Carrier Federal Express	Tracking Number / Bill of Lading 7469-0684-2024	Date MM/DD/YY 4-2-19	Time HHMM (24 HR) 10:50	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Relinquished by:	Print Name of Relinquisher	Signature of Relinquisher	Date MM/DD/YY	Time HHMM (24 HR)	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					

TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY

Relinquished by:	Print Name of Receiver Yasmine Garduini	Signature of Receiver <i>Yasmine Garduini</i>	Date MM/DD/YY 04/03/19	Time HHMM (24 HR) 0847
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input checked="" type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged				
Comments:				
Comments:				

Request ID Here

ANALYTICAL REQUEST
Accession # Here

1904020832		One Form Per Sample		One Form Per Sample		1904174001	
LAB USE >>> ONLY	DATE <<< TIME STAMP	SAMPLE TEMPERATURE (deg C): 23°C		Field preservation confirmed			
SUBMITTER CODE (3-digit):		LAB REMARKS:		Sample Priority (If 1 or 2 call lab):		<input type="checkbox"/> Preserved to pH < 2 at Lab Date/Initial:	
<input type="radio"/> 55000 (DWB-SDWA - fee-for-service)		<input type="radio"/> 55420 (DWB-non-reg. contaminants)		<input type="radio"/> 64000 (Individual client fee-for-service)		<input checked="" type="radio"/> OTHER 55001	
NMED AREA OFFICE: Las Cruces		SAMPLER NAME: Richard Mirabal		SAMPLE CONTACT: 575-640-5137			
WATER SYSTEM ID: NM3590607		WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF					
FACILITY/LOCATION: Treatment Plant #1 (Booster #1)		FACILITY ID: 90607005		SAMPLING POINT Entry Point (SP906070051)			
FIELD DATA AND REMARKS	<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated	Residual (mg/l):	pH:	Conductivity (uS/cm):	Temperature (deg. C):		
Field remarks:							
SAMPLING DOCUMENTATION	<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite			Describe:			
	<input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other						
SAMPLE TYPE	<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water			Describe:			
	<input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid						
PRESERVATION	<input type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input type="checkbox"/> HCl added to pH <= 2 <input type="checkbox"/> HNO3 added to pH <= 2 <input checked="" type="checkbox"/> H2SO4 added to pH <= 2			Describe:			
	<input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input type="checkbox"/> Other						
	<input type="checkbox"/> C6H8O6 acid added <input type="checkbox"/> Acidified at Lab <input type="checkbox"/> Na2S2O3						
Analysis Requested:	Nitrate + Nitrite, backup (EPA 300.0)						
Additional Analytical Requests:							
CHAIN OF CUSTODY							
MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES							
Sample was Collected By:	Print Name Richard Mirabal	Signature <i>Richard Mirabal</i>	Sampler / Operator ID # 08297	Date of Collection MM/DD/YY 04/02/19	Time of Collection HHMM (24 HR) 0832		
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Placed in Care of:	Print Name of Carrier Federal Express	Tracking Number / Bill of Lading 7469-0684-2024		Date MM/DD/YY 4-2-19	Time HHMM (24 HR) 10:50		
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Relinquished by:	Print Name of Relinquisher	Signature of Relinquisher		Date MM/DD/YY	Time HHMM (24 HR)		
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY							
Relinquished by:	Print Name of Receiver Yasmine Garduza	Signature of Receiver <i>Yasmine Garduza</i>		Date MM/DD/YY 04/03/19	Time HHMM (24 HR) 0847		
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input checked="" type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Comments:							
Comments:							

