ARCADIS Design & Consultancy for natural and built assets

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Subject:
GLOBALFOUNDRIES B322 Renovation Project
Closure Certification for SWMUs in Building 322, Hopewell Junction, NY
Permit Module II of IBM's 6NYCRR Part 373
Hazardous Waste Management Permit

ENVIRONMENT

Date:
April 11, 2019

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Our ref:
B000130.0005

Dear Ms. LaClair:

This Certification Letter has been prepared by Arcadis of New York, Inc. (Arcadis) to document the closure of solid waste management units (SWMUs) as part of the partial demolition project for Building 322 at the GLOBALFOUNDRIES US2 LLC Fab 10 Facility, Hopewell Junction, New York. The SWMU closure work was performed pursuant to the *Plan for Closure of SWMUs in Building 322, Hopewell Junction, NY* prepared by Arcadis (April 20, 2018) and approved by New York State Department of Environmental Conservation (NYSDEC) on May 9, 2018.

The SWMUs closed during the project are in the following categories:

- Above-slab waterwater piping within B322.
- Container waste loading/unloading area.
- Tank 208 – Spill Tank (solvent waste-mixed).

These SWMUs were identified by IBM in accordance with Permit Module II of IBM's 6NYCRR Part 373 Hazardous Waste Management Permit.

On July 1, 2015, the IBM East Fishkill facility was acquired by GLOBALFOUNDRIES US 2 LLC (GLOBALFOUNDRIES). The SWMU closure and documentation activities summarized in this Certification Letter were implemented by GLOBALFOUNDRIES with the assistance of IBM. Both corporations are referenced in this letter report.

The SWMUs associated with Building 322 (Figure 1) were sorted from IBM's SWMU database and are listed in Table 1 as they appear in IBM's Part 373 Permit Module. Table 1 provides the entire list of active, closed, inactive and removed SWMUs within or associated with Building 322 at the onset of the project. This Certification Report applies to five SWMUs that are no longer required for operation of building systems, as noted "Yes" on Table 1 under the heading "Scheduled for Closure/Removal".

The project's Demolition Plan required removal or closure of all SWMUs or SMWU components within the limits of the partial building demolition. Part of Building 322 was walled off and retained in an active condition, south of Column Line 22. North of Column Line 22, demolition removed building structures down to the slab.

Figure 2 provides the general location of the SWMUs included in this Certification Report. Because the project was conducted to demolish only part of B322, this Certification Report only applies to those SMWU components that were removed as part of the demolition project and observed by Arcadis.

Specifically, the SWMUs addressed under this project, as updated in Table 1 are:

- Unit ID # 208 – Tank 208.
- Unit ID # B322-FL – Fluoride/Heavy Metals Wastewater Piping.
- Unit B322-IW – Industrial Wastewater Transfer Piping.
- Unit B322-SO – Solvent Waste Transfer Piping.
- CW L/UL322 – Container Waste Loading/Unloading Area.

The extent of SWMU piping removal north of Column Line 22 ended at the eastern foundation wall within B322 where all removed fluoride/heavy metals, industrial (acid) waste and solvent waste transfer pipes were cut and capped immediately before they exit the foundation. The SWMU piping south of the Column Line 22 separation wall remain in place, cut and capped south of the separation wall.

The SWMU closure activities implemented in support of the project included:

- Conducting a reconnaissance of the SWMUs included in Table 1 to confirm the location and extent of SWMUs to be closed or partially closed, document the existing conditions of the SWMUs, and formulate the final decontamination and/or disposition approach for each SWMU.
- Verifying decontamination and closure activities for the SWMUs.
- Preparing this Certification Report to document that the SWMUs have been closed.

These activities are summarized below.

SWMU RECONNAISSANCE

The initial step of the closure approach consisted of field reconnaissance of the listed active SWMUs within the project area to document the existing conditions of the SWMUs and formulate the final decontamination and/or disposition approach for each SWMU. Reconnaissance revealed the following SWMU locations, descriptions and configurations within the project area:

- Waste transfer piping SWMUs: The operating process areas within B322 had been established on raised floors, typically 3 feet above a concrete slab. The slab was protected with chemical resistant coating or sealants. All SWMU transfer piping ran beneath the raised floor but above the concrete slab in gravity drain networks. Process drain laterals, typically 2-inch diameter piping, ran from the respective operations through the space below the raised floor to 4-inch diameter main drains that ran within seven poly-lined or epoxy-coated concrete trenches built into the slab. The waste transfer piping SMWUs within the B322 are described as follows:
  - B322-FL: Fluoride/Heavy Metals Wastewater Transfer Piping; was present throughout B322, as Schedule 80 gravity drain piping running below the raised floor, but above the slab and/or trench. These pipes were labelled “Fluoride” and conveyed wastewater that was treated in the centralized fluoride/heavy metals wastewater treatment works elsewhere on the property.
  - B322-IW: Industrial Wastewater Transfer Piping; was present throughout B322, as Schedule 80 gravity drain piping running below the raised floor, but above the slab and/or trench. These pipes were labelled “Acid” or “Industrial” and conveyed wastewater that was treated in the centralized industrial wastewater treatment works elsewhere on the property.
  - B322-SO: Solvent Waste Transfer Piping; was present throughout B322, as carbon steel gravity drain piping running below the raised floor, but above the slab and/or trench. These pipes were labelled by the respective solvent waste streams as follows:
    - NBA (n-butyl acetate) Drain.
    - AZ Strip Drain (mixture of propylene glycol, NMP and tetramethyl ammonium hydroxide).
    - NBA/AZ Strip Drain (combined drain).
    - IPA (isopropyl alcohol) Drain.
    - NMP (n-methyl-2-pyrrolidone) Drain.
    - Mixed Solvent Waste Drain.
- Tank 208: Solvent Waste-Mixed (Spill Tank). This tank was situated in a concrete vault that served as a loading dock outside the solvent room (solvent product storage and dispensing room). Tank 208 was taken out of service, decontaminated and closed in place in 2010. The solvent room is not a SWMU. The closure report was available for Arcadis’ review and is discussed below (see SWMU Closure Activities in this report).
- CW L/UL322: Container Waste Loading/Unloading Area. This was an enclosed loading/unloading dock within B322. The floor was concrete slab with chemical resistant coating. No containers or waste were present during the initial inspection.

As stated in the SWMU Closure Plan, the GLOBALFOUNDRIES Facilities Engineering Team is not aware of any previous environmental releases associated with any of the specific SWMU components closed under this project.

SWMU CLOSURE ACTIVITIES

Closure activities, consisting of decontamination and/or removal of SWMU components, were implemented by a qualified environmental contractor, Highground Industrial, LLC (Highground), and documented by Arcadis. The sources of hazardous waste (process equipment, waste containers, SWMU

piping above the floor) managed within the SWMUs had been removed prior to the commencement of this project. The closure/removal actions in the current project were conducted concurrent with demolition in a sequence that typically removed raised floors and supporting framing to access the SWMU piping, followed by removal of the piping for decontamination to allow for non-hazardous disposal or removal without decontamination for direct placement in containers for management/disposal as hazardous waste.

Arcadis inspected the project SWMUs prior to commencement of demolition. During demolition, Arcadis observed completed work as each area was cleared of SWMU piping. Highground removed, sized and decontaminated all PVC SWMU piping for non-hazardous disposal and Arcadis inspected and field-tested all decontaminated piping to verify that the decontamination criteria specified in the SWMU Closure Plan were met (see Third Party Observation and Testing). Decontamination was performed with water rinsed through pipe sections up to 5-6 ft in length to allow for representative inspection and testing. Rinsing was supplemented with rags pushed or pulled through pipe sections where necessary to remove visible residue.

The project achieved the following:

- All SWMUs, or their components, within the project area were removed during the demolition sequencing.
- Unit ID Unit ID # 208: Tank 208, decontaminated in place during 2010, was removed during the project.
- The SWMU transfer piping mains exited B322 through the east side foundation to underground waste transfer piping. The mains at the foundation wall were accessible beneath gantry doors in the east side hallway floor. Because the underground piping was not part of the project, the SWMU piping mains were cut and capped inside B322 at the foundation walls.
- SWMU transfer pipes that originated south of column line 22 were cut and capped within 10 feet of the new separation wall, and currently remain in place.
- The waste container loading/unloading area (enclosed dock), was inspected and cleaned to a debris-free surface condition. The surface was tested with pH test strips to verify that it met the neutral criteria for the project (pH range of 5-8).
- Waste transfer piping was emptied of fluids prior to demolition. Residual water in the industrial waste piping, from janitor sinks and air handling and chiller condensate drains, was collected by Highground and transferred to the industrial waste drains system south of Column Line 22.

The decontamination and/or verification of SWMU closure and removal is summarized in the sections below.

Tank 208 Closure and Removal

The decontamination report for Tank 208 (William F. Cosulich Associates, P.C., 2010), included as Attachment A to this letter, was reviewed by Arcadis. Their report states that Tank 208 was a 1,300-gallon stainless steel spill tank for less than 90-day accumulation of floor spills from a mixed solvent container room. In 2010, the tank was emptied of mud/rust-like material and decontaminated with detergent and water. Decontamination was verified by rinsate sampling. The rinsate was analyzed by EnviroTest

Laboratories, Inc. for volatile organic compounds (VOCs), using NYSDEC ASP Method 8260B, for comparison to Class GA Groundwater Standards. No VOCs were detected in the rinsate sample or the duplicate rinsate sample.

The findings reported by William F. Cosulich Associates, P.C. (2010) meet the rinsate-based decontamination criteria (New York State Class GA Groundwater Standards) in Arcadis' SWMU closure plan for B322. The tank remained within the stainless steel lined concrete vault until this demolition project was initiated. Upon initial inspection prior to demolition, the tank and vault contained rain water which had likely entered through the vault cover (vented manhole cover). The water was pumped out and transferred to the industrial waste treatment facility elsewhere onsite prior to tank removal. The Arcadis observer saw no visible sheens or visible non-aqueous phase product in the vault before and after the tank was removed. In November 2018, Highground Industrial removed the previously decontaminated SWMU Tank 208. The tank was observed by Arcadis to be corroded but intact, with the topside manway and flanged outlet cap previously removed and influent pipe previously disconnected. The stainless-steel vault liner was corroded but the vault had held rain water when inspected in 2018. Prior to tank removal, rain water in the tank vault was drained for treatment at the onsite WWTP. Underground drain piping running back to the solvent room was not evaluated, capped or removed during this project.

The vault was to be demolished by Highground and filled to grade with structural fill material after Arcadis completed their observations. According to Highground, the removed tank was shipped offsite with other scrap metal for recycling.

B322-FL: Fluoride/Heavy Metals Wastewater Transfer Piping Decontamination and Removal

All fluoride/heavy metals wastewater transfer piping was labeled "Fluoride" and consisted of solvent/welded Schedule 80 PVC drain pipes. Test cuts were made in a 4-inch drain prior to demolition to assess practicality of decontamination. The test cuts revealed a thin film on the bottom quarter of the fluoride drain pipes when viewed in cross section, which readily wiped off on a dry rag. The selected method of decontamination was to saw-cut the fluoride piping into manageable sections (up to 6 feet in length), place each section into a trough of facility water, push a brush through the pipe to remove residue and rinse with treated facility water available from the building water sources. Treated facility water is a clean non-potable water supply to sinks, lavatories and general facility hose spigots.

Each rinsed section of fluoride/heavy metal pipe was inspected to confirm decontamination to the clean debris surface criterion defined in the Closure Plan. Because the source of fluoride in the former semi-conductor processes was hydrofluoric acid (a corrosive fluid), representative pipe ends were also field tested for pH with Hydrion® pH test strips to confirm that the interior pipe surface was within a neutral range of pH 5 to 8. Based on absence of visible residue (clean debris surface criterion) and neutral pH verification, the decontaminated piping was released for disposal as non-hazardous waste (See Third Party Observation and Testing).

B322-IW: Industrial Wastewater Transfer Piping Decontamination and Removal

The construction of the industrial waste drain system was identical to the fluoride/heavy metal drain system described above. Test cuts in the industrial drain system exhibited no visible residue when viewed in cross section. Removal and decontamination of the industrial waste drains utilized the same process that was set up for the fluoride drains. Because the regulated industrial wastewater had contained a

variety of acids other than fluoride-containing acids, verification of decontamination was the same as described above for the fluoride drains sections. Based on absence of visible residue (clean debris surface criterion) and neutral pH verification, the decontaminated piping was released for disposal as non-hazardous waste (See Third Party Observation and Testing).

B322-SO: Solvent Wastewater Transfer Piping Removal

All solvent waste drains were constructed of carbon steel pipe, with welded seams. Threaded fittings were limited to connection points for process equipment, all of which were sealed with threaded steel caps. Test cuts in the solvent drain system exhibited very little visible residue in the AZ strip, IPA and NMP drains when viewed in cross section. However, the mixed solvent drain contained significant dry residue. GLOBALFOUNDRIES considered the option to decontaminate the solvent drains but elected to dispose of all solvent waste piping removed during the project as a hazardous waste. Arcadis' observation of solvent pipe removal confirmed that this system was removed and segregated into lined hazardous waste rolloffs to be shipped offsite for disposal (See Third Party Observation and Testing).

CW L/UL322 – Container Waste Loading/Unloading Area

There were no containers or other wastes present in the Container Waste Loading/Unloading Area when the project started in 2018. Highground decontaminated the floor with broom and HEPA vacuum to facilitate inspection. Walls did not exhibit visible residue. Arcadis performed visual inspection and pH testing and to confirm that the floor met the clean debris surface criterion and the surface met the pH neutral range criteria (See Third Party Observation and Testing).

WASTE DISPOSAL

All wastes generated by SWMU closure and removal activities were managed by Highground. Decontaminated non-metal components of the SWMUs (PVC piping) were cut up and containerized for offsite disposal as a non-hazardous waste. Tank 208 was combined with other scrap metal from the B322 demolition for offsite recycling. Hazardous wastes generated from partial removal of Unit B322-SO – Solvent Waste Transfer Piping were managed as F003 hazardous waste based on generator classification by GLOBALFOUNDRIES. A summary of the waste management facilities receiving each waste stream, as well as the transportation vendors, is provided in Table 2. Disposal records are retained by GLOBALFOUNDRIES.

THIRD PARTY OBSERVATION AND TESTING

Arcadis provided third party observation and testing to verify that the SWMU closure activities were completed as planned, to document exceptions, if any, and provide this closure/removal Certification Report to GLOBALFOUNDRIES.

Arcadis utilized the following methods to verify closure and removal of B322 SWMUs:

- Arcadis inspected the SWMU and SWMU components closed or removed during the project to verify that all waste containers associated with the SWMUs in the project area were removed and that waste piping systems were removed, processed and disposed in accordance with the B322 SWMU Closure Plan.