Request ID Here

ANALYTICAL REQUEST

Accession # Here

1904020336		One Form Per Sample		One Form Per Sample		1904174-001	
LAB USE >>> ONLY	DATE <<< TIME STAMP	SAMPLE TEMPERATURE (deg C): 2.3°C		Field preservation confirmed			
SUBMITTER CODE (3-digit):		LAB REMARKS:		Sample Priority (If 1 or 2 call lab):		<input type="checkbox"/> Preserved to pH < 2 at Lab Date/Initial:	
<input type="radio"/> 55000 (DWB-SDWA - fee-for-service)		<input type="radio"/> 55420 (DWB-non-reg. contaminants)		<input type="radio"/> 64000 (Individual client fee-for-service)		<input checked="" type="radio"/> OTHER 55001	
NMED AREA OFFICE: Las Cruces		SAMPLER NAME: Richard Mirabal		SAMPLE CONTACT: 575-640-5137			
WATER SYSTEM ID: NM3590607		WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF					
FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1)		FACILITY ID: 90607005		SAMPLING POINT Entry Point (SP906070051)			
FIELD DATA AND REMARKS	<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated	Residual (mg/l):	pH:	Conductivity (uS/cm):	Temperature (deg. C):		
Field remarks:							
SAMPLING DOCUMENTATION	<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite			Describe:			
	<input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other						
SAMPLE TYPE	<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water			Describe:			
	<input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid						
PRESERVATION	<input type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input type="checkbox"/> HCl added to pH <= 2 <input type="checkbox"/> HNO3 added to pH <= 2 <input type="checkbox"/> H2SO4 added to pH <= 2			Describe:			
	<input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input type="checkbox"/> Other						
	<input type="checkbox"/> C6H8O6 acid added <input type="checkbox"/> Acidified at Lab <input checked="" type="checkbox"/> Na2S2O3						
Analysis Requested:	SOC1: EDB, DCBP, 123TCP (EPA 504.1); Glyphosate (EPA 547); Pesticide/PCB (EPA 505)						
Additional Analytical Requests:							
CHAIN OF CUSTODY							
MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES							
Sample was Collected By:	Print Name	Signature	Sampler / Operator ID #	Date of Collection MM/DD/YY	Time of Collection HHMM (24 HR)		
	Richard Mirabal		08297	040219	0836		
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Placed in Care of:	Print Name of Carrier	Tracking Number / Bill of Lading		Date MM/DD/YY	Time HHMM (24 HR)		
	Federal Express	7469-0684-2024		4-2-19	10:50		
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Relinquished by:	Print Name of Relinquisher	Signature of Relinquisher	Date MM/DD/YY	Time HHMM (24 HR)			
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY							
Relinquished by:	Print Name of Receiver	Signature of Receiver	Date MM/DD/YY	Time HHMM (24 HR)			
	Yasmine Cardenas		04/03/19	0847			
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input checked="" type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Comments:							
Comments:							

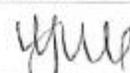
Request ID Here

ANALYTICAL REQUEST
Accession # Here

1904020837		One Form Per Sample		One Form Per Sample		190417400	
LAB USE >>> ONLY	DATE <<< TIME STAMP	SAMPLE TEMPERATURE (deg C): 2.3°C		Field preservation confirmed			
SUBMITTER CODE (3-digit):		LAB REMARKS:		Sample Priority (If 1 or 2 call lab):	<input type="checkbox"/> Preserved to pH < 2 at Lab	Date/Initial:	
<input type="radio"/> 55000 (DWB-SDWA - fee-for-service)		<input type="radio"/> 55420 (DWB-non-reg. contaminants)		<input type="radio"/> 64000 (Individual client fee-for-service)	<input checked="" type="radio"/> OTHER 55001		
NMED AREA OFFICE: Las Cruces		SAMPLER NAME: Richard Mirabal		SAMPLE CONTACT: 575-640-5137			
WATER SYSTEM ID: NM3590607		WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF					
FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1)		FACILITY ID: 90607005		SAMPLING POINT Entry Point (SP906070051)			
FIELD DATA AND REMARKS	<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated	Residual (mg/l):	pH:	Conductivity (µS/cm):	Temperature (deg. C):		
Field remarks:							
SAMPLING DOCUMENTATION	<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite	Describe:					
	<input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other						
SAMPLE TYPE	<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water	Describe:					
	<input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid						
PRESERVATION	<input type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input type="checkbox"/> HCl added to pH <= 2 <input type="checkbox"/> HNO3 added to pH <= 2 <input type="checkbox"/> H2SO4 added to pH <= 2	Describe: C6H7K07					
	<input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input checked="" type="checkbox"/> Other						
	<input type="checkbox"/> C6H8O6 acid added <input type="checkbox"/> Acidified at Lab <input checked="" type="checkbox"/> Na2S2O3						
Analysis Requested:	SOC2: Carbamates (EPA 531.2)						
Additional Analytical Requests:							
CHAIN OF CUSTODY							
MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES							
Sample was Collected By:	Print Name	Signature	Sampler / Operator ID #	Date of Collection MM/DD/YY	Time of Collection HHMM (24 HR)		
	Richard Mirabal		08297	040219	0837		
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Placed in Care of:	Print Name of Carrier	Tracking Number / Bill of Lading		Date MM/DD/YY	Time HHMM (24 HR)		
	Federal Express	7469-0684-2024		4-2-19	10:50		
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Relinquished by:	Print Name of Relinquisher	Signature of Relinquisher	Date MM/DD/YY	Time HHMM (24 HR)			
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY							
Relinquished by:	Print Name of Receiver	Signature of Receiver	Date MM/DD/YY	Time HHMM (24 HR)			
	Yazmine Garduno		04/03/19	0847			
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Comments:							
Comments:							

Request ID Here

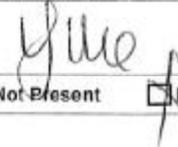
ANALYTICAL REQUEST
Accession # Here

1904020838		One Form Per Sample		One Form Per Sample		1904174-001	
LAB USE >>> ONLY	DATE <<< TIME STAMP	SAMPLE TEMPERATURE (deg C): 1.3°C		Field preservation confirmed			
SUBMITTER CODE (3-digit):		LAB REMARKS:		Sample Priority (If 1 or 2 call lab):		<input type="checkbox"/> Preserved to pH < 2 at Lab Date/Initial:	
<input type="radio"/> 55000 (DWB-SDWA - fee-for-service)		<input type="radio"/> 55420 (DWB-non-reg. contaminants)		<input type="radio"/> 64000 (Individual client fee-for-service)		<input checked="" type="radio"/> OTHER 55001	
NMED AREA OFFICE: Las Cruces		SAMPLER NAME: Richard Mirabal		SAMPLE CONTACT: 575-640-5137			
WATER SYSTEM ID: NM3590607		WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF					
FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1)		FACILITY ID: 90607005		SAMPLING POINT Entry Point (SP906070051)			
FIELD DATA AND REMARKS	<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated	Residual (mg/l):	pH:	Conductivity (uS/cm):	Temperature (deg. C):		
Field remarks:							
SAMPLING DOCUMENTATION	<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite			Describe:			
	<input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other						
SAMPLE TYPE	<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water			Describe:			
	<input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid						
PRESERVATION	<input type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input type="checkbox"/> HCl added to pH <= 2 <input type="checkbox"/> HNO3 added to pH <= 2 <input type="checkbox"/> H2SO4 added to pH <= 2			Describe: Na Sulfite			
	<input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input checked="" type="checkbox"/> Other						
	<input type="checkbox"/> C5H8O6 acid added <input type="checkbox"/> Acidified at Lab <input type="checkbox"/> Na2S2O3						
Analysis Requested:	SOC3: Organic Compounds, back-up (EPA 525.2)						
Additional Analytical Requests:							
CHAIN OF CUSTODY							
MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES							
Sample was Collected By:	Print Name	Signature	Sampler / Operator ID #	Date of Collection MM/DD/YY	Time of Collection HHMM (24 HR)		
	Richard Mirabal		08297	04/02/19	0838		
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Placed in Care of:	Print Name of Carrier	Tracking Number / Bill of Lading		Date MM/DD/YY	Time HHMM (24 HR)		
	Federal Express	7469-0684-2024		4-2-19	10:50		
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Relinquished by:	Print Name of Relinquisher	Signature of Relinquisher	Date MM/DD/YY	Time HHMM (24 HR)			
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY							
Relinquished by:	Print Name of Receiver	Signature of Receiver	Date MM/DD/YY	Time HHMM (24 HR)			
	Yasmine Garduno		04/03/19	0847			
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input checked="" type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Comments:							
Comments:							

Request ID Here

ANALYTICAL REQUEST

Accession # Here

1904020839		One Form Per Sample		One Form Per Sample		1904194-001	
LAB USE >>> ONLY		DATE <<< TIME STAMP		SAMPLE TEMPERATURE (deg C): 2.3°C		Field preservation confirmed	
SUBMITTER CODE (3-digit):				LAB REMARKS:			
<input type="radio"/> 55000 (DWB-SDWA - fee-for-service)		<input type="radio"/> 55420 (DWB-non-reg. contaminants)		<input type="radio"/> 64000 (Individual client fee-for-service)		<input checked="" type="radio"/> OTHER 55001	
NMED AREA OFFICE: Las Cruces		SAMPLER NAME: Richard Mirabal		SAMPLE CONTACT: 575-640-5137			
WATER SYSTEM ID: NM3590607		WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF					
FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1)				FACILITY ID: 90607005		SAMPLING POINT Entry Point (SP906070051)	
FIELD DATA AND REMARKS		<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated		Residual (mg/l):		pH:	
Field remarks:						Conductivity (uS/cm):	
						Temperature (deg. C):	
SAMPLING DOCUMENTATION		<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite		Describe:			
		<input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other					
SAMPLE TYPE		<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water		Describe:			
		<input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid					
PRESERVATION		<input type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input checked="" type="checkbox"/> HCl added to pH <= 2		<input type="checkbox"/> HNO3 added to pH <= 2		<input type="checkbox"/> H2SO4 added to pH <= 2	
		<input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input checked="" type="checkbox"/> Other		Describe: Na Sulfite			
		<input type="checkbox"/> C6H8O6 acid added <input type="checkbox"/> Acidified at Lab <input type="checkbox"/> Na2S2O3					
Analysis Requested:		SOC4: Organic Compounds (EPA 525.2)					
Additional Analytical Requests:							
CHAIN OF CUSTODY							
MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES							
Sample was Collected By:		Print Name		Signature		Sampler / Operator ID #	
		Richard Mirabal				08297	
						Date of Collection MM/DD/YY	
						04/02/19	
						Time of Collection HHMM (24 HR)	
						0839	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Placed in Care of:		Print Name of Carrier		Tracking Number / Bill of Lading		Date	
		Federal Express		7469-0684-2024		MM/DD/YY	
						4-2-19	
						Time HHMM (24 HR)	
						10:50	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Relinquished by:		Print Name of Relinquisher		Signature of Relinquisher		Date	
						MM/DD/YY	
						Time HHMM (24 HR)	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY							
Relinquished by:		Print Name of Receiver		Signature of Receiver		Date	
		Yasmine Garduno				MM/DD/YY	
						04/03/19	
						Time HHMM (24 HR)	
						0847	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Comments:							
Comments:							