- For fluoride/heavy metals and industrial (acid) waste transfer lines, Arcadis conducted visual inspections and field testing for pH to verify that the following criteria were met in order to dispose of the materials as non-hazardous waste:
    - For SWMUs that handled only D002 hazardous waste (characteristic of corrosivity), which is limited to SWMU B322-IW (Industrial Wastewater Transfer Piping), decontamination was complete when surface test results for pH of SWMU surfaces were within the neutral range of 5.0-8.0, based on field tests with pH test strips on surfaces lightly wetted with facility water (facility water at the site typically ranges from pH 5.5-6.5).
    - For SWMUs that potentially handled toxicity characteristic metals, which is limited to SWMU B322-FL (Fluoride/Heavy Metals Wastewater Transfer Piping) and/or acids containing fluorides, decontamination was considered complete when the pH of SWMU surfaces met the neutral range of pH 5.0-8.0 and SWMU surfaces were cleaned to a clean debris surface as defined in 6NYCRR Part 376.4(g).
    - For SWMUs that potentially handled mixed solvent-waste (F001-F005), including inactive Tank 208 and solvent waste piping within B322 labelled mixed solvent waste or individual solvent waste piping labelled AZ STRIP, NBA, isopropyl alcohol, and NMP, decontamination was complete when the interior SWMU surfaces either met the clean debris surface criterion described above or, where surfaces could not be visually inspected as described in Part 376.4(g), rinse water samples met Class GA Groundwater Standards. Where decontamination was not practical, the affected SWMU materials were removed from the site and disposed as hazardous waste.
        - For B322 solvent piping, which consisted of 2-inch to 4-inch ID black steel piping, no inspection or testing was required because all solvent piping was removed, sized and placed in container for offsite hazardous waste disposal.
        - For inactive Tank 208, a previously completed decontamination certification report for this tank provided documentation consistent with the decontamination criteria provided in this SWMU closure plan. Specifically, for SWMU surfaces that cannot be visually inspected as described in Part 376.4(g), rinse water samples were collected and analyzed for the hazardous constituent(s) handled by the SWMU. Decontamination was confirmed in the 2010 report to be complete because rinse water met Class GA Groundwater Standards, as confirmed by the absence of detected VOCs. Arcadis also observed the removal of the tank during the current project and the same day demolition of the above-grade portion of the tank vault. Arcadis observed that stainless steel liner in the concrete vault was corroded but held water. No visible sheens or free product were observed in the vault prior to of following water removal.
- The final inspections of each of the five SWMUs included in the project, as listed on Table 1 are documented in five checklists (Attachment B), along with notations regarding the verification process and acceptance criteria. Photographs are included with each checklist.

Post-decontamination test results for fluoride and industrial (acid) waste transfer piping were recorded on data tables provided in Attachment C. The data tables provide the final pH measurements recorded for the SWMUs and SWMU components closed or removed during the project. Based on Arcadis observations of clean-debris surface conditions and supporting field data, no additional testing was

necessary to release decontaminated plastics for disposal as non-hazardous waste, no longer subject to RCRA regulation. No testing was performed on the solvent waste transfer piping, which was disposed offsite as a hazardous waste (see Table 2 for waste disposal summary). The decontaminated Tank 208 was released for scrap metal recycling based on the 2010 report.

FINAL SWMU STATUS CHANGE

The specific SWMUs closed, removed or partially removed under this project, as updated in Table 1 are as follows:

- Unit ID # 208 – Tank 208: Removed.
- Unit ID # B322-FL – Fluoride/Heavy Metals Wastewater Piping: Partially Removed.
- Unit B322-IW – Industrial Wastewater Transfer Piping: Partially Removed.
- Unit B322-SO – Solvent Waste Transfer Piping: Partially Removed.
- CW L/UL322 – Container Waste Loading/Unloading Area: Closed.

Following NYSDEC acceptance of this Certification Report, IBM/GLOBALFOUNDRIES will update the status of the SWMU database to reflect the status changes listed on the attached Table 1.

In accordance with Module II of the 6 NYCRR Part 373 Hazardous Waste Management Permit, the next periodic RCRA report submitted to the NYSDEC will include the updated SWMU database.

EXCEPTIONS

Exceptions to this Certification Report are as follows:

- The project did not include closure, assessment or removal of underground SWMU system components associated with B322. All underground components of the B322 SWMUs are excluded from this evaluation and certification.
- The decontamination of SWMU Tank 208 was provided in the attached Tank 208 Closure Report prepared and signed in 2010 by a professional engineer not affiliated with Arcadis. Arcadis reviewed the Tank 208 Closure Report and included it as documentation of Tank 208 closure. Arcadis only observed the removal of Tank 208 during the same day demolition of the concrete vault cover in 2018. 2018. Underground floor drain piping between the solvent room and Tank 208 had been previously sealed at the floor drains and remains in place. Therefore, Arcadis' certification of Tank 208 removal is limited to the tank only.
- The project did not include demolition of B322 structures south of Column Line 22 nor the closure and removal of SWMUs within the remaining structures. As such, Arcadis' certification of closure or removal excludes any remaining portions or components south of Column Line 22.

CERTIFICATION STATEMENT

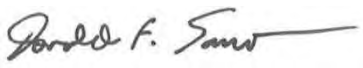
I, Donald Sauda, P.E., as a licensed Professional Engineer in the State of New York (No. 084145), hereby certify that the SWMUs or their components listed in the attached Table 1, that were removed, partially removed or decontaminated in place during the project in Building 322 at the GLOBALFOUNDRIES US 2 LLC Fab 10 Facility in Hopewell Junction, New York have been closed, partially closed, identified as previously closed (prior to the project), with exceptions noted herein, in accordance with the SWMU closure approach presented in *Plan for Closure of SWMUs in Building 322, Hopewell Junction, NY* prepared by Arcadis (April 20, 2018) and approved by NYSDEC on May 9, 2018.

This certification is based on Arcadis' on-site observation during implementation of the SWMU closure activities and review of relevant decontamination documentation provided by GLOBALFOUNDRIES for SWMU Unit ID # 208. I also certify that, to the best of my knowledge, this Certification Report accurately reflects the SWMU closure activities that were conducted.

Please do not hesitate to contact me if you should have any questions or need additional information regarding this Certification Report.

Sincerely,

Arcadis of New York, Inc.



Donald Sauda, P.E.
Client Director

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Randall Duggan, GLOBALFOUNDRIES
Dean Chartrand, IBM
Andy Wilson, Whiting-Turner
Mike Jones, Arcadis
Raymond Kapp, Arcadis

Enclosures:

Tables

1 Active SWMUs and Closed/Removed Status as of December 2018

2 Facilities Receiving SWMU Components

Figures

1 B322 Aerial View

2 B322 Approximate SWMU Layout

Attachments

A Decontamination of B322 W Solid Waste Management Unit (SWMU) 208 (William F. Cosulich Associates, P.C., June 2010)

B B322 SWMU Closure Removal Checklists and Photographs

C B322 SWMU Decontamination Verification Tables

TABLES

Table 1
Active SWMUs and Closed/Removed Status as of December 2018
SWMU Closure Report
B322 Demolition Project

GLOBALFOUNRIES US 2 LLC Fab 10 Facility
Hopewell Junction, New York

UNIT ID # (1)	DESCRIPTION	*Unit Type	LOCATION	STATUS	GW REMEDIATION AREA?	RCRA STATUS	PARCEL NUMBER(S)	Permit Table Order	Scheduled for Closure/Removal in 2018	Verification Date	SWMU Checklist Index Number	Revised Status December 2018
204	Solvent Waste-Mixed	S/TT	B/322 E	Inactive	No	No Further Action *	5	145	No			
205	NBA Waste	S/TT	B/322 E	Inactive	No	No Further Action *	5	146	No			
206	Isopropyl Alcohol Waste	S/TT	B/322 E	Inactive	No	No Further Action *	5	147	No			
207	N-Methyl-2-Pyrrolidone Waste	S/TT	B/322 E	Inactive	No	No Further Action *	5	148	No			
208	Solvent Waste-Mixed (Spill Tank)	S/TT	B/322 W	Inactive	B/322 AOC	No Further Action *	5	149	Yes - 2018	11/8/2018	20180001	Removed
3093	Freon TF Waste	S/TT	B/322 K21	Removed	B/322 AOC	No Further Action *	5	319	Previously Removed			
3100	Freon TF Waste	S/TT	B/322 J-20	Removed	B/322 AOC	No Further Action *	5	324	Previously Removed			
B322-FL	Fluoride/Heavy Metals Wastewater Transfer Piping	Other	B/322	Active	B/322 AOC	No Further Action *	5	529	Yes - Partial Removal 2018	11/21/2018	20180002	Active
B322-IW	Industrial Wastewater Transfer Piping	Other	B/322	Active	B/322 AOC	No Further Action *	5	530	Yes - Partial Removal 2018	9/21/2018	20180003	Active
B322-SO	Solvent Waste Transfer Piping	Other	B/322	Active	B/322 AOC	No Further Action *	5	528	Yes - Partial Removal 2018	10/2/2018	20180004	Active
CW L/UL 322	Container Waste Loading/Unloading Area	TS/CSA	B/322	Active	B/322 AOC	No Further Action *	5	30	Yes - 2018	8/20/2018	20180005	Closed
L/UL Area #25	Tank Truck Loading/Unloading Area	TS/CSA	B/322 E	Active	B/322 AOC	No Further Action *	5	25	No			

*Unit Type Key:

TS/CSA	Transfer Stations and Container Storage Areas (CSA's)
S/TT	Storage/Treatment Tanks
Other	Other
AOC	Areas of Concern

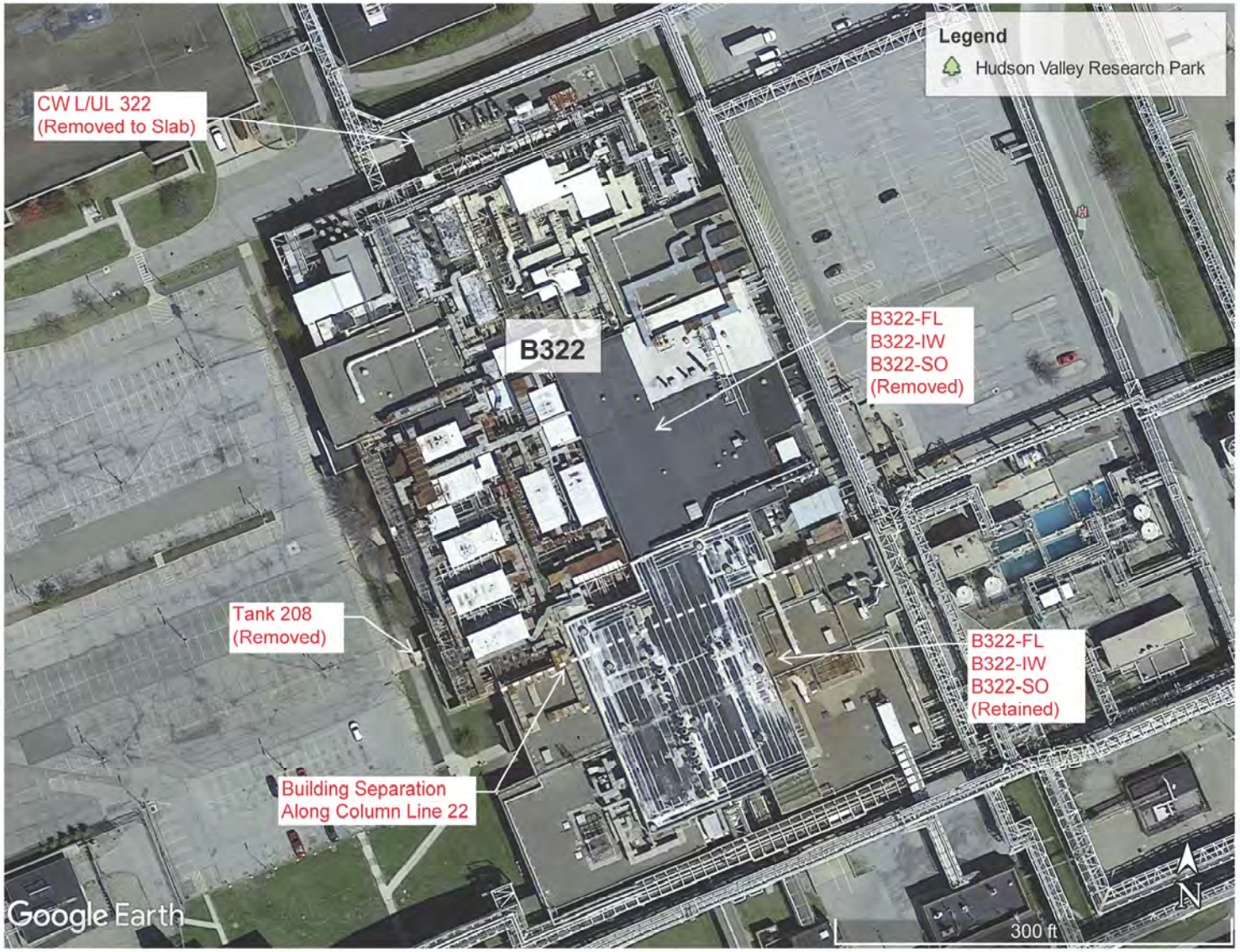
(1) Solid Waste Management Units (SWMUs) - As Identified in Permit Module II of IBM's 6NYCRR Part 373 Hazardous Waste Management Permit.

Table 2
Facilities Receiving SWMU Components
SWMU Closure Report
B322 Demolition Project

GLOBALFOUNRIES US 2 LLC Fab 10 Facility
Hopewell Junction, New York

Facility	Materials Managed	Method	Transporter
Dutchess County Resource Recovery Facility 96 Sand Dock Rd Poughkeepsie, NY 12601	Non-Metal Debris (Decontaminated PVC Pipe)	Waste to Energy	Royal Carting
Michigan Disposal Waste Treatment Plant 49350 North I-94 Service Rd Belleville, MI 48111	Hazardous Solids (F003)	Microencapsulation	Freehold Cartage
Millens Metal Recycling 4 Kieffer Lane Kingston, NY 12401	Scrap Metal (Tank 208)	Recycle	Millens

FIGURES



GLOBALFOUNDRIES
B322 SWMUS HOPEWELL JUNCTION, NY
CLOSURE CERTIFICATION REPORT

B322 AERIAL VIEW

ARCADIS Designs & Consultancy for natural and built assets

FIGURE
1

All Sewer Main Trenches Expected to Include 4 in. ID Solvent (4), Fluoride (1-2) and Acid (1-2) Waste Drains

Main Trench No 1 Dual Trench Branches Combine Near Outlet

Main Trench No. 2

Main Trench No. 3

Main Trench No. 4

Main Trench No. 5

Main Trench No. 6

Main Trench No. 7

UNDERGROUND WASTE PIPING VAULT

UNDERGROUND WASTE PIPING VAULT

UNDERGROUND WASTE PIPING VAULT

SOLVENT WASTE COLLECTION BUILDING

Approximate Extent of Mains

Approximate Extent of Mains

Approximate Extent of Mains

Approximate Extent of Mains

Three 2-in. Solvent Laterals Above Slab Painted White, and One 2-in. Mixed Solvent Lateral in Shallow Trench (Acid Lateral above Slab and Fluoride Lateral In Trench)

Solvent Pipe Vents Painted White

Fluoride Pipe in 2-ft Shallow Trench

Location of All Mains and Laterals to be Determined by Contractor for Removal

Laterals Shown Are Only a Small Fraction of Laterals for Solvent, Fluoride and Industrial/Acid Drain Systems

Four 4-in. Solvent Mains, IW/Acid Main and FI Main

SWMU Piping South of Column Line 22 Remains in Place

Inspection Cuts Made in Four 4-in Solvent Mains Prior to Removal

All SWMU Piping to be Cut and Capped within 10 ft South of Column Line 22 (typical) and Remain in Place

Four 2-in Solvent Laterals, Painted Grey

Four 4-in. solvent mains

Solvent Vent Pipes Unpainted

Inspection Cuts Made in 4-in. Fluoride and Industrial/Acid Mains Prior to Removal

4-in. Mains to Remain South of Cut Line

CW L/UL 322 SWMU Container Waste Loading/Unloading Area

Approximated upstream extents

Inspection Cuts Made in Four 4-in. Solvent Mains, Two 4-in. Fluoride Mains, and One 4-in. Acid Main Before Removal

Four 2-in. Solvent Laterals Unpainted

Four 2-in. Solvent Laterals Painted White

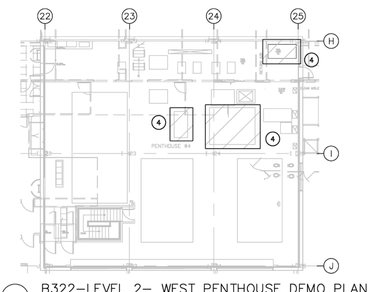
Appproximate Lateral Extent

Four 2-in. Solvent Laterals Unpainted

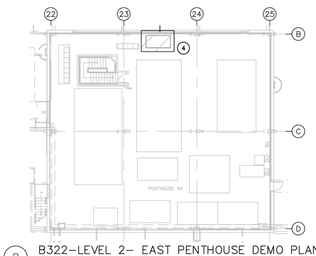
Tank 208 SWMU Located Under Exterior Dock (not Shown on Drawing)

Highlighted piping is a fraction of the entire SWMU piping network. There are 7 outlet points for the 4-inch main drains (in confined space pits) consisting of 4 solvent, 1-2 flouride/heavy metal, and 1-2 industrial/ acid drains per main outlet point along Column H (outer wall).

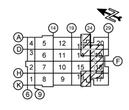
1 B322–LEVEL 1–CONTAINMENT AND TRENCH PIPING DEMO PLAN
NTS



3 B322–LEVEL 2– WEST PENTHOUSE DEMO PLAN
NTS



2 B322–LEVEL 2– EAST PENTHOUSE DEMO PLAN
NTS



KEY PLAN B322 FL. 1

NORTH

GENERAL NOTES

A FOR GENERAL NOTES, LEGENDS, AND ABBREVIATIONS SEE DRAWINGS SEFKI–0001, SEFKI–0002, AND SEFKI–0003.

B CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS PRIOR TO STARTING WORK.

C COORDINATE WITH W–T, PRIOR TO PERFORMING ANY WORK.

D ADHERE TO EAST FISHKILL SITE SPECIFICATIONS FOR ALL WORK.

E VERIFY MISSING AND/OR INCOMPLETE INFORMATION WITH COORDINATOR BEFORE SUBMITTING ANY REQUESTS FOR INFORMATION.

KEYED NOTES

1 CUT PIPING IN TRENCH FLUSH TO THE INTERIOR OF THE EXTERIOR BUILDING WALL AND PLUG.

2 REMOVE ALL PIPING BELOW RAISED ACCESS FLOOR AND IN TRENCHES.

3 REMOVE ANY UNUSED PROCESS AND MECHANICAL EQUIPMENT IN THE B322 SOUTH EAST MER.

4 REMOVE UNUSED PROCESS VACUUM AND CLEANING VACUUM EQUIPMENT SKIDS IN B322 PENTHOUSES.

WHITING-TURNER
NATIONAL RESOURCES
GLOBAL FOUNDRIES

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Pittsburgh Office
625 Liberty Avenue
Suite 1700
Pittsburgh, PA 15275

Project Title
GLOBALFOUNDRIES
B322 TELECOM/UTILITY SERVICES ISOLATION DESIGN

GLOBALFOUNDRIES
B322 SWMUS HOPEWELL JUNCTION, NY
CLOSURE CERTIFICATION REPORT

B322 APPROXIMATE SWMU LAYOUT

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2

ATTACHMENT A

Decontamination of B322 W Solid Waste Management Unit (SWMU) 208 (William F. Cosulich Associates, P.C., June 2010)

IBM

International Business Machines Corporation

EAST FISHKILL FACILITY
HUDSON VALLEY
RESEARCH PARK
HOPEWELL JUNCTION, NY

Decontamination of B/322 W Solid Waste Management Unit (SWMU) 208

pizzagalli
construction company

Prepared By

William F. Cosulich Associates, P.C.
ENVIRONMENTAL ENGINEERS AND SCIENTISTS

June 2010

DECONTAMINATION OF B/322 W
SOLID WASTE MANAGEMENT UNIT (SWMU) 208
INTERNATIONAL BUSINESS MACHINES CORPORATION
EAST FISHKILL FACILITY

Prepared for:

PIZZAGALLI CONSTRUCTION COMPANY
WAPPINGERS FALLS, NEW YORK
AND
INTERNATIONAL BUSINESS MACHINES CORPORATION
HOPEWELL JUNCTION, NEW YORK

Prepared by:

WILLIAM F. COSULICH ASSOCIATES, P.C.
330 CROSSWAYS PARK DRIVE
WOODBURY, NEW YORK

JUNE 2010

DECONTAMINATION OF B/322 W
SOLID WASTE MANAGEMENT UNIT (SWMU) 208
INTERNATIONAL BUSINESS MACHINES CORPORATION
EAST FISHKILL FACILITY

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1.0 INTRODUCTION

1.1 Project Background

The International Business Machines Corporation (IBM) East Fishkill facility is located at the Hudson Valley Research Park (HVRP) on State Route 52 in Hopewell Junction, Dutchess County, New York. The facility is bordered on the north by State Route 52 and on the south by U.S. Interstate 84, and is located approximately 10 miles east of the Hudson River. IBM initiated manufacturing operations at the East Fishkill facility in April 1963. The site currently houses various facilities and operations primarily involved in the manufacture of semiconductors and electronic computing equipment.

As a result of the manufacturing operations conducted at the facility, both hazardous and nonhazardous waste are generated. In order to properly manage hazardous waste at the facility, IBM obtained a 6 NYCRR Part 373 Permit from the New York State Department of Environmental Conservation (NYSDEC) for the storage of hazardous waste in containers within Building 309 (Permit No. 3-1323-0025/00249-0). As part of the permit application process, IBM was required to identify all solid waste management units (SWMUs) located at the facility. SWMUs are defined as any discernible unit in which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of hazardous or solid wastes. These SWMUs were incorporated into the permit for the facility and evaluated on the potential for the release of hazardous waste or hazardous constituents from the unit to the environment. In evaluating each SWMU, several factors were considered to determine the "release potential" of each unit, including history of releases, design characteristics, secondary containment, location and proximity to contaminated environmental media.

Based on the above factors regarding release potential, each unit was placed into one of the following three subcategories:

- Category A - No Further Action (no release)
- Category B - Sampling Required (possible release)

- Category C - RCRA Facility Investigation and/or Corrective Measure Study required (documented release)

Due to the fact that B/322 is considered to be a part of the IBM East Fishkill facility, SWMU 208 located on the exterior of the west side of B/322 (B/322 W) is incorporated into the 6 NYCRR Part 373 Permit. SWMU 208 located at B/322 W is grouped in Category A on the permit.

In June 2000, MiCRUS, a tenant of the HVRP, was purchased by the Philips Semiconductor Manufacturing, Inc. and took over ownership of the division. In 2006, NXP Semiconductors USA, Inc. (NXP) took over ownership of the Philip's Semiconductor Division and operated the spaces previously occupied by Philips until 2009, when NXP ceased manufacturing operations at the HVRP. This resulted in the termination of the lease agreement and turning over, to IBM control, the operation of the spaces in B/310, B/320B and B/322 formerly occupied by NXP. IBM determined that SWMU 208 listed on Table 1-1 required decontamination before the final turnover of the leased space was completed. SWMU 208 included a less-than-90-day mixed solvent hazardous waste spill tank and associated piping. The location of SWMU 208 is provided on the site location map in Figure 1-1.

It should be noted that although SWMU 208 listed on Table 1-1 has been decontaminated, it will remain a part of the 6 NYCRR Part 373 Permit for the IBM East Fishkill facility.

1.2 Project Scope and Objective

The objective of this decontamination report is to ensure that SWMU 208 located outside of B/322 W has been properly decontaminated and that the decontamination process is documented and certified as having been completed in accordance with the Work Plan that is provided as Appendix A. IBM has decontaminated this SWMU in accordance with the closure performance standard at 6 NYCRR Part 373-3.7(b) and (e) and general policy guidelines obtained from the NYSDEC. Techtron Environmental, Inc. (Techtron), stationed at the IBM

Table 1-1

IBM EAST FISHKILL FACILITY
DECONTAMINATION OF B/322 W
SOLID WASTE MANAGEMENT UNIT (SWMU) 208
IDENTIFICATION OF SWMUs UNDERGOING DECONTAMINATION

Tank #	Capacity (gallons)	Location	Material	Orientation	Tank Contents
208	1,300	B/322 W	Stainless Steel	Vertical	Mixed Waste Solvent

LEGEND:

MWS: MIXED WASTE SOLVENT

B320B

B322

B321

208 MWS

0 50' 100'

SCALE IN FEET

INTERNATIONAL BUSINESS MACHINES CORPORATION
EAST FISHKILL FACILITY - HUDSON VALLEY RESEARCH PARK
HOPEWELL JUNCTION, NEW YORK

BUILDING 322 W SOLID WASTE MANAGEMENT UNIT 208
LOCATION MAP

FIGURE 1-1

William F. Cosulich Associates, P.C.
Environmental Engineers and Scientists

F:\2515\dwg\2515-FIG1-1.dwg, FIG 1-1-322, 6/14/2010 2:03:06 PM, AStrauss

East Fishkill facility, conducted the decontamination activities for the Pizzagalli Construction Company (Pizzagalli). Pizzagalli retained William F. Cosulich Associates, P.C. (WFC) to provide engineering oversight of the project and to prepare a written report to document the decontamination activities. This report provides a Professional Engineer's certification that SWMU 208 was decontaminated in accordance with the Work Plan as further detailed in this report.

2.0 SUMMARY OF DECONTAMINATION ACTIVITIES

This section of the report provides a summary of the field activities associated with the decontamination of B/322 W SWMU 208 identified in Section 1.0. During the course of the project, WFC provided engineering oversight to ensure that the decontamination and sampling activities undertaken at B/322 W were conducted in accordance with the Work Plan. The following section provides excerpts from the work plan for each step of the decontamination project (shown in italics), followed by a brief description of the onsite decontamination activities. Appendix B of this report, entitled "Daily Field Activity Reports," contains a detailed description of the daily activities conducted by WFC and Techtron during the course of the project. In addition, photographs of the work conducted are provided in the photographic log provided in Appendix C.

1. *The unit will be pumped as low as possible, with all residual waste removed from the unit either by utilizing a vacuum truck or a portable pump. The liquid will be transferred to B/309 for classification and management in accordance with standard procedures under the IBM East Fishkill 6 NYCRR 373 Permit. Any remaining sludge/solids will be removed from the unit by hand, placed in a drum and labeled in accordance with USDOT regulations before being transferred to B/309 for proper classification and management.*

   A mixture of mud/rust-like material was located within Tank 208 that was pumped into the tanker truck. Any solid waste material such as PPE and used rags and other debris were placed in 55-gallon drums for proper off-site disposal. A potable water source was utilized to decontaminate the interior of the units. The tanker truck used to collect the mud/rust-like material and the decontamination wastewater was transported to B/309 for characterization prior to proper off-site disposal of the mud/rust-like material and wastewater.

2. *The SWMU interior will be decontaminated with a water and suitable surfactant solution in accordance with procedures approved by IBM. Decontamination water will be removed from the unit utilizing the same method as was used to remove residual liquid in Step 1 above.*

   A mixture of ZEP Z-Green detergent and water was used to clean the interior of the unit. After cleaning, the tank was rinsed with water to remove any residual surfactant solution and the contents of the tank were pumped into the tanker truck.

3. *Rinse water samples will collected in accordance with the Rinsate Sample Collection Protocol provided in Section 1.7.3 on page 1-13 of the Quality Assurance Project Plan (QAPP)*

Rinse water samples were collected in accordance with the procedures found in Section 1.7.3 of the QAPP. A rinse blank sample was first collected from the source water utilized to decontaminate the unit. Organic-free distilled water supplied by the laboratory was utilized as rinse water. The rinse water was poured into the tank and allowed to collect in the bottom of the unit. The rinse water was allowed to remain in the unit for approximately 10 minutes before a sample was collected. In addition, a blind duplicate sample was collected each day. Disposable sampling equipment was placed into 55-gallon drums for proper off-site disposal.

4. *Rinse water samples will be analyzed for volatile organic compounds by a NYSDOH ELAP certified laboratory.*

Rinse water samples, blanks and duplicates were labeled, placed in a cooler on ice and transported via Chain of Custody to EnviroTest Laboratories, Inc. in Newburgh, New York for analysis. Copies of the Chain of Custody forms are provided in Appendix D.

5. *Rinse water sample analytical results will be compared to the Class GA Groundwater Standards and Guidance Values listed in the NYSDEC Division of Water's Technical and Operational Guidance Series (TOGS) 1.1.1-"Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations." If the rinse water sample results exceed the Class GA Groundwater Standards, the decontamination process will be repeated until the results are below the Class GA Standards at which time the decontamination will be deemed complete.*

Section 3.0 of this report provides a discussion of the results of the rinse water sample analysis.

3.0 DISCUSSION OF ANALYTICAL RESULTS

This section of the report presents the results of the laboratory analyses conducted on the rinse water, rinse water blank and blind duplicate samples collected during the decontamination of SWMU 208. As discussed in Section 2.0 of this report, a rinse water sample was collected from SWMU 208 after decontamination activities were completed. In addition, a rinse water blank sample was collected from the same water source used to decontaminate SWMU 208. A blind duplicate sample was collected from SWMU 208. Copies of the laboratory Chain of Custody forms used to transfer the samples to the laboratory for analysis are provided in Appendix D. Copies of the Category B Deliverables from EnviroTest Laboratories, Inc. are provided in Appendix E. Appendix F provides documentation of the data validation process conducted by WFC.

3.1 Tank 208

The rinse water samples collected from Tank 208 were analyzed for volatile organic compounds (VOCs) to verify the effectiveness of the decontamination activities. Table 3-1 summarizes and compares the analytical results to the Class GA Groundwater Standards and Guidance Values listed in the NYSDEC's Technical and Operational Guidance Series (TOGS) 1.1.1 – "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations." The following compound was detected in the rinse blank sample above these levels:

- Chloroform was detected at a concentration of 19 ug/l, exceeding the Class GA Standards of 7 ug/l in sample B322-RB-1, the rinse blank sample.

All constituents detected in the rinse water sample and blind duplicate sample were determined to be below these levels. As a result, the decontamination of Tank 208 was determined to be complete.