Request ID Here

ANALYTICAL REQUEST

Accession # Here

1904120240		One Form Per Sample		One Form Per Sample		1904174-001	
LAB USE >>> ONLY		DATE <<< TIME STAMP		SAMPLE TEMPERATURE (deg C): 2.3°C		Field preservation confirmed	
SUBMITTER CODE (3-digit):				LAB REMARKS:			
<input type="radio"/> 55000 (DWB-SDWA - fee-for-service)		<input type="radio"/> 55420 (DWB non reg. contaminants)		<input type="radio"/> 54000 (Individual client fee-for-service)		<input checked="" type="radio"/> OTHER 55001	
NMED AREA OFFICE: Las Cruces		SAMPLER NAME: Richard Mirabal		SAMPLE CONTACT: 575-640-5137			
WATER SYSTEM ID: NM3590607		WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF					
FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1)			FACILITY ID: 90607005		SAMPLING POINT ENTRY POINT (SP906070051)		
FIELD DATA AND REMARKS		<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated		Residual (mg/l):		pH:	Conductivity (uS/cm):
							Temperature (deg. C):
Field remarks:							
SAMPLING DOCUMENTATION		<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite				Describe:	
		<input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other					
SAMPLE TYPE		<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water				Describe:	
		<input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid					
PRESERVATION		<input type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input type="checkbox"/> HCl added to pH <= 2 <input type="checkbox"/> HNO3 added to pH <= 2 <input type="checkbox"/> H2SO4 added to pH <= 2				Describe:	
		<input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input type="checkbox"/> Other					
		<input type="checkbox"/> C6H8O6 acid added <input type="checkbox"/> Acidified at Lab <input checked="" type="checkbox"/> Na2S2O3					
Analysis Requested:		SOC5: Herb Sub (EPA 515.3); Endothall (EPA 548.1)					
Additional Analytical Requests:							
CHAIN OF CUSTODY							
MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES							
Sample was Collected By:		Print Name		Signature		Sampler / Operator ID #	Date of Collection MM/DD/YY
		Richard Mirabal				08297	040219
							Time of Collection HHMM (24 HR)
							0840
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Placed in Care of:		Print Name of Carrier		Tracking Number / Bill of Lading		Date MM/DD/YY	Time HHMM (24 HR)
		Federal Express		7469-0684-2024		4-2-19	10:50
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Relinquished by:		Print Name of Relinquisher		Signature of Relinquisher		Date MM/DD/YY	Time HHMM (24 HR)
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY							
Relinquished by:		Print Name of Receiver		Signature of Receiver		Date MM/DD/YY	Time HHMM (24 HR)
		Yasmine Gardens				04/03/19	0847
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged							
Comments:							
Comments:							

Request ID Here

ANALYTICAL REQUEST
Accession # Here

1904020841	One Form Per Sample	One Form Per Sample	1904174-001
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LAB USE >>> ONLY	DATE <<< TIME STAMP	SAMPLE TEMPERATURE (deg C): 2.3 ^o	Field preservation confirmed
SUBMITTER CODE (3-digit):		Sample Priority (If 1 or 2 call lab):	<input type="checkbox"/> Preserved to pH < 2 at Lab Date/Initial:

LAB REMARKS:	
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<input type="radio"/> 55000 (DWB-SDWA - fee-for-service)	<input type="radio"/> 55420 (DWB-non reg. contaminants)	<input type="radio"/> 64000 (Individual client fee-for-service)	<input checked="" type="radio"/> OTHER 55001
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NMED AREA OFFICE: Las Cruces	SAMPLER NAME: Richard Mirabal	SAMPLE CONTACT: 575-640-5137
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WATER SYSTEM ID: NM3590607	WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF
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FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1)	FACILITY ID: 90607005	SAMPLING POINT ENTRY POINT (SP906070051)
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FIELD DATA AND REMARKS	<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated	Residual (mg/l):	pH:	Conductivity (uS/cm):	Temperature (deg. C):
Field remarks:					

SAMPLING DOCUMENTATION	<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite	Describe:
	<input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other	

SAMPLE TYPE	<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water	Describe:
	<input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid	

PRESERVATION	<input type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input type="checkbox"/> HCl added to pH <= 2 <input type="checkbox"/> HNO3 added to pH <= 2 <input type="checkbox"/> H2SO4 added to pH <= 2	Describe:
	<input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input type="checkbox"/> Other	
	<input type="checkbox"/> C6H8O6 acid added <input type="checkbox"/> Acidified at Lab <input checked="" type="checkbox"/> Na2S2O3	

Analysis Requested:	SOC6: Diquat (EPA 549.2)
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Additional Analytical Requests:	
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CHAIN OF CUSTODY

MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES

Sample was Collected By:	Print Name	Signature	Sampler / Operator ID #	Date of Collection MM/DD/YY	Time of Collection HHMM (24 HR)
	Richard Mirabal	<i>Richard Mirabal</i>	08297	04/02/19	0841

Sample Evidentiary Seals -	<input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged
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Placed in Care of:	Print Name of Carrier	Tracking Number / Bill of Lading	Date MM/DD/YY	Time HHMM (24 HR)
	Federal Express	7469-0684-2024	4-2-19	10:50

Sample Evidentiary Seals -	<input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged
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Relinquished by:	Print Name of Relinquisher	Signature of Relinquisher	Date MM/DD/YY	Time HHMM (24 HR)

Sample Evidentiary Seals -	<input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged
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TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY

Relinquished by:	Print Name of Receiver	Signature of Receiver	Date MM/DD/YY	Time HHMM (24 HR)
	Yasmine Garduño	<i>Yasmine Garduño</i>	04/03/19	0847

Sample Evidentiary Seals -	<input type="checkbox"/> Not Present <input checked="" type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged
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Comments:	
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Comments:	
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Request ID Here

ANALYTICAL REQUEST
Accession # Here

1904020831		One Form Per Sample	One Form Per Sample		1904174-001
LAB USE >>> ONLY	DATE <<< TIME STAMP	SAMPLE TEMPERATURE (deg C): 2.30		Field preservation confirmed	
SUBMITTER CODE (3-digit):		LAB REMARKS:			
<input type="radio"/> 55000 (DWB-SDWA - fee-for-service)		<input type="radio"/> 55420 (DWB-non-reg. contaminants)		<input type="radio"/> 64000 (Individual client fee-for-service) <input checked="" type="radio"/> OTHER 55001	
NMED AREA OFFICE: Las Cruces		SAMPLER NAME: Richard Mirabal		SAMPLE CONTACT: 575-840-5137	
WATER SYSTEM ID: NM3590607		WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF			
FACILITY/LOCATION: Treatment Plant #1 (Booster #1)		FACILITY ID: 90607005		SAMPLING POINT Entry Point (SP906070051)	
FIELD DATA AND REMARKS	<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated	Residual (mg/l):	pH:	Conductivity (uS/cm):	Temperature (deg. C):
Field remarks:					
SAMPLING DOCUMENTATION	<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite <input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other				Describe:
SAMPLE TYPE	<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water <input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid				Describe:
PRESERVATION	<input checked="" type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input type="checkbox"/> HCl added to pH <= 2 <input type="checkbox"/> HNO3 added to pH <= 2 <input type="checkbox"/> H2SO4 added to pH <= 2 <input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input type="checkbox"/> Other <input type="checkbox"/> C6H8O6 acid added <input type="checkbox"/> Acidified at Lab <input type="checkbox"/> Na2S2O3				Describe:
Analysis Requested:	Color (SM2120 B); Odor (SM2150 B)				
Additional Analytical Requests:					

CHAIN OF CUSTODY

MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES

Sample was Collected By:	Print Name Richard Mirabal	Signature 	Sampler / Operator ID # 08297	Date of Collection MM/DD/YY 04/02/19	Time of Collection HHMM (24 HR) 0831
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Placed in Care of:	Print Name of Carrier Federal Express	Tracking Number / Bill of Lading 7469-0684-2024		Date MM/DD/YY 4-2-19	Time HHMM (24 HR) 10:50
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Relinquished by:	Print Name of Relinquisher	Signature of Relinquisher	Date MM/DD/YY	Time HHMM (24 HR)	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					

TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY

Relinquished by:	Print Name of Receiver Yasmine Garduno	Signature of Receiver 	Date MM/DD/YY 04/03/19	Time HHMM (24 HR) 0847	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input checked="" type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Comments:					
Comments:					

Request ID Here

ANALYTICAL REQUEST
Accession # Here

1904020833 One Form Per Sample One Form Per Sample 1904174-001

LAB USE >>> ONLY DATE <<< TIME STAMP SAMPLE TEMPERATURE (deg C): 2.3°C Field preservation confirmed
Sample Priority (If 1 or 2 call lab): Preserved to pH < 2 at Lab Date/Initial:

SUBMITTER CODE (3-digit): LAB REMARKS:

55000 (DWB-SDWA - fee-for-service) 55420 (DWB-non-reg. contaminants) 64000 (Individual client fee-for-service) OTHER 55001

NMED AREA OFFICE: Las Cruces SAMPLER NAME: Richard Mirabal SAMPLE CONTACT: 575-640-5137

WATER SYSTEM ID: NM3590607 WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF

FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1) FACILITY ID: 90607005 SAMPLING POINT Entry Point (SP906070051)

FIELD DATA AND REMARKS Non-chlorinated Chlorinated Residual (mg/l): pH: Conductivity (uS/cm): Temperature (deg. C):

Field remarks:

SAMPLING DOCUMENTATION NMED monitoring Compliance Confirmation Composite Describe:
 Split with facility Grab sample Non-compliance Other

SAMPLE TYPE Non-filtered Water Filtered water Describe:
 Raw water Finished water Other air/liquid/solid

PRESERVATION None Stored Shipped at < 4 C HCl added to pH <= 2 HNO3 added to pH <= 2 H2SO4 added to pH <= 2
 Lab to acidify NaOH added to pH >= 12 Other Describe:
 C6H8O6 acid added Acidified at Lab Na2S2O3

Analysis Requested: Total Cyanide (EPA 335.4)

Additional Analytical Requests:

CHAIN OF CUSTODY

MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES

Sample was Collected By: Print Name Signature Sampler / Operator ID # Date of Collection MM/DD/YY Time of Collection HHMM (24 HR)
Richard Mirabal [Signature] 08297 040219 0833

Sample Evidentiary Seals - Not Present Present & Intact Present & Damaged

Placed in Care of: Print Name of Carrier Tracking Number / Bill of Lading Date MM/DD/YY Time HHMM (24 HR)
Federal Express 7469-0684.2024 4-2-19 10:50

Sample Evidentiary Seals - Not Present Present & Intact Present & Damaged

Relinquished by: Print Name of Relinquisher Signature of Relinquisher Date MM/DD/YY Time HHMM (24 HR)

Sample Evidentiary Seals - Not Present Present & Intact Present & Damaged

TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY

Relinquished by: Print Name of Receiver Signature of Receiver Date MM/DD/YY Time HHMM (24 HR)
Yasmine Garduño [Signature] 04/03/19 0847

Sample Evidentiary Seals - Not Present Present & Intact Present & Damaged

Comments:

Comments:

1903290834
Request ID Here

ANALYTICAL REQUEST
Accession # Here

One Form Per Sample *Bub 01/19*
One Form Per Sample 1904174-002

LAB USE >>> ONLY	DATE <<< TIME STAMP	SAMPLE TEMPERATURE (deg C): 23°C	Field preservation confirmed
SUBMITTER CODE (3-digit):		Sample Priority (If 1 or 2 call lab):	<input type="checkbox"/> Preserved to pH < 2 at Lab Date/Initial:

LAB REMARKS:	55000 (DWB-SDWA - fee-for-service) 55420 (DWB-non-reg. contaminants) 64000 (Individual client fee-for-service) <input checked="" type="radio"/> OTHER 55001	
NMED AREA OFFICE: Las Cruces	SAMPLER NAME: Richard Mirabal	SAMPLE CONTACT: 575-640-5137
WATER SYSTEM ID: NM3590807	WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF	

FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1)	FACILITY ID: 90607005	SAMPLING POINT ENTRY POINT (SP906070051)
FIELD DATA AND REMARKS	<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated Residual (mg/l): pH:	Conductivity (uS/cm): Temperature (deg. C):
Field remarks:		

SAMPLING DOCUMENTATION	<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite	Describe:
	<input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other	

SAMPLE TYPE	<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water	Describe:
	<input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid	

PRESERVATION	<input type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input type="checkbox"/> HCl added to pH <= 2 <input checked="" type="checkbox"/> HNO3 added to pH <= 2 <input type="checkbox"/> H2SO4 added to pH <= 2	Describe:
	<input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input type="checkbox"/> Other	
	<input type="checkbox"/> C6H8O6 acid added <input type="checkbox"/> Acidified at Lab <input type="checkbox"/> Na2S2O3	

Analysis Requested: Hg (EPA 245.1); Sb, As, Cu, Se, Ti, U (EPA 200.8); Al, Ba, Cd, Cr, Be, Fe, Mn, Ag, Zn (EPA 200.7)

Additional Analytical Requests:

CHAIN OF CUSTODY
MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES

Sample was Collected By:	Print Name: Richard Mirabal	Signature: <i>Richard Mirabal</i>	Sampler / Operator ID #: 08297	Date of Collection: <i>032918</i> MM/DD/YY	Time of Collection: <i>0334</i> HH:MM (24 HR)
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Sample Evidentiary Seals - Not Present Present & Intact Present & Damaged

Placed in Care of:	Print Name of Carrier: Federal Express	Tracking Number / Bill of Lading: 7469-0684-2024	Date: <i>4-2-19</i> MM/DD/YY	Time: <i>10:50</i> HH:MM (24 HR)
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Sample Evidentiary Seals - Not Present Present & Intact Present & Damaged

Relinquished by:	Print Name of Relinquisher:	Signature of Relinquisher:	Date: MM/DD/YY	Time: HH:MM (24 HR)
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Sample Evidentiary Seals - Not Present Present & Intact Present & Damaged

Relinquished by:	Print Name of Receiver: Yasmine Garduno	Signature of Receiver: <i>Yasmine Garduno</i>	Date: <i>04/03/19</i> MM/DD/YY	Time: <i>0847</i> HH:MM (24 HR)
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Sample Evidentiary Seals - Not Present Present & Intact Present & Damaged

Comments:

Comments:

Request ID Here

1908189 0833 1903290830
1908290832
1908190833

ANALYTICAL REQUEST

Accession # Here

One Form
Per Sample

1904174-002

LAB USE >>> ONLY	DATE <<< TIME STAMP	SAMPLE TEMPERATURE (deg C): 2.3°C	Field preservation confirmed
SUBMITTER CODE (3-digit):		LAB REMARKS:	
<input type="radio"/> 55000 (DWB-SDWA - fee-for-service)		<input type="radio"/> 55420 (DWB-non-reg. contaminants)	<input type="radio"/> 54000 (Individual client fee-for-service) <input checked="" type="radio"/> OTHER 55001
NMED AREA OFFICE: Las Cruces		SAMPLER NAME: Richard Mirabal	SAMPLE CONTACT: 575-640-5137
WATER SYSTEM ID: NM3590607		WATER SYSTEM NAME: NASAJSC WHITE SANDS TEST FACILITY - FF	
FACILITY/LOCATION: TREATMENT PLANT #1 (Booster #1)		FACILITY ID: 90607005	SAMPLING POINT Entry Point (SP906070051)
FIELD DATA AND REMARKS	<input type="checkbox"/> Non-chlorinated <input checked="" type="checkbox"/> Chlorinated	Residual (mg/l):	pH: Conductivity (uS/cm): Temperature (deg. C):
Field remarks:			
SAMPLING DOCUMENTATION	<input type="checkbox"/> NMED monitoring <input checked="" type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input type="checkbox"/> Composite		Describe:
	<input type="checkbox"/> Split with facility <input checked="" type="checkbox"/> Grab sample <input type="checkbox"/> Non-compliance <input type="checkbox"/> Other		
SAMPLE TYPE	<input type="checkbox"/> Non-filtered Water <input type="checkbox"/> Filtered water		Describe:
	<input type="checkbox"/> Raw water <input checked="" type="checkbox"/> Finished water <input type="checkbox"/> Other air/liquid/solid		
PRESERVATION	<input type="checkbox"/> None <input type="checkbox"/> Stored Shipped at < 4 C <input type="checkbox"/> HCl added to pH <= 2 <input checked="" type="checkbox"/> HNO3 added to pH <= 2 <input type="checkbox"/> H2SO4 added to pH <= 2		Describe:
	<input type="checkbox"/> Lab to acidify <input type="checkbox"/> NaOH added to pH >= 12 <input type="checkbox"/> Other		
	<input type="checkbox"/> C6H8O6 acid added <input type="checkbox"/> Acidified at Lab <input type="checkbox"/> Na2S2O3		
Analysis Requested:	Radionuclides: Radium-226 (EPA 903.1); Radium-228 (EPA 904.0); Gross Alpha/Beta (900.0)		
Additional Analytical Requests:			

CHAIN OF CUSTODY

MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES

Sample was Collected By:	Print Name Richard Mirabal	Signature 	Sampler / Operator ID # 08297	Date of Collection MM/DD/YY 03/29/19	Time of Collection HHMM (24 HR) 0830 0833 0831 0833
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Placed in Care of:	Print Name of Carrier Federal Express	Tracking Number / Bill of Lading 7469-0684-2024	Date MM/DD/YY 4-2-19	Time HHMM (24 HR) 10:50	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Relinquished by:	Print Name of Relinquisher	Signature of Relinquisher	Date MM/DD/YY	Time HHMM (24 HR)	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY					
Relinquished by:	Print Name of Receiver Yazmin-Chardans	Signature of Receiver 	Date MM/DD/YY 04/03/19	Time HHMM (24 HR) 0847	
Sample Evidentiary Seals - <input type="checkbox"/> Not Present <input checked="" type="checkbox"/> Present & Intact <input type="checkbox"/> Present & Damaged					
Comments:					
Comments:					