TABLE 3-1
IBM EAST FISHKILL FACILITY
DECONTAMINATION OF B/322 W SOLID WASTE MANAGEMENT UNIT (SWMU) 208
RINSE WATER SAMPLING ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (VOCs)

SAMPLE ID	**MWS-208-R-1**	**DUP040810**	**B322-RB-1**		**NYSDEC CLASS GA**
SAMPLE TYPE	RINSE	DUPLICATE	RINSE BLANK		**GROUNDWATER**
DATE OF COLLECTION	4/8/2010	4/8/2010	4/8/2010	**REPORTING**	**STANDARDS/**
DILUTION FACTOR	1.0	1.0	1.0	**LIMITS**	**GUIDANCE VALUES**
UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
Dichlorodifluoromethane	U	U	U	1	5 ST
Chloromethane	U	U	U	1	5 ST
Vinyl Chloride	U	U	U	1	2 ST
Bromomethane	U	U	U	1	5 ST
Chloroethane	U	U	U	1	5 ST
Trichlorofluoromethane	UJ	UJ	UJ	1	5 ST
1,1-Dichloroethene	U	U	U	1	5 ST
Acetone	U	U	3.4	1	50GV
Iodomethane	U	U	U	1	----
Carbon Disulfide	U	U	U	1	60GV
Methylene Chloride	U	U	U	1	5 ST
trans-1,2-Dichloroethene	U	U	U	1	5 ST
Methyl tert-Butyl Ether	U	U	U	1	10GV
1,1-Dichloroethane	U	U	U	1	5 ST
Vinyl Acetate	U	U	U	1	----
2-Butanone	U	U	U	1	50GV
cis-1,2-Dichloroethene	U	U	U	1	5 ST
2,2-Dichloropropane	U	U	U	1	5 ST
Bromochloromethane	U	U	U	1	5 ST
Chloroform	U	U	**19 J**	1	7 ST
1,1,1-Trichloroethane	U	U	U	1	5 ST
1,1-Dichloropropene	U	U	U	1	5 ST
Carbon Tetrachloride	U	U	U	1	5 ST
1,2-Dichloroethane	U	U	U	1	0.6 ST
Benzene	U	U	U	1	1 ST
Trichloroethene	U	U	U	1	5 ST
1,2-Dichloropropane	U	U	U	1	1 ST
Dibromomethane	U	U	U	1	5 ST
Bromodichloromethane	U	U	U	1	5 ST
cis-1,3-Dichloropropene	U	U	U	1	0.4 ST *
4-Methyl-2-pentanone	U	U	U	1	----
Toluene	U	U	U	1	5 ST
trans-1,3-Dichloropropene	U	U	U	1	0.4 ST *
1,1,2-Trichloroethane	U	U	U	1	1 ST
1,3-Dichloropropane	U	U	U	1	5 ST

TABLE 3-1 (Continued)
IBM EAST FISHKILL FACILITY
DECONTAMINATION OF B/322 W SOLID WASTE MANAGEMENT UNIT (SWMU) 208
RINSE WATER SAMPLING ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (VOCs)

SAMPLE ID	**MWS-208-R-1**	**DUP040810**	**B322-RB-1**		**NYSDEC CLASS GA GROUNDWATER STANDARDS/ GUIDANCE VALUES**
SAMPLE TYPE	RINSE	DUPLICATE	RINSE BLANK	**REPORTING LIMITS**	
DATE OF COLLECTION	4/8/2010	4/8/2010	4/8/2010		
DILUTION FACTOR	1.0	1.0	1.0		
UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
Tetrachloroethene	U	U	U	1	5 ST
2-Hexanone	U	U	U	1	50GV
Dibromochloromethane	UJ	UJ	UJ	1	50GV
1,2-Dibromoethane	U	U	U	1	----
Chlorobenzene	U	U	U	1	5 ST
1,1,1,2-Tetrachloroethane	U	U	U	1	5 ST
Ethylbenzene	U	U	U	1	5 ST
m,p-Xylene	U	U	U	1	5 ST
o-Xylene	U	U	U	1	5 ST
Xylene (total)	U	U	U	1	5 ST
Styrene	U	U	U	1	5 ST
Bromoform	UJ	UJ	UJ	1	50GV
Isopropylbenzene	U	U	U	1	5 ST
1,1,2,2-Tetrachloroethane	U	U	U	1	5 ST
Bromobenzene	U	U	U	1	5 ST
1,2,3-Trichloropropane	U	U	U	1	0.04 ST
n-Propylbenzene	U	U	U	1	5 ST
2-Chlorotoluene	U	U	U	1	5 ST
1,3,5-Trimethylbenzene	U	U	U	1	5 ST
4-Chlorotoluene	U	U	U	1	5 ST
tert-Butylbenzene	U	U	U	1	5 ST
1,2,4-Trimethylbenzene	U	U	U	1	5 ST
sec-Butylbenzene	U	U	U	1	5 ST
4-Isopropyltoluene	U	U	U	1	5 ST
1,3-Dichlorobenzene	U	U	U	1	3 ST
1,4-Dichlorobenzene	U	U	U	1	3 ST
n-Butylbenzene	U	U	U	1	5 ST
1,2-Dichlorobenzene	U	U	U	1	3 ST
1,2-Dibromo-3-chloropropane	UJ	UJ	UJ	5	0.04 ST
1,2,4-Trichlorobenzene	U	U	U	1	5 ST
Hexachlorobutadiene	U	U	U	1	0.5 ST
Naphthalene	U	U	U	5	10 GV
1,2,3-Trichlorobenzene	U	U	U	1	5 ST
Totals	0.0	0.0	22.4		

Qualifiers:
U: Constituent analyzed for but not detected.
J: Estimated.

Notes:
*: Value pertains to the sum of the isomers
GV: Guidance Value
ST: Standard
----: Not established
☐: Result exceeds NYSDEC Class GA Standards/Guidance Values
DUP: Blind duplicate sample
MWS: Mixed waste solvent
R: Rinse sample
RB: Rinse blank sample

4.0 CERTIFICATION OF DECONTAMINATION

I certify under penalty of law that the Solid Waste Management Unit 208 located outside of Building 322 W at the International Business Machines Corporation East Fishkill facility in Hopewell Junction, New York, included in this report has been decontaminated in accordance with the specifications contained in the Work Plan as described in this report.

OWNER/OPERATOR:

Signature: _____

Name: _____

Title: _____

Date: _____

INDEPENDENT PROFESSIONAL ENGINEER:

Signature: Brian Veith

Name: Brian M. Veith

Title: Vice President

Date: 6/15/2010

APPENDIX A

WORK PLAN AND QUALITY ASSURANCE PROJECT PLAN

INTERNATIONAL BUSINESS MACHINES CORPORATION
EAST FISHKILL FACILITY
PROCEDURES FOR DECONTAMINATION OF NXP AND RELATED SOLID WASTE MANAGEMENT UNITS (SWMUs)

Mixed Solvent Waste Tanks

This procedure is intended to be used to collect samples for analysis from the solvent storage tanks listed below.

UNIT ID #	LOCATION	TANK CONTENTS	PURPOSE
204	312 B Vault	Solvent Waste - Mixed	< 90 Day HW Storage Tank
205	312 B Vault	Solvent Waste - Mixed	< 90 Day HW Storage Tank
206	312 B Vault	Solvent Waste - Mixed	< 90 Day HW Storage Tank
207	312 B Vault	Solvent Waste - Mixed	< 90 Day HW Storage Tank
208	322 West Truck Spill	Solvent Waste - Mixed	Spill Tank
3109	OMF	Solvent Waste - Mixed	< 90 Day HW Storage Tank
3110	330D South Outside	Solvent Waste - Mixed	< 90 Day HW Storage Tank
285	309 Outside	Solvent Waste - Mixed	< 90 Day HW Storage Tank
3158	310 Column J8	Solvent Waste - Mixed	< 90 Day HW Storage Tank

1. *The unit will be pumped as low as possible, with all residual waste removed from the unit either by utilizing a vacuum truck or a portable pump. The liquid will be transferred to B/309 for classification and management in accordance with standard procedures under the IBM East Fishkill 6 NYCRR 373 Permit. Any remaining sludge/solids will be removed from the unit by hand, placed in a drum and labeled in accordance with USDOT regulations before being transferred to B/309 for proper classification and management.*

INTERNATIONAL BUSINESS MACHINES CORPORATION
EAST FISHKILL FACILITY
DECONTAMINATION OF NXP AND RELATED
SOLID WASTE MANAGEMENT UNITS (SWMUs)

CERTIFICATION OF COMPARISON OF RINSE WATER SAMPLES TO CLASS GA GROUNDWATER STANDARDS

2. *The SWMU interior will be decontaminated with a water and suitable surfactant solution in accordance with procedures approved by IBM. Decontamination water will be removed from the unit utilizing the same method as was used to remove residual liquid in Step 1 above.*

3. *Rinse water samples will collected in accordance with the Rinsate Sample Collection Protocol provided in Section 1.7.3 on page 1-13 of the attached Quality Assurance Project Plan (QAPP)*

4. *Rinse water samples will be analyzed for volatile organic compounds by a NYSDOH ELAP certified laboratory.*

5. *Rinse water sample analytical results will be compared to the Class GA Groundwater Standards and Guidance Values listed in the NYSDEC Division of Water's Technical and Operational Guidance Series (TOGS) 1.1.1-"Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations." If the rinse water sample results exceed the Class GA Groundwater Standards, the decontamination process will be repeated until the results are below the Class GA Standards at which time the decontamination will be deemed complete.*

INTERNATIONAL BUSINESS MACHINES CORPORATION
EAST FISHKILL, NEW YORK

QUALITY ASSURANCE PROJECT PLAN FOR DECONTAMINATION OF NXP AND RELATED SOLID WASTE MANAGEMENT UNITS (SWMUs)

Prepared for:

INTERNATIONAL BUSINESS MACHINES CORPORATION
EAST FISHKILL, NEW YORK

Prepared by:

WILLIAM F. COSULICH ASSOCIATES, P.C.
WOODBURY, NEW YORK

NOVEMBER 2009

INTERNATIONAL BUSINESS MACHINES CORPORATION
EAST FISHKILL, NEW YORK
QUALITY ASSURANCE PROJECT PLAN FOR DECONTAMINATION OF NXP AND RELATED SOLID WASTE MANAGEMENT UNITS

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1.0 QUALITY ASSURANCE PROJECT PLAN

1.1 Project Identification

Facility Name:	International Business Machines Corporation (IBM) East Fishkill, New York
Project Name:	Decontamination of NXP and Related Solid Waste Management Units (SWMUs)
Project Managers:	Linda N. Daubert Ellen R. DeOrsay *(William F. Cosulich Associates, P.C.)*
Quality Assurance Officer:	Robbin A. Petrella *(William F. Cosulich Associates, P.C.)*
Field Operations Manager:	Michael Williams *(William F. Cosulich Associates, P.C.)*

1.2 Objective and Scope

The objective of this program is to decontaminate the NXP and related Solid Waste Management Units (SWMUs) located of the IBM East Fishkill facility. As part of the decontamination activities, rinse water and rinse water blank samples will be collected to verify the effectiveness of the decontamination procedures. The purpose of this Quality Assurance Project Plan (QAPP) is to develop and describe the detailed sample collection and analytical procedures that will ensure high quality data.

1.3 Data Usage

The data generated from the field sampling will be used to verify the effectiveness of the decontamination activities performed on the SWMUs and associated piping. Specifically, the samples will be used to determine whether the decontamination activities were successful in removing any contamination present in the SWMUs and associated piping. If the samples

indicate that contamination remains present, then additional decontamination may be required before the unit can be considered decontaminated.

1.4 Sampling Program Design and Rationale

The following presents a general discussion of the sampling to be conducted during the sampling portion of the program.

- Rinse Water Samples: Rinse water samples will be collected from certain SWMUs being decontaminated during this project. In addition, one blind duplicate will be collected each day a rinse water sample is collected.
- Rinse Water Blank Sample: One rinse water blank sample will be collected each day a rinse water sample is collected during this decontamination project directly from the water supply utilized to decontaminate the SWMUs.

1.5 Analytical Methods

Laboratory analysis of the rinse water and rinse water blank samples will consist of analyzing for pH, fluoride, and/or volatile organic compounds (VOCs) as identified in the 2005 NYSDEC Analytical Services Protocol (ASP), depending on sample location.

Table 1-1 presents a summary of the parameters/sample fractions to be analyzed. The table also lists the sample location, type of sample, sample matrix, number of samples and frequency of sample collection, type of sample container, method of preservation, holding time and analytical method.

Table 1-1

INTERNATIONAL BUSINESS MACHINES CORPORATION
DECONTAMINATION OF NXP AND RELATED SWMUs
SUMMARY OF MONITORING PARAMETERS/SAMPLE FRACTIONS

Sample Location	Sample Type	Sample Matrix	Sample Fraction	No. of Samples*	Frequency**	Container Type/Size/No.	Sample Preservation	Maximum Holding Time***	Analytical Method
Fluoride Wastewater SWMUs	Grab	Water	Fluoride	3	2	Plastic/50 ml/1 ICHEM 300 series or equivalent	Cool to 4°C	26 days for analysis	7/05 NYSDEC ASP, Method 9214
Fluoride Wastewater and Acid SWMUs			pH	3	3	Plastic/50 ml/1 ICHEM 300 series or equivalent	Cool to 4°C	analyze immediately	7/05 NYSDEC ASP, Method 9040

*Number of samples includes a rinse water, rinse water blank and duplicate.

**Frequency equals number of SWMUs to be decontaminated.

***Holding times based upon Verified Time of Sample Receipt at the laboratory.

Table 1-1 (continued)

INTERNATIONAL BUSINESS MACHINES CORPORATION
DECONTAMINATION OF NXP AND RELATED SWMUs
SUMMARY OF MONITORING PARAMETERS/SAMPLE FRACTIONS

Sample Location	Sample Type	Sample Matrix	Sample Fraction	No. of Samples*	Frequency**	Container Type/Size/No.	Sample Preservation	Maximum Holding Time***	Analytical Method
Mixed Solvent Tanks	Grab	Water	Volatile Organics	3	9	Glass/40 ml/3 ICHEM 300 series or equivalent	Cool to 4°C	10 days	7/05 NYSDEC ASP, Method 8260B

*Number of samples includes a rinse water, rinse water blank and duplicate.

**Frequency equals number of SWMUs to be decontaminated.

***Holding times based upon Verified Time of Sample Receipt at the laboratory.

Trip Blanks will be submitted each day samples are shipped to the laboratory. Provision for 6 trip blanks has been made.

1.6 Data Quality Requirements and Assessment

Data quality requirements and assessments are provided in the 2005 NYSDEC ASP, which includes the detection limit for each parameter and sample matrix (see Exhibit A). Note that quantification limits, estimated accuracy, accuracy protocol, estimated precision and precision protocol are determined by the laboratory and will be in conformance with the requirements of the 2005 NYSDEC ASP, where applicable. Table 1-2 presents a summary of the data quality requirements.

In addition to meeting the requirements provided in the 2005 NYSDEC ASP, the data must also be useful in evaluating the nature and extent of contamination. Data obtained during the field program will be compared to specific Standards, Criteria and Guidelines (SCGs). The SCGs to be utilized include:

Matrix	SCG
Rinse Water and Rinse Water Blank Samples	NYSDEC Class GA Groundwater Standards found at Division of Water Technical and Operational Guidance Series (1.1.1) dated June 1998.

1.6.1 Data Representativeness

Representative samples will be collected as follows:

- Rinse Water – Samples will be collected utilizing hose (deionized) water. Hose water will be poured into the SWMU, allowed to stand for approximately 10 minutes and then collected utilizing sterile plastic pipettes or similar equipment.
- Rinse Water Blank – Samples will be collected of the water utilized to decontaminate the area directly from the water source (e.g., hose, etc.) and passed through a sterile plastic pipette into the sample container.
- Equipment Decontamination – Non-sterile sampling equipment will be decontaminated prior to use at each location according to the NYSDEC-approved procedures described in Section 1.8 of this QAPP.

Table 1-2

INTERNATIONAL BUSINESS MACHINES CORPORATION
DECONTAMINATION OF NXP AND RELATED SWMUs
DATA QUALITY REQUIREMENTS

Parameter	Sample Matrix	CRDL* (ug/l)	Estimated Accuracy	Accuracy Protocol	Estimated Precision	Precision Protocol
Volatile Organics	Liquid	5-10 5-10	0.87 - 2.48 ug/l	Vol. IB, Chapter 4, Method 8260B, Table 7	0.11 - 4.00 ug/l	Vol. IB, Chapter 4, Method 8260B, Table 7

*Contract Required Detection Limits.

Table 1-2 (continued)

INTERNATIONAL BUSINESS MACHINES CORPORATION
DECONTAMINATION OF NXP AND RELATED SWMUs
DATA QUALITY REQUIREMENTS
OBJECTIVES FOR PRECISION, ACCURACY, AND COMPLETENESS

Matrix/Parameter	Precision (%)	Accuracy (%)
Rinse Water		
VOCs(a)	See Table 1-2a	See Table 1-2a

Notes:

(a) Accuracy will be determined as percent recovery of surrogate spike compounds and matrix spike compounds. Surrogate and matrix spike compounds for VOCs are listed in Table 1-2a. Precision will be estimated as the relative standard deviation of the percent recoveries per matrix.

(b) Accuracy will be determined as percent recovery of matrix spikes when appropriate or the percent recovery of a QC sample if spiking is inappropriate. Precision will be determined as relative percent difference of matrix spike duplicate samples, or duplicate samples if spiking is inappropriate.

(c) Precision will be determined as the average percent difference for replicate samples. Accuracy will be determined as the percent recovery of matrix spike samples or laboratory control samples, as appropriate.

Source: NYSDEC ASP

Table 1-2 (continued)

INTERNATIONAL BUSINESS MACHINES CORPORATION
DECONTAMINATION OF SNXP AND RELATED WMUs
DATA QUALITY REQUIREMENTS
ACCURACY REQUIREMENTS FOR VOC

	Spike Recovery Limits (%)
	Water
Surrogate Compound	
Toluene-d8	88-110
4-Bromofluorobenzene	86-115
1,2-Dichloroethane-d4	76-114
Matrix Spike Compound	
1,1-Dichloroethene	61-145
Trichloroethane	71-120
Chlorobenzene	75-130
Toluene	76-125
Benzene	76-127

Source: NYSDEC ASP

1.6.2 Data Comparability

All data will be presented in the units designated by the methods specified by a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory, and the 2005 NYSDEC ASP. In addition, sample locations, collection procedures and analytical methods from earlier studies will be evaluated for comparability with current procedures/methods.

1.6.3 Data Completeness

The acceptability of 100% of the data is desired as a goal for this project. The acceptability of less than 100% complete data, meeting all laboratory Quality Assurance/Quality Control (QA/QC) protocols/standards, will be evaluated on a case-by-case basis.

The laboratory utilized to perform the analyses on the rinse water, rinse water blank and duplicate samples will provide NYSDEC ASP Category B data deliverables.

1.7 Detailed Sampling Procedures

Rinse water, rinse water blank and duplicate samples will be collected following the decontamination activities in order to verify the effectiveness of the decontamination activities. One rinse water sample, one rinse water blank sample and one duplicate sample will be collected from certain SWMUs which are decontaminated as part of this program. Sampling procedures and equipment to be utilized are described in this QAPP. Sample collection will be performed in conformance with the procedures outlined in this QAPP.

When collecting the samples, care will be taken to maintain sample integrity by preserving its physical form and chemical composition to as great an extent as possible. First, the equipment utilized to collect the samples must be new and sterile or properly decontaminated. An appropriate piece of sampling equipment (e.g., disposable pipette) will be utilized to collect the sample and transfer it to the laboratory-supplied sample container. The sample should reflect

and contain a good representation of the area from which it was collected. The sample will be transferred into the sample container as quickly as possible.

There are several steps performed after the transfer of the sample into the sample container that are necessary to properly complete the collection activities. Once the sample is transferred into the appropriate container, the container will be capped and, if necessary, the outside of the container will be wiped with a clean paper towel to remove any grime. A clean paper towel moistened with distilled/deionized water will be used for this purpose.

Prior to sample collection, the sample container will be properly labeled. Information such as the sample identification number, location, collection time and sample description will be recorded in the field log book. Associated paper work (e.g., Chain of Custody forms) will then be completed and will stay with the sample. The samples will be packaged in a manner that will allow the appropriate storage temperature to be maintained during transportation to the laboratory. Samples will be delivered to the laboratory within 48 hours of collection.

Proper personal protective equipment and monitoring equipment (if determined to be necessary) will be used at all times during sample collection to further maintain sample integrity and protection of worker health and safety.

1.7.1 Sample Identification

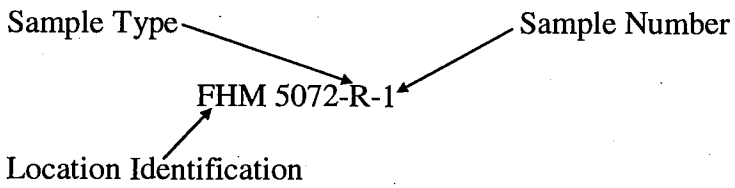
All samples collected during the field activities undertaken at NXP and Related SWMUs will be labeled with a sample identification code. The code will identify the sample location, sample type (sample matrix) and series numbers for the sample locations. Samples will be labeled according to the following system:

Location Identification: - The sample location will be assigned an identifier based on the SWMU from which the sample was collected. Samples collected from the first Fluoride/Heavy Metal Tank will be denoted "FHM (SWMU number)" (e.g., FHM 5072).

Sample Type: - "R" for rinse water and duplicate samples and "RB" for rinse water blank sample.

Sample Number: - In the field, each sample location will be designated with a number. The number will correspond with the number of the sample collected. Therefore, the first blank collected from an SWMU will be denoted "1." If the SWMU requires further decontamination, the second rinse blank will be denoted "2" and so on.

Based on the above sample identification procedures, an example of a sample label may be:



1.7.2 Sample Handling, Packaging and Shipping

All analytical samples will be placed in the appropriate sample containers as specified in the NYSDEC July2005 ASP. The holding time criteria identified in the ASP will be followed, as specified in Table 1-1.

Prior to packaging any samples for transportation to the laboratory, the sample containers will be checked for proper identification and compared to the field log book for accuracy. The samples will then be wrapped with a cushioning material (e.g., bubble wrap) and placed in a cooler (or laboratory shuttle) with a sufficient quantity of bagged ice or "blue ice" packs to maintain the samples at 4°C until arrival at the laboratory.

All necessary documentation required to accompany the samples during transportation will be placed in a sealed plastic bag and taped to the underside of the cooler lid. The cooler will then be sealed with fiber (duct) tape, and custody seals will be placed in such a manner that any opening of the cooler prior to arrival at the laboratory can be detected.

All samples will be shipped to ensure receipt at the laboratory within 48 hours of sample collection in accordance with ASP requirements.

1.7.3 Rinse Water/Blind Duplicate Samples

The following protocol will be adhered to for the collection of rinse water samples and the blind duplicate sample:

1. Be certain that the sample location is noted on a sample location sketch (see Section 1.10).
2. Be certain that the sampling equipment is either new or has been decontaminated utilizing the procedures outlined in Section 1.8.
3. Select a sample location within the area. One rinse water sample and one duplicate will be collected from each SWMU.
4. Remove a set of laboratory-supplied, precleaned sample containers from the sample cooler, label containers with an indelible marker and fill out a Chain of Custody form (refer to Section 1.10.2).
5. Don a new pair of disposable laboratory gloves (nitrile).
6. Slowly pour water into the SWMU from hose. The minimum amount of water necessary to properly fill all of the sample containers should be utilized. Note: Since it is not possible to extract all of the water poured into the SWMU, the volume of the sample containers plus additional water will have to be poured into the SWMU in order to properly fill all of the sample containers. Record the approximate volume of water utilized in the field log book.

   Note: If water will not pool within the SWMU, construct a berm to ensure pooling. Absorbent material or similar means should be used to construct berm.

7. Allow the water to remain within the tank or vault for approximately 10 minutes.
8. Collect the rinse water duplicate samples from the SWMU utilizing a new or decontaminated pipette. If the liquid level is of sufficient depth, containers may be filled by dunking the unpreserved container into the pooled liquid, or utilizing a dedicated unpreserved container to then fill the preserved sample container.
9. Once each sample container has been filled, replace the sample container cap.

10. Return the sample containers to the cooler.

11. Measure the wetted area of SWMU in each sample location and record in the field log book.

12. Record notes in field log book as described in Section 1.10.3.

13. If reusable sampling equipment was utilized, decontaminate the sampling equipment according to the procedures described in Section 1.8.

14. Place all disposable personal protective equipment and disposable sampling equipment into a 55-gallon drum or other approved container for disposal.

1.7.4 Rinse Water Blank Sample

The following protocol will be adhered to for the collection of the rinse water blank sample:

1. Be certain that the sample location is noted on a sample location sketch (see Section 1.10).

2. Be certain that the sampling equipment is either new or has been decontaminated utilizing the procedures outlined in Section 1.8.

3. Remove a set of laboratory-supplied, precleaned sample containers from the sample cooler, label containers with an indelible marker and fill out a Chain of Custody form (refer to Section 1.10.2).

4. Don a new pair of disposable laboratory gloves (nitrile).

5. Collect the rinse water blank sample by filling each container directly from the hose or other source utilized to supply water to the area for the decontamination activities. The hose water should be passed from the hose through a sterile disposable syringe/pipette (the same type utilized for collecting the rinse water samples) into the sample container.

6. Once each sample container has been filled, replace the sample container cap.

7. Return the sample containers to the cooler.

8. Record notes in field log book as described in Section 1.10.3.

9. Place all disposable personal protective equipment and disposable sampling equipment into a 55-gallon drum or other approved container for disposal.

1.8 Decontamination Procedures

Whenever feasible, all field sampling equipment should be dedicated to a particular sampling location. In instances where this is not possible, a field cleaning (decontamination) procedure will be used in order to reduce the risk of cross-contamination between sample locations. A decontamination station will be established for all field activities if field decontamination is necessary. This will be an area located at some distance from the sampling locations so as not to adversely impact the decontamination procedure while still allowing the sampling team to keep equipment handling to a minimum.

1.8.1 Field Decontamination Procedures

All nondisposable equipment will be decontaminated at appropriate intervals (e.g., prior to initial use, prior to moving to a new sampling interval or location, and prior to leaving the site). Different decontamination procedures are used for the various types of equipment utilized to perform the field activities. When designing a field decontamination program, it is advisable to initiate environmental sampling in the area of the site with the lowest contaminant probability and proceed through to the areas of highest suspected contamination.

1.8.2 Decontamination Procedure for Sampling Equipment

All Teflon, polyvinyl chloride (PVC), high density polyethylene (HDPE) and stainless steel sampling equipment will be decontaminated utilizing the following procedure:

- Wash thoroughly with nonresidual detergent (e.g., alconox) and clean potable tap water using a brush to remove particulate matter or surface film.
- Rinse thoroughly utilizing distilled or deionized water.
- Wrap completely in clean aluminum foil with dull side against the equipment.

The first step, a soap and water wash, is designed to remove all visible particulate matter and residual oil and grease. The distilled/deionized water rinse ensures complete removal of

residual cleaning products and the aluminum wrap protects the equipment from contamination and keeps it clean for use at another sampling location.

1.9 Laboratory Sample Custody Procedures

A NYSDOH ELAP certified laboratory meeting the requirements for sample custody procedures, including cleaning and handling sample containers and analytical equipment, will be used. The Standard Operating Procedures of the laboratory selected to undertake the analysis of environmental samples for this program will be available upon request.

1.10 Field Management Documentation

Proper management and documentation of field activities is essential to ensure that all necessary work is conducted in accordance with this Quality Assurance Project Plan in an efficient and high quality manner. Field management procedures include following proper chain of custody procedures to track a sample from collection through analysis, noting when and how samples are split (if required), completing Chain of Custody forms and maintaining a daily field log book. Proper completion of the Chain of Custody and the field log book are necessary to support the future actions that may result from the sample analysis. This documentation will support that the samples were properly collected and handled.

1.10.1 Location Sketch

Each sampling point shall have its own location sketch with measurements and permanent references if possible. This sketch will be recorded in the field log book.

1.10.2 Chain of Custody

A Chain of Custody (COC) form is initiated at the laboratory with container preparation and transportation to the site. The COC must remain with the samples at all times and bear the name of the person assuming responsibility for the samples. This person is tasked with ensuring

secure and proper handling of the containers and samples. When the form is complete, it should indicate that there were no lapses in sample accountability.

A sample is considered to be in an individual's custody if any of the following conditions are met:

- It is in the individual's physical possession, or
- It is in the individual's view after being in his or her physical possession, or
- It is secured by the individual so that no one can tamper with it, or
- The individual puts it in a designated and identified secure area.

In general, Chain of Custody forms are provided by the laboratory contracted to perform the analytical services. At a minimum, the following information shall be provided on these forms:

- Project name and address
- Project number
- Sample identification number of each sample contained in the sample cooler
- Date of sample collection
- Time of sample collection
- Sample location
- Sample type/matrix
- Analyses requested
- Number of containers and volume collected
- Remarks (e.g., preservation, special handling, etc.)
- Sampler(s) name(s) and signature(s)
- Spaces for relinquished by/received by signature and date/time.

For this particular study, Chain of Custody forms provided by the laboratory will be utilized.

The Chain of Custody form is completed and signed by the person performing the sampling activities. The original form travels with the samples and is signed and dated each time the samples are relinquished to another party, until it reaches the laboratory or analysis is completed. The field sampler maintains a copy of the Chain of Custody form and a copy is retained for the project file. Each sample container must also be labeled with an indelible marker with a minimum of the following information:

- Sample identification number
- Project name/location
- Analysis to be performed
- Date and time of collection
- Sampler's initials

A copy of the completed Chain of Custody form is returned by the laboratory with the analytical results.

1.10.3 Field Log Book

Field log books must be bound and should have consecutively numbered, water resistant pages. All pertinent information regarding the site, project and sampling procedures must be documented. Notations should be made in log book fashion, noting the time and date of all entries. Information recorded in the log book should include, but is not necessarily be limited to, the following:

The first page of the log contains the following information:

- Project name and address
- Name, address and phone number of field contact
- Name, address and phone number of subcontractors and contact persons

Daily entries are made for the following information:

- Purpose of sampling
- Sampling location
- Number and volume(s) of sample(s) collected
- Description of sample location and sampling methodology
- Date and time of sample collection and personnel arrival and departure
- Geologic description of each sample interval, if applicable
- Collector's sample identification number(s)
- Sample distribution and method of storage and transportation
- References, such as sketches of the sample location or photographs of sample collection with dimensions
- Field observations such as weather conditions, visual signs of staining and/or stressed vegetation
- Signature of personnel responsible for completing log entries

1.11 Calibration Procedures and Preventive Maintenance

The following information regarding equipment will be maintained at the project site if monitoring is deemed necessary for health and safety purposes:

1. Equipment calibration and operating procedures which will include provisions for documentation of frequency, conditions, standards and records reflecting the

calibration procedures, methods of usage and repair history of the measurement system. Calibration of field equipment will be completed daily at the sampling site so that any background contamination can be taken into consideration and the instrument calibrated accordingly.

2. A schedule of preventive maintenance tasks, consistent with the instrument manufacturer's specific operation manuals, that will be carried out to minimize down time of the equipment.

3. Critical spare parts, necessary tools and manuals will be on hand to facilitate equipment maintenance and repair.

1.12 Performance of Field Audits

During field activities, if determined to be necessary, the QA/QC Officer will accompany sampling personnel into the field, verify that the site sampling program is being properly implemented and detect and define problems so that resolutions can be determined and implemented. All findings will be documented and provided to the Field Operations Manager.

1.13 Control and Disposal of Contaminated Material

Contaminated materials generated during this field program will primarily be limited to spent protective clothing, spent disposable sampling equipment and wastes generated as a result of equipment decontamination.

Any contaminated materials generated as a result of the field program will be contained in U.S. Department of Transportation (DOT) 55-gallon drums and staged in a designated area for subsequent waste characterization. Each drum will be identified by the type of material contained.

Decisions regarding the disposal of drummed material will be made, at least in part, based on the analytical results of the samples collected during this program. At the present time, there is no provision for separate analysis of contained material.

Decontamination water and sediment, if any, will be contained in 55-gallon drums. A decision regarding disposal of this material will be made following receipt of the sample results. Analysis of decontamination water/sediment may be required for proper management.

DOT-approved 55-gallon drums will be available for disposal of spent protective clothing and disposable sampling equipment, if any. These drums will be marked and labeled as containing personnel protective and sampling equipment. These drums will not be sampled. All drums will be sealed and staged on site to await proper off-site disposal.

1.14 Data Validation

Data validation will be performed in order to define and document analytical data quality in accordance with NYSDEC requirements that project data must be of known and acceptable quality. The analytical and validation processes will be conducted in conformance with the July 2005 NYSDEC ASP and USEPA CLP Statements of Work (SOW) dated June 1999 and January 2000. The validation will be performed by an individual meeting the qualification requirements for a data validator for the NYSDEC.

The USEPA Functional Guidelines for Evaluating Organics and Inorganics Analyses for the CLP will be used for the data validation process. The data validation process will ensure that all analytical requirements specific to this sampling program, including this Quality Assurance Project Plan, are followed. Procedures will address validation of routine analytical services (RAS) results based on the NYSDEC Target Compound List (TCL) for standard sample matrices.

The data validation process will provide an informed assessment of the laboratory's performance based upon contractual requirements and applicable analytical criteria. The report generated as a result of the data validation process will provide a base upon which the usefulness of the data can be evaluated by the end user of the analytical results. The overall level of effort and specific data validation procedure to be used will be equivalent to a "20% validation" of all analytical data in any given data package.

During the review process, it will be determined whether the contractually-required laboratory submittals for sample results are supported by sufficient back-up data and QA/QC results to enable the reviewer to conclusively determine the quality of data. Each data package will be checked for completeness and technical adequacy of the data. Upon completion of the review, the reviewer will develop a QA/QC data validation report for each analytical data package.

"Qualified" analytical results for any one field sample are established and presented based on the results of specific QC samples and procedures associated with its sample analysis group or batch. Precision and accuracy criteria (i.e., QC acceptance limits) are used in determining the need for qualifying data. Where test data have been reduced by the laboratory, the method of reduction will be described in the report. Reduction of laboratory measurements and laboratory reporting of analytical parameters shall be verified in accordance with the procedures specified in the NYSDEC program documents for each analytical method (i.e., recreate laboratory calculations and data reporting in accordance with the method specific procedure). The standard operating guideline manuals and any special analytical methodology required are expected to specify documentation needs and technical criteria and will be taken into consideration in the validation process. Copies of the complete ASP Category B deliverables will be submitted to the NYSDEC for review. Copies of the validation report, including the laboratory result data report sheets, with any qualifiers deemed appropriate by the data reviewer, and a supplementary field QC sample result summary statement, will be submitted to the NYSDEC, if requested.

Examples of standard organic and inorganic data validation reporting formats and completeness inventory lists which are proposed for use on this project are contained in Exhibit B. These report forms will be modified as necessary and made appropriate for any project specific or NYSDEC requirements.

The following is a description of the two-phased approach to data validation planned to be used on this project. The first phase is called "checklisting" and the second phase is the analytical quality review, with the former being a subset of the latter.

- Checklisting - The data package is checked for correct submission of the contract required deliverables, correct transcription from the raw data to the required deliverable summary forms and proper calculation of a number of parameters.

- Analytical Quality Review - The data package is closely examined to recreate the analytical process and verify that proper and acceptable analytical techniques have been performed. Additionally, overall data quality and laboratory performance is evaluated by applying the appropriate data quality criteria to the data to reflect conformance with the specified, accepted QA/QC standards and contractual requirements.

At the completion of the data validation, a Summary Data Validation/Usability Report will be prepared and submitted to the NYSDEC, if requested.

1.15 Performance and System Audits

A NYSDOH ELAP certified laboratory, which has satisfactorily completed performance audits and performance evaluation samples, shall be used on this project.

1.16 Corrective Action

A NYSDOH ELAP certified laboratory shall meet the requirements for corrective action protocols, including sample "cleanup" to attempt to eliminate/mitigate "matrix interference." Sample "cleanup" is not required for samples to be analyzed for volatile organic compounds or RCRA metals. However, sample "cleanup" is required for samples to be analyzed for semivolatile organic compounds.

1.17 Duplicate

The primary purpose of a duplicate sample is to determine the analytical precision of the laboratory contracted to perform the sample analyses. A duplicate sample is collected in the same manner as one of the environmental samples and analyzed for the same constituents. In this manner, the precision of the laboratory can be checked. One duplicate of a rinse water sample will be collected and analyzed during decontamination of each SWMU identified in this decontamination program.

1.18 Trip Blanks (Travel Blanks)

The primary purpose of this type of blank is to detect additional sources of contamination that might potentially influence contaminant values reported in actual samples both quantitatively and qualitatively. The following have been identified as potential sources of contamination:

- Laboratory reagent water
- Sample containers
- Cross contamination in shipment
- Ambient air or contact with analytical instrumentation during preparation and analysis at the laboratory
- Laboratory reagents used in analytical procedures

A trip blank consists of a set of 40 ml sample vials filled at the laboratory with laboratory demonstrated analyte free water. Trip blanks should be handled, transported and analyzed in the same manner as the samples acquired that day, except that the sample containers themselves are not opened in the field. Rather, they just travel with the sample cooler. Trip blanks must accompany samples at a rate of one per shipment. The temperature of the trip blanks must be maintained at 4°C while on-site and during shipment. Trip blanks must return to the laboratory with the same set of bottles they accompanied in the field.

The purpose of a trip blank is to control sample bottle preparation and blank water quality as well as sample handling. Thus, the trip blank travels to the site with the empty sample bottles and back from the site with the collected samples in an effort to simulate sample handling conditions. Contaminated trip blanks may indicate inadequate bottle cleaning or blank water of questionable quality. Trip blanks are implemented only when collecting water samples, and analyzed for volatile organic compounds only.

EXHIBIT A

DETECTION LIMITS

Volatiles Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL) for Aqueous Samples

	Volatile Analyte	CAS Number	Trace Water By SIM (µg/L)	Trace Level Water (µg/L)	Low Level Water (µg/L)
1.	Dichlorodifluoromethane	75-71-8		0.50	5.0
2.	Chloromethane	74-87-3		0.50	5.0
3.	Vinyl Chloride	75-01-4		0.50	5.0
4.	Bromomethane	74-83-9		0.50	5.0
5.	Chloroethane	75-00-3		0.50	5.0
6.	Trichlorofluoromethane	75-69-4		0.50	5.0
7.	1,1-Dichloroethene	75-35-4		0.50	5.0
8.	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		0.50	5.0
9.	Acetone	67-64-1		5.0	10.0
10.	Carbon Disulfide	75-15-0		0.50	5.0
11.	Methyl Acetate	79-20-9		0.50	5.0
12.	Methylene chloride	75-09-2		0.50	5.0
13.	trans-1,2-Dichloroethene	156-60-5		0.50	5.0
14.	Methyl tert-Butyl Ether	1634-04-4		0.50	5.0
15.	1,1-Dichloroethane	75-34-3		0.50	5.0
16.	cis-1,2-Dichloroethene	156-59-2		0.50	5.0
17.	2-Butanone	78-93-3		5.0	10.0
18.	Bromochloromethane	74-97-5		0.50	5.0
19.	Chloroform	67-66-3		0.50	5.0
20.	1,1,1-Trichloroethane	71-55-6		0.50	5.0
21.	Cyclohexane	110-82-7		0.50	5.0
22.	Carbon tetrachloride	56-23-5		0.50	5.0
23.	Benzene	71-43-2		0.50	5.0
24.	1,2-Dichloroethane	107-06-2		0.50	5.0
25.	1,4-Dioxane	123-91-1	1.0	25	125
26.	Trichloroethane	79-01-6		0.50	5.0

Volatiles Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL) for Aqueous Samples (Continued)

	Volatile Analyte	CAS Number	Trace Water By SIM (µg/L)	Trace Level Water (µg/L)	Low Level Water (µg/L)
27.	Methylcyclohexane	108-87-2		0.50	5.0
28.	1,2-Dichloropropane	78-87-5		0.50	5.0
29.	Bromodichloromethane	75-27-4		0.50	5.0
30.	cis-1,3-Dichloropropene	10061-01-5		0.50	5.0
31.	4-methyl-2-pentanone	108-10-1		5.0	10.0
32.	Toluene	108-88-3		0.50	5.0
33.	Trans-1,3-Dichloropropene	10061-02-6		0.50	5.0
34.	1,1,2-Trichloroethane	79-00-5		0.50	5.0
35.	Tetrachloroethene	127-18-4		0.50	5.0
36.	2-Hexanone	591-78-6		5.0	10.0
37.	Dibromochloromethane	124-48-1		0.50	5.0
38.	1,2-Dibromoethane	106-93-4	0.05	0.50	5.0
39.	Chlorobenzene	108-90-7		0.50	5.0
40.	Ethylbenzene	100-41-4		0.50	5.0
41.	Xylenes (Total)	1330-20-7		0.50	5.0
42.	Styrene	100-42-5		0.50	5.0
43.	Bromoform	75-25-2		0.50	5.0
44.	Isopropylbenzene	98-82-8		0.50	5.0
45.	1,1,2,2-Tetrachloroethane	79-34-5		0.50	5.0
46.	1,3-Dichlorobenzene	541-73-1		0.50	5.0
47.	1,4-Dichlorobenzene	106-46-7		0.50	5.0
48.	1,2-Dichlorobenzene	95-50-1		0.50	5.0
49.	1,2-Dibromo-3-chloropropane	96-12-8	0.05	0.50	5.0
50.	1,2,4-Trichlorobenzene	120-82-1		0.50	5.0
51.	1,2,3-Trichlorobenzene	87-61-6		0.50	5.0

EXHIBIT B

DATA VALIDATION FORMS

DATA VALIDATION – ORGANICS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

I. Data Deliverable Requirements

A. Legible	Yes	No
B. Paginated	Yes	No
C. Arranged in order	Yes	No
D. Consistent dates	Yes	No
E. Case Narrative	Yes	No
F. Chain-of-Custody Record	Yes	No
G. Sample Data Complete	Yes	No
H. Standard Date Complete	Yes	No
I. Raw QC Data Complete	Yes	No

Comments: _____

DATA VALIDATION – ORGANICS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?

DATA VALIDATION – ORGANICS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

Fraction: _____

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

DATA VALIDATION – ORGANICS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

Fraction: _____

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: _____

A. Standard Data Files

Standard 1 ID: _____ Conc: _____

Standard 2 ID: _____ Conc: _____

Standard 3 ID: _____ Conc: _____

Standard 4 ID: _____ Conc: _____

Standard 5 ID: _____ Conc: _____

B. 1. All SPCC met Criteria ?

Yes No

2. Calculate a SPCC average RRF

Comments: _____

_____

_____

_____

_____

_____

_____

_____

DATA VALIDATION – ORGANICS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

Fraction: _____ Date of Calibration: _____

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes No

Comments: _____

_____

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes No

2. Was the calibration conducted within 12 hours of the tune

Yes No

Comments: _____

_____

_____

D. Overall assessment of the initial calibration:
(list the associated samples)

_____

_____

_____

DATA VALIDATION – ORGANICS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

Fraction: _____

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: _____

Date of Continuing Calibration: _____ File ID: _____

A. 1. All SPCC met criteria ?

Yes No

Calculate a SPCC RRF

Comments: _____

_____

2. All CCC met criteria ?

Yes No

Calculate a CCC % D

Comments: _____

_____

B. Overall assessment of Continuing Calibration
(list associated samples)

_____

_____

DATA VALIDATION – ORGANICS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

Fraction: _____

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes No

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

Fraction: _____

IX. Blank Summary

Date/Time of Analysis: _____ File ID: _____

Compound	Concentration	≤ CROL	Comments

List the samples associated with this method blank.

_____

_____

_____

_____

DATA VALIDATION – ORGANICS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

Fraction: _____

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes No

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

Fraction: _____

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: _____ Matrix: _____

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes No

If No, please note below.

_____

_____

_____

_____

DATA VALIDATION – METALS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?

DATA VALIDATION – METALS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes No

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes No

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes No

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes No

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes No

If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes No

2. Were all the analytes below the CRDL in the method blank?

   Yes No

Comments:

_____

_____

_____

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes No

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes No

Comments:

_____

_____

_____

DATA VALIDATION – METALS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes No

   Comments:

_____

_____

_____

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   Yes No

   Comments:

_____

_____

_____

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes No

   Comments:

_____

_____

_____

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes No

   If "No", note analytes _____

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes No

   Comments:

_____

_____

_____

2. Were the serial dilution differences within the contract specified limits of ±w 10%?

   Yes No

   Comments:

_____

_____

_____

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes No

   Comments:

_____

_____

_____

DATA VALIDATION – METALS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes No

   Comments:

_____

_____

_____

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes No

   If "No", not analytes _____

DATA VALIDATION – METALS

Site Name: _____ Laboratory Name: _____

Reviewer: _____ Date of Review: _____

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes No

   Comments:

_____

_____

_____

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes No

   Comments:

_____

_____

_____

APPENDIX B

DAILY FIELD ACTIVITY REPORTS

William F. Cosulich Associates, P.C.
Environmental Engineers and Scientists

Date: 3/31/10

DAILY FIELD ACTIVITY REPORT

Report Number: _____ Project Number: 2515-I

Field Log Book Page Number: _____

Project: IBM EFK Decontamination of SWMU 208 in B/322 W

Address: Lime Kiln Road, Hopewell Junction, New York

Weather: (AM) - Rainfall: (AM) - Inches
(PM) - (PM) - Inches

Temperature: (AM) - °F Wind Speed: (AM) - MPH Wind Direction: (AM) -
(PM) - °F (PM) - MPH (PM) -

Site Condition: Secure

Personnel On Site:	Name	Affiliation	Arrival Time	Departure Time
	Brian Werner	WFC	--	--

Subcontractor Work Commencement: (AM) - (PM) -

Subcontractor Work Completion: (AM) - (PM) -

William F. Cosulich Associates, P.C.
Environmental Engineers and Scientists

Date: 3/31/10

DAILY FIELD ACTIVITY REPORT

Work Performed by subcontractor(s) (includes equipment and labor breakdown):
Below you will find a summarized description of the work activities completed by Techtron personnel pertaining to the decontamination of the SWMU 208 at B/322 W. WFC was not on-site during the decontamination process, but was informed daily on the work activities through conversions with Pizzagalli personnel.

March 31, 2010
Brian W. from WFC spoke with Steve C. from Pizzagalli about the decontamination of the SWMU 208 located outside of B/322 W. Decontamination of SWMU 208 commenced on March 31, 2010. Techtron opened the manway of Tank 208, assessed the conditions of the tank commenced with the decontamination activities.

April 1, 2010
Brian W. from WFC spoke with Steve C. from Pizzagalli about the decontamination of the SWMU 208 located outside of B/322 W. Decontamination associated with SWMU 208 continued on April 1, 2010. Techtron pumped the rust/mud-like material into the tanker truck for proper off-site disposal. The interior of the tank was rinsed and the rinse water was pumped into the tanker truck. The drain lines in B/322 W that discharged to Tank 208 were flushed with Z-Green and water. To further assist with the decontamination process a mixture of ZEP Z-Green detergent and water was pumped into the tank and allowed to sit with the tank over weekend to assist with the decontamination process.

April 5, 2010
Brian W. from WFC spoke with Steve C. from Pizzagalli about the decontamination of the SWMU 208 located outside of B/322 W. Decontamination associated with SWMU 208 continued on April 1, 2010. The interior of SWMU 208 was pumped out using a tanker truck. The water accumulated within the containment dike due groundwater infiltration and corrosion was pumped into the tanker truck. The interior of the SWMU was decontaminated using a mixture of ZEP Z-Green detergent and water. After the cleaning was completed Techtron rinsed the interior Tank 208 to remove the surfactant and the rinse water was pumped to the tanker truck. SWMU 208 was ready to be sampled. However, Techtron would not be available to assist with sampling activities until Thursday. Sampling of SWMU 208 was scheduled for Thursday, April 8, 2010.

William F. Cosulich Associates, P.C.
Environmental Engineers and Scientists

Date: 3/31/10

DAILY FIELD ACTIVITY REPORT

General work performed today by WFC Engineers:
See the attached work description.

List specific inspection(s) performed and results (include problems and corrective actions):
See the attached work description.

List type and location of tests performed and results (include equipment used and monitoring results):
See the attached work description.

Verbal comments received from subcontractor (include construction and testing problems, and recommendations/resulting actions):
See the attached work description.

Prepared by: Brian Werner

Reviewed by: _____

William F. Cosulich Associates, P.C.
Environmental Engineers and Scientists

Date: 4/8/10

DAILY FIELD ACTIVITY REPORT

Report Number: _____ Project Number: 2515-I

Field Log Book Page Number: _____

Project: IBM EFK Decontamination of SWMU 208 in B/322 W

Address: Lime Kiln Road, Hopewell Junction, New York

Weather: (AM) Sunny Rainfall: (AM) - Inches
(PM) - (PM) - Inches

Temperature: (AM) 60s °F Wind Speed: (AM) 3 MPH Wind Direction: (AM) N
(PM) - °F (PM) - MPH (PM) -

Site Condition: Secure

Personnel On Site:	Name	Affiliation	Arrival Time	Departure Time
	Brian Werner	WFC	8:50	11:05
	Technician	Techtron	--	--
	Technician	Techtron	--	--

Subcontractor Work Commencement: (AM) - (PM) -

Subcontractor Work Completion: (AM) - (PM) -

William F. Cosulich Associates, P.C.
Environmental Engineers and Scientists

Date: 4/8/10

DAILY FIELD ACTIVITY REPORT

Work Performed by subcontractor(s) (includes equipment and labor breakdown):
Brian W. from WFC arrived at the EnviroTest Laboratory at 7:55 to pickup sample containers. At 8:20 picked up supplies from the lab. WFC arrived on-site at 8:50 and checked within security. The objective of today was to collect rinse samples from Tank 208 just outside of B/322 W. Called Steve C. from Pizzagalli to inform him WFC on-site and he indicated Techtron would be over to the Tank 208 shortly. The trip blanks were placed in the cooler on ice. Tank 208 signage indicated the tank name was the solvent spill system, total capacity 1,300-gallon, working capacity 1,268 gallon, stainless steel, utilized to stored mixed waste solvent. WFC made up sand bags to use as a berm within the tank to assist with collecting the rinse samples. Techtron personnel on-site and setting up to conduct a confined space entry. The tank is located just outside of B/322 W within concrete encased containment dike. The actually secondary containment dike is stainless steel that enclosed within concrete. At the surface there is an manhole to access the vault and a port to pump out the tank as needed. Techtron opened the manhole cover to access the tank and approximately 1 to 1.5 inches of water was noted within the containment dike. The containment and the exterior of the tank appear to be severely rusted. Ground water infiltration and leaking lines have allowed water to pool within the containment dike. According to personnel the tank has not been service for approximately 5 years or longer. Techtron has had come pump out the containment dike periodically due to water pooling within the dike. The pipe to pump out the tank is deteriorated. The interior of the tank had scaling after the decontamination process some scaling still present. According to Techtron personnel, no solvent odor was coming from the tank just a musty smell from the stagnant water in the area. Techtron used the water source from the treated water line off of the eyewash to decontaminate Tank 208. The discharge lines to Tank 208 located in B/322 W were flushed. At 10:04 EMS IBM personnel on-site to screened Tank 208 and cleared Techtron to conduct the confined space entry. WFC collected a rinse blank sample, B322-RB-1, at 10:10 from the treated water line of the eyewash in B/322. The samples were labeled and placed in the cooler on ice. Techtron personnel set up to enter the tank in tyvek and APR. Prior to sampling WFC had Techtron personnel check the interior of the tank for any holes and personnel indicated no visible holes were noted. Techtron used the sand bags to create a berm within Tank 208 to pool the water for the rinse samples. At 10:25 poured in approximately less than 2 gallons of organic free distilled water supplied by the laboratory. Let the water sit within the tank for approximately 10 minutes, some of the water coming out from the bermed area. After 10 minutes Techtron scooped the rinse water into an unpreserved plastic container and transferred into a larger unpreserved plastic container. WFC transferred the sample into the appropriate containers. All sample containers were supplied by the laboratory. The rinse sample for Tank 208, MWS-208-R-1, was collected at 10:40. In addition, a blind duplicate sample, DUP040810, was collected from Tank 208. The samples were labeled and placed within the cooler on ice. The crew packed up and closed up the tank. WFC left site at 11:05 and headed to the lab to drop off the samples. At 11:20 WFC relinquished the samples to lab personnel and left the lab at 11:30.

William F. Cosulich Associates, P.C.
Environmental Engineers and Scientists

Date: 4/8/10

DAILY FIELD ACTIVITY REPORT

General work performed today by WFC Engineers:
See the attached work description.

List specific inspection(s) performed and results (include problems and corrective actions):
See the attached work description.

List type and location of tests performed and results (include equipment used and monitoring results):
See the attached work description.

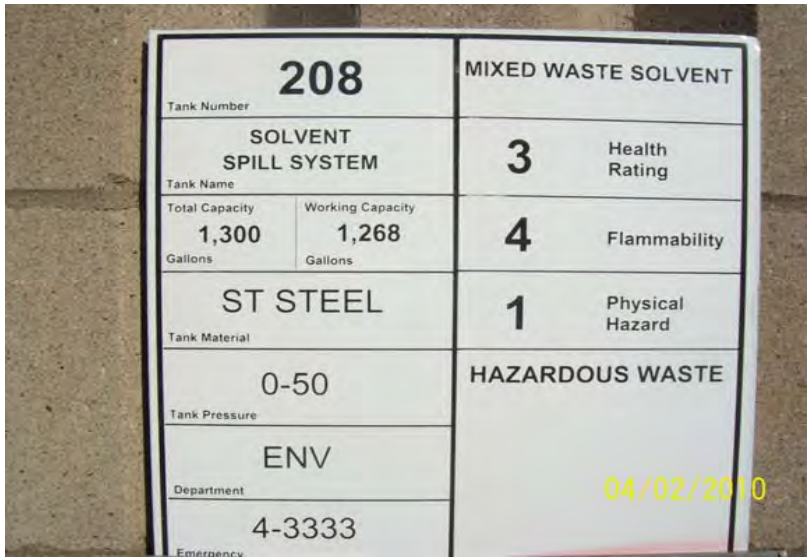
Verbal comments received from subcontractor (include construction and testing problems, and recommendations/resulting actions):
See the attached work description.

Prepared by: Brian Werner

Reviewed by: _____

APPENDIX C

PHOTOGRAPHIC LOG



Tank 208 sign

Manhole to access Tank 208 and clean out port to pump out Tank 208.

Area of Tank 208 located at B/322 W.

Top of Tank 208

Deteriorated clean out pipe associated with Tank 208.

Interior of Tank 208 after the tank was decontaminated.

Interior of Tank 208 after the tank was decontaminated.

Interior of Tank 208 after the tank was decontaminated.

Water noted pooling within the containment dike of Tank 208.

Rusted and corroded conditions within noted the stainless steel containment dike of Tank 208.

Rusted and corroded conditions within noted the stainless steel containment dike of Tank 208.

The water source used to decontaminate Tank 208 located in B/322.

The water source used to decontaminate Tank 208 located in B/322.

APPENDIX D

CHAIN OF CUSTODY FORMS

EnviroTest Laboratories Inc.

CHAIN OF CUSTODY

315 Fullerton Avenue
Newburgh, NY 12550
TEL (845) 562-0890
FAX (845) 562-0841

CUSTOMER NAME	William F. Cosulich
ADDRESS	330 Crossways Park Drive
CITY, STATE, ZIP	Woodbury, NY 11797
NAME OF CONTACT / PHONE NO.	Robbin Petrella 516-364-9890 Ext. 3049
PROJECT LOCATION	IBM Tank 208
PROJECT NUMBER / PO NO.	2515 - I

NOTE: SAMPLE TEMPERATURE UPON RECEIPT MUST BE 4° ±2°C.

REPORT TYPE
STANDARD ☑ ISRA ☐
NJ REG ☐
NYASP A ☐ B ☑ CLP ☐
OTHER ____

TURNAROUND
☐ NORMAL ____
☑ QUICK 5-Day
☐ VERBAL ____

REPORT # (Lab Use Only)

SAMPLE TEMP. 4 °C
SAMPLE REC'D ON ICE ☑ Y ☐ N
ph CHECK ☐ Y ☑ N
CHLORINE (RESIDUAL) ☐ Y ☑ N
REVIEWED BY

NY PUBLIC WATER SUPPLIES
SOURCE ID
ELAP TYPE
FEDERAL ID

Matrix
DW = DRINKING WATER S = SOIL O = OIL
WW = WASTE WATER SL = SLUDGE GW = GROUND WATER
RW = Rinse Water

ETL #	SAMPLING DATE	SAMPLING TIME AM PM	COMP	GRAB	MATRIX	CLIENT I.D.	Total Number of Containers	40ml Glass HCL	Liter Amber HCL	250ml Amber Sulfuric	Liter Amber Organic Washed	250ml Plastic Nitric Acid	250ml Plastic Sodium Hydroxide	Liter Plastic	Liter Plastic Sulfuric Acid	250ml Plastic	125ml Plastic Sterile	8 oz. Soil	2 oz. Qorpak	250ml Plastic NAOH / ZN ACC	ANALYSIS REQUESTED
	4/8/10	—			—	Trip Blank	2	X													VOCs 8260
	4/8/10	10:40		X	RW	MWS-208-R-1	3	X													VOCs 8260
	4/8/10	—		X	RW	DUP040810	3	X													VOCs 8260
	4/8/10	10:10		X	RW	B322-RB-1	3	X													VOCs 8260

SAMPLES SUBMITTED FOR ANALYSIS WILL BE SUBJECT TO THE ETL TERMS AND CONDITIONS OF SALE UNLESS ALTERNATE TERMS ARE AGREED IN WRITING.

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
Brian Wilcox	WFC	4/8/10	11:20				
SAMPLED BY: Brian Wilcox	WFC	4/8/10	10:40A				
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
				[illegible]	ETL	4/8/10	11:20A

COMMENTS ____

NYSDOH 10142 NJDEP NY015 CTDOPH PH-0554 EPA NY00049

APPENDIX E

LABORATORY ANALYTICAL RESULTS

ANALYTICAL REPORT

Job Number: 420-34399-1

SDG Number: 25215-I IBM Tank 208

Job Description: William F. Cosulich

For:
William F. Cosulich Associates
330 Crossways Park Drive
Woodbury, NY 11797

Attention: Robbin A. Petrella

Alicia M Labare
Senior Customer Service Representative
alabare@envirotestlaboratories.com
06/14/2010
Revision: 1

cc: Brian Werner

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. EnviroTest Laboratories Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our laboratory. All questions regarding this report should be directed to the EnviroTest Customer Service Representative.

EnviroTest Laboratories, Inc. Certifications and Approvals: NELAP Accredited, NYSDOH 10142, NJDEP NY015, CTDOPH PH-0554, EPA NY00049.

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

GC/MS VOA
Method 8260B: The laboratory control standard (LCS) for batch 38537 exceeded control limits for the analytes indicated by an asterisk (*) on the results form. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported with confidence of no false negatives.

No other analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

EXECUTIVE SUMMARY - Detections

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
420-34399-2	**MWS-208-R-1**				
Acetone		4.4	1.0	ug/L	8260B
420-34399-3	**DUP040810**				
Acetone		5.2	1.0	ug/L	8260B
420-34399-4	**B322-RB-1**				
Acetone		3.4	1.0	ug/L	8260B
Chloroform		19	1.0	ug/L	8260B

METHOD SUMMARY

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS	EnvTest	SW846 8260B	
Purge-and-Trap	EnvTest		SW846 5030B

Lab References:

EnvTest = EnviroTest

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Method	Analyst	Analyst ID
SW846 8260B	Andersen, Eric C	ECA

SAMPLE SUMMARY

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
420-34399-1	Trip Blank	Water	04/08/2010 0000	04/08/2010 1120
420-34399-2	MWS-208-R-1	Water	04/08/2010 1040	04/08/2010 1120
420-34399-3	DUP040810	Water	04/08/2010 0000	04/08/2010 1120
420-34399-4	B322-RB-1	Water	04/08/2010 1010	04/08/2010 1120

SAMPLE RESULTS

Robbin A. Petrella
William F. Cosulich Associates
330 Crossways Park Drive
Woodbury, NY 11797

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Client Sample ID: Trip Blank
Lab Sample ID: 420-34399-1

Date Sampled: 04/08/2010 0000
Date Received: 04/08/2010 1120
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	RL	Dilution
Method: 8260B			Date Analyzed:	04/12/2010 1721		
Prep Method: 5030B			Date Prepared:	04/12/2010 1721		
1,1,1,2-Tetrachloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1,1-Trichloroethane	1.0	U *	ug/L	1.0	1.0	1.0
1,1,2,2-Tetrachloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1,2-Trichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0
1,2,3-Trichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2,3-Trichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,2,4-Trichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2,4-Trimethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dibromo-3-Chloropropane	5.0	U	ug/L	5.0	5.0	1.0
1,2-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,3,5-Trimethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
1,3-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,3-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,4-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
2,2-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
2-Chlorotoluene	1.0	U	ug/L	1.0	1.0	1.0
2-Hexanone	1.0	U	ug/L	1.0	1.0	1.0
4-Chlorotoluene	1.0	U	ug/L	1.0	1.0	1.0
4-Isopropyltoluene	1.0	U	ug/L	1.0	1.0	1.0
Acetone	1.0	U	ug/L	1.0	1.0	1.0
Benzene	1.0	U	ug/L	1.0	1.0	1.0
Bromobenzene	1.0	U	ug/L	1.0	1.0	1.0
Bromoform	1.0	U	ug/L	1.0	1.0	1.0
Bromomethane	1.0	U	ug/L	1.0	1.0	1.0
Carbon disulfide	1.0	U	ug/L	1.0	1.0	1.0
Carbon tetrachloride	1.0	U	ug/L	1.0	1.0	1.0
Chlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
Bromochloromethane	1.0	U	ug/L	1.0	1.0	1.0
Dibromochloromethane	1.0	U	ug/L	1.0	1.0	1.0
Chloroethane	1.0	U	ug/L	1.0	1.0	1.0
Chloroform	1.0	U	ug/L	1.0	1.0	1.0
Chloromethane	1.0	U	ug/L	1.0	1.0	1.0
cis-1,2-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
cis-1,3-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0

Robbin A. Petrella
William F. Cosulich Associates
330 Crossways Park Drive
Woodbury, NY 11797

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Client Sample ID: Trip Blank
Lab Sample ID: 420-34399-1

Date Sampled: 04/08/2010 0000
Date Received: 04/08/2010 1120
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	RL	Dilution
Dibromomethane	1.0	U	ug/L	1.0	1.0	1.0
Bromodichloromethane	1.0	U	ug/L	1.0	1.0	1.0
Dichlorodifluoromethane	1.0	U	ug/L	1.0	1.0	1.0
Ethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Hexachlorobutadiene	1.0	U	ug/L	1.0	1.0	1.0
Iodomethane	1.0	U	ug/L	1.0	1.0	1.0
Isopropylbenzene	1.0	U	ug/L	1.0	1.0	1.0
m-Xylene & p-Xylene	1.0	U	ug/L	1.0	1.0	1.0
2-Butanone	1.0	U	ug/L	1.0	1.0	1.0
4-Methyl-2-pentanone	1.0	U	ug/L	1.0	1.0	1.0
Methyl tert-butyl ether	1.0	U	ug/L	1.0	1.0	1.0
Methylene Chloride	1.0	U	ug/L	1.0	1.0	1.0
n-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
N-Propylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Naphthalene	5.0	U	ug/L	5.0	5.0	1.0
o-Xylene	1.0	U	ug/L	1.0	1.0	1.0
sec-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Styrene	1.0	U	ug/L	1.0	1.0	1.0
tert-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Xylenes, Total	1.0	U	ug/L	1.0	1.0	1.0
Vinyl chloride	1.0	U	ug/L	1.0	1.0	1.0
Vinyl acetate	1.0	U	ug/L	1.0	1.0	1.0
Trichlorofluoromethane	1.0	U	ug/L	1.0	1.0	1.0
Trichloroethene	1.0	U	ug/L	1.0	1.0	1.0
trans-1,3-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0
trans-1,2-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
Toluene	1.0	U	ug/L	1.0	1.0	1.0
Tetrachloroethene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dibromoethane	1.0	U	ug/L	1.0	1.0	1.0

Surrogate			Acceptance Limits
4-Bromofluorobenzene	77	%	74 - 118
Toluene-d8 (Surr)	86	%	74 - 129
1,2-Dichloroethane-d4 (Surr)	87	%	77 - 115

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William F. Cosulich Associates
330 Crossways Park Drive
Woodbury, NY 11797

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Client Sample ID: MWS-208-R-1
Lab Sample ID: 420-34399-2

Date Sampled: 04/08/2010 1040
Date Received: 04/08/2010 1120
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	RL	Dilution
Method: 8260B			Date Analyzed:	04/12/2010 1749		
Prep Method: 5030B			Date Prepared:	04/12/2010 1749		
1,1,1,2-Tetrachloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1,1-Trichloroethane	1.0	U *	ug/L	1.0	1.0	1.0
1,1,2,2-Tetrachloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1,2-Trichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0
1,2,3-Trichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2,3-Trichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,2,4-Trichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2,4-Trimethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dibromo-3-Chloropropane	5.0	U	ug/L	5.0	5.0	1.0
1,2-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,3,5-Trimethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
1,3-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,3-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,4-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
2,2-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
2-Chlorotoluene	1.0	U	ug/L	1.0	1.0	1.0
2-Hexanone	1.0	U	ug/L	1.0	1.0	1.0
4-Chlorotoluene	1.0	U	ug/L	1.0	1.0	1.0
4-Isopropyltoluene	1.0	U	ug/L	1.0	1.0	1.0
Acetone	4.4		ug/L	1.0	1.0	1.0
Benzene	1.0	U	ug/L	1.0	1.0	1.0
Bromobenzene	1.0	U	ug/L	1.0	1.0	1.0
Bromoform	1.0	U	ug/L	1.0	1.0	1.0
Bromomethane	1.0	U	ug/L	1.0	1.0	1.0
Carbon disulfide	1.0	U	ug/L	1.0	1.0	1.0
Carbon tetrachloride	1.0	U	ug/L	1.0	1.0	1.0
Chlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
Bromochloromethane	1.0	U	ug/L	1.0	1.0	1.0
Dibromochloromethane	1.0	U	ug/L	1.0	1.0	1.0
Chloroethane	1.0	U	ug/L	1.0	1.0	1.0
Chloroform	1.0	U	ug/L	1.0	1.0	1.0
Chloromethane	1.0	U	ug/L	1.0	1.0	1.0
cis-1,2-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
cis-1,3-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0

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Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Client Sample ID: MWS-208-R-1
Lab Sample ID: 420-34399-2

Date Sampled: 04/08/2010 1040
Date Received: 04/08/2010 1120
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	RL	Dilution
Dibromomethane	1.0	U	ug/L	1.0	1.0	1.0
Bromodichloromethane	1.0	U	ug/L	1.0	1.0	1.0
Dichlorodifluoromethane	1.0	U	ug/L	1.0	1.0	1.0
Ethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Hexachlorobutadiene	1.0	U	ug/L	1.0	1.0	1.0
Iodomethane	1.0	U	ug/L	1.0	1.0	1.0
Isopropylbenzene	1.0	U	ug/L	1.0	1.0	1.0
m-Xylene & p-Xylene	1.0	U	ug/L	1.0	1.0	1.0
2-Butanone	1.0	U	ug/L	1.0	1.0	1.0
4-Methyl-2-pentanone	1.0	U	ug/L	1.0	1.0	1.0
Methyl tert-butyl ether	1.0	U	ug/L	1.0	1.0	1.0
Methylene Chloride	1.0	U	ug/L	1.0	1.0	1.0
n-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
N-Propylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Naphthalene	5.0	U	ug/L	5.0	5.0	1.0
o-Xylene	1.0	U	ug/L	1.0	1.0	1.0
sec-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Styrene	1.0	U	ug/L	1.0	1.0	1.0
tert-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Xylenes, Total	1.0	U	ug/L	1.0	1.0	1.0
Vinyl chloride	1.0	U	ug/L	1.0	1.0	1.0
Vinyl acetate	1.0	U	ug/L	1.0	1.0	1.0
Trichlorofluoromethane	1.0	U	ug/L	1.0	1.0	1.0
Trichloroethene	1.0	U	ug/L	1.0	1.0	1.0
trans-1,3-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0
trans-1,2-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
Toluene	1.0	U	ug/L	1.0	1.0	1.0
Tetrachloroethene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dibromoethane	1.0	U	ug/L	1.0	1.0	1.0

Surrogate			Acceptance Limits
4-Bromofluorobenzene	77	%	74 - 118
Toluene-d8 (Surr)	98	%	74 - 129
1,2-Dichloroethane-d4 (Surr)	88	%	77 - 115

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Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Client Sample ID: DUP040810
Lab Sample ID: 420-34399-3

Date Sampled: 04/08/2010 0000
Date Received: 04/08/2010 1120
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	RL	Dilution
Method: 8260B			Date Analyzed:	04/12/2010 1816		
Prep Method: 5030B			Date Prepared:	04/12/2010 1816		
1,1,1,2-Tetrachloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1,1-Trichloroethane	1.0	U *	ug/L	1.0	1.0	1.0
1,1,2,2-Tetrachloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1,2-Trichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0
1,2,3-Trichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2,3-Trichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,2,4-Trichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2,4-Trimethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dibromo-3-Chloropropane	5.0	U	ug/L	5.0	5.0	1.0
1,2-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,3,5-Trimethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
1,3-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,3-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,4-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
2,2-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
2-Chlorotoluene	1.0	U	ug/L	1.0	1.0	1.0
2-Hexanone	1.0	U	ug/L	1.0	1.0	1.0
4-Chlorotoluene	1.0	U	ug/L	1.0	1.0	1.0
4-Isopropyltoluene	1.0	U	ug/L	1.0	1.0	1.0
Acetone	5.2		ug/L	1.0	1.0	1.0
Benzene	1.0	U	ug/L	1.0	1.0	1.0
Bromobenzene	1.0	U	ug/L	1.0	1.0	1.0
Bromoform	1.0	U	ug/L	1.0	1.0	1.0
Bromomethane	1.0	U	ug/L	1.0	1.0	1.0
Carbon disulfide	1.0	U	ug/L	1.0	1.0	1.0
Carbon tetrachloride	1.0	U	ug/L	1.0	1.0	1.0
Chlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
Bromochloromethane	1.0	U	ug/L	1.0	1.0	1.0
Dibromochloromethane	1.0	U	ug/L	1.0	1.0	1.0
Chloroethane	1.0	U	ug/L	1.0	1.0	1.0
Chloroform	1.0	U	ug/L	1.0	1.0	1.0
Chloromethane	1.0	U	ug/L	1.0	1.0	1.0
cis-1,2-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
cis-1,3-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0

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Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Client Sample ID: DUP040810
Lab Sample ID: 420-34399-3

Date Sampled: 04/08/2010 0000
Date Received: 04/08/2010 1120
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	RL	Dilution
Dibromomethane	1.0	U	ug/L	1.0	1.0	1.0
Bromodichloromethane	1.0	U	ug/L	1.0	1.0	1.0
Dichlorodifluoromethane	1.0	U	ug/L	1.0	1.0	1.0
Ethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Hexachlorobutadiene	1.0	U	ug/L	1.0	1.0	1.0
Iodomethane	1.0	U	ug/L	1.0	1.0	1.0
Isopropylbenzene	1.0	U	ug/L	1.0	1.0	1.0
m-Xylene & p-Xylene	1.0	U	ug/L	1.0	1.0	1.0
2-Butanone	1.0	U	ug/L	1.0	1.0	1.0
4-Methyl-2-pentanone	1.0	U	ug/L	1.0	1.0	1.0
Methyl tert-butyl ether	1.0	U	ug/L	1.0	1.0	1.0
Methylene Chloride	1.0	U	ug/L	1.0	1.0	1.0
n-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
N-Propylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Naphthalene	5.0	U	ug/L	5.0	5.0	1.0
o-Xylene	1.0	U	ug/L	1.0	1.0	1.0
sec-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Styrene	1.0	U	ug/L	1.0	1.0	1.0
tert-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Xylenes, Total	1.0	U	ug/L	1.0	1.0	1.0
Vinyl chloride	1.0	U	ug/L	1.0	1.0	1.0
Vinyl acetate	1.0	U	ug/L	1.0	1.0	1.0
Trichlorofluoromethane	1.0	U	ug/L	1.0	1.0	1.0
Trichloroethene	1.0	U	ug/L	1.0	1.0	1.0
trans-1,3-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0
trans-1,2-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
Toluene	1.0	U	ug/L	1.0	1.0	1.0
Tetrachloroethene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dibromoethane	1.0	U	ug/L	1.0	1.0	1.0

Surrogate			Acceptance Limits
4-Bromofluorobenzene	79	%	74 - 118
Toluene-d8 (Surr)	86	%	74 - 129
1,2-Dichloroethane-d4 (Surr)	77	%	77 - 115

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Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Client Sample ID: B322-RB-1
Lab Sample ID: 420-34399-4

Date Sampled: 04/08/2010 1010
Date Received: 04/08/2010 1120
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	RL	Dilution
Method: 8260B			Date Analyzed:	04/12/2010 1844		
Prep Method: 5030B			Date Prepared:	04/12/2010 1844		
1,1,1,2-Tetrachloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1,1-Trichloroethane	1.0	U *	ug/L	1.0	1.0	1.0
1,1,2,2-Tetrachloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1,2-Trichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
1,1-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0
1,2,3-Trichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2,3-Trichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,2,4-Trichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2,4-Trimethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dibromo-3-Chloropropane	5.0	U	ug/L	5.0	5.0	1.0
1,2-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dichloroethane	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,3,5-Trimethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
1,3-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
1,3-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
1,4-Dichlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
2,2-Dichloropropane	1.0	U	ug/L	1.0	1.0	1.0
2-Chlorotoluene	1.0	U	ug/L	1.0	1.0	1.0
2-Hexanone	1.0	U	ug/L	1.0	1.0	1.0
4-Chlorotoluene	1.0	U	ug/L	1.0	1.0	1.0
4-Isopropyltoluene	1.0	U	ug/L	1.0	1.0	1.0
Acetone	3.4		ug/L	1.0	1.0	1.0
Benzene	1.0	U	ug/L	1.0	1.0	1.0
Bromobenzene	1.0	U	ug/L	1.0	1.0	1.0
Bromoform	1.0	U	ug/L	1.0	1.0	1.0
Bromomethane	1.0	U	ug/L	1.0	1.0	1.0
Carbon disulfide	1.0	U	ug/L	1.0	1.0	1.0
Carbon tetrachloride	1.0	U	ug/L	1.0	1.0	1.0
Chlorobenzene	1.0	U	ug/L	1.0	1.0	1.0
Bromochloromethane	1.0	U	ug/L	1.0	1.0	1.0
Dibromochloromethane	1.0	U	ug/L	1.0	1.0	1.0
Chloroethane	1.0	U	ug/L	1.0	1.0	1.0
Chloroform	19		ug/L	1.0	1.0	1.0
Chloromethane	1.0	U	ug/L	1.0	1.0	1.0
cis-1,2-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
cis-1,3-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0

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Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Client Sample ID: B322-RB-1
Lab Sample ID: 420-34399-4

Date Sampled: 04/08/2010 1010
Date Received: 04/08/2010 1120
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	RL	Dilution
Dibromomethane	1.0	U	ug/L	1.0	1.0	1.0
Bromodichloromethane	1.0	U	ug/L	1.0	1.0	1.0
Dichlorodifluoromethane	1.0	U	ug/L	1.0	1.0	1.0
Ethylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Hexachlorobutadiene	1.0	U	ug/L	1.0	1.0	1.0
Iodomethane	1.0	U	ug/L	1.0	1.0	1.0
Isopropylbenzene	1.0	U	ug/L	1.0	1.0	1.0
m-Xylene & p-Xylene	1.0	U	ug/L	1.0	1.0	1.0
2-Butanone	1.0	U	ug/L	1.0	1.0	1.0
4-Methyl-2-pentanone	1.0	U	ug/L	1.0	1.0	1.0
Methyl tert-butyl ether	1.0	U	ug/L	1.0	1.0	1.0
Methylene Chloride	1.0	U	ug/L	1.0	1.0	1.0
n-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
N-Propylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Naphthalene	5.0	U	ug/L	5.0	5.0	1.0
o-Xylene	1.0	U	ug/L	1.0	1.0	1.0
sec-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Styrene	1.0	U	ug/L	1.0	1.0	1.0
tert-Butylbenzene	1.0	U	ug/L	1.0	1.0	1.0
Xylenes, Total	1.0	U	ug/L	1.0	1.0	1.0
Vinyl chloride	1.0	U	ug/L	1.0	1.0	1.0
Vinyl acetate	1.0	U	ug/L	1.0	1.0	1.0
Trichlorofluoromethane	1.0	U	ug/L	1.0	1.0	1.0
Trichloroethene	1.0	U	