Date 2 APR 19

WSTF CHAIN OF CUSTODY RECORD

Laboratory / PO # 18EC061				Analysis Requirements							Special Instructions				
Return Address for Analytical Reports: Brian Barrick, brian.l.barrick@nasa.gov NASA/WSTF Environmental Department 12600 NASA Road Las Cruces, NM 88012 Attn: <input checked="" type="checkbox"/> Brian Barrick (575) 524-5468				Mercury: EPA Method 245.1 Sb, As, Cu, Se, Ti, U: EPA Method 200.8 Al, Ba, Cd, Cr, Be, Fe, Mn, Ag, Zn: EPA Method 200.7 Q1 Radionuclides: EPA Methods 903.1 (Radium-226), 900.0 (Gross Alpha/Beta), 904.0 HEAL Trip Blank Included							12600 NASA Road; Bldg. 120 Las Cruces, NM 88012 Attn: JR Hennessey				
Sample No.	Sample Location	# of Containers	Sample type	Mercury: EPA Method 245.1	Sb, As, Cu, Se, Ti, U: EPA Method 200.8	Al, Ba, Cd, Cr, Be, Fe, Mn, Ag, Zn: EPA Method 200.7	Q1 Radionuclides: EPA Methods 903.1 (Radium-226), 900.0 (Gross Alpha/Beta), 904.0	HEAL Trip Blank Included							
1903290834	Treatment Plant #1 (Facility ID 90607005)	1	A	X	X	X						250-mL HDPE HNO ₃ <i>1909167001</i>			
11 0830	Treatment Plant #1 (Facility ID 90607005)	1	A				X					1-L HDPE HNO ₃ <i>202</i>			
" 0831	Treatment Plant #1 (Facility ID 90607005)	1	A				X					1-L HDPE HNO ₃ <i>203</i>			
" 0832	Treatment Plant #1 (Facility ID 90607005)	1	A				X					1-L HDPE HNO ₃ <i>204</i>			
" 0833	Treatment Plant #1 (Facility ID 90607005)	1	A				X					1-L HDPE HNO ₃ <i>205</i>			
1903290730	Treatment Plant #1 (Facility ID 90607005)	1	A					X				HEAL Trip Blank Included <i>206</i>			
Relinquished By:				Date/Time:				Accepted By:				Date/Time:			
<i>R. BARRICK</i>				<i>2 APR 19 / 1005</i>				<i>J. Hennessey</i>				<i>4-2-19 10:07</i>			
								<i>FED EX</i>				<i>4/3/19 8:47</i>			

Refer to NASA DW COC's
 Comments
 2.3°C
04/03/19
AS

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Date 2 APR 19

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Sample No.	Sample Location	# of Containers	Sample type							Comments	
1904020830	Treatment Plant #1 (Facility ID 90607005)	1	A	X						Scaled 120-mL Na ₂ S ₂ O ₃ 19041107-007	
" 0831	Treatment Plant #1 (Facility ID 90607005)	1	A		X	X				1-L glass amber unpreserved ("Color/Odor") 208	
" 0832	Treatment Plant #1 (Facility ID 90607005)	1	A				X			125-mL HDP H ₂ SO ₄ , back-up ("nitrate nitrite") 209	
" 0833	Treatment Plant #1 (Facility ID 90607005)	1	A					X		500-mL plastic amber NaOH ("Total Cyanide") 210	
" 0834	Treatment Plant #1 (Facility ID 90607005)	1	A						X	3, 40-mL ascorbic acid VOAs ("VOA") 211	
" "	Treatment Plant #1 (Facility ID 90607005)	1	A						X	Sampling: Fill 1/2 vial → Add 7 drops HCL → Fill w/ no bubbles or -0.1 headspace → Keep cool	
" "	Treatment Plant #1 (Facility ID 90607005)	1	A						X		
" 0835	Treatment Plant #1 (Facility ID 90607005)	1	A						X	HEAL Trip Blank Included A-190405119 2012	
Relinquished By:		Date/Time:		Accepted By:			Date/Time:				
K MIRABIL		2 APR 19 / 1005		J. Yule			4-2-19 10:07				
				FED EX			4/3/19 8:47				

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Date 2 APR 19

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Sample No.	Sample Location	# of Containers	Sample type								Comments	
1904020836	Treatment Plant #1 (Facility ID 90607005)	1	A	X	X	X					40-mL Na ₂ S ₂ O ₃ clear VOAs ("SOC1") 1904167013	
" "	Treatment Plant #1 (Facility ID 90607005)	1	A	X	X	X					40-mL Na ₂ S ₂ O ₃ clear VOAs ("SOC1") 213	
" "	Treatment Plant #1 (Facility ID 90607005)	1	A	X	X	X					40-mL Na ₂ S ₂ O ₃ clear VOAs ("SOC1") 213	
" "	Treatment Plant #1 (Facility ID 90607005)	1	A	X	X	X					40-mL Na ₂ S ₂ O ₃ clear VOAs ("SOC1") -013	
" 0837	Treatment Plant #1 (Facility ID 90607005)	1	A				X				40-mL amber C ₆ H ₇ KO ₇ + Na ₂ S ₂ O ₃ VOAs ("SOC2") 214	
" "	Treatment Plant #1 (Facility ID 90607005)	1	A				X				40-mL amber C ₆ H ₇ KO ₇ + Na ₂ S ₂ O ₃ VOAs ("SOC2") 214	
" 0838	Treatment Plant #1 (Facility ID 90607005)	1	A					X			1-L Na Sulfite glass amber ("SOC3") 215	
" 0839	Treatment Plant #1 (Facility ID 90607005)	1	A						X		1-L Na Sulfite glass amber (w/ HCl vial) -015 <u>Sampling:</u> Fill amber halfway → add HCl → Fill Completely ("SOC4")	
Relinquished By:		Date/Time:		Accepted By:				Date/Time:				
K. MIRABAL		2 APR 19 / 1005		JL yml				4-2-19 11:0 4/3/19 8:47				
				FED EX								

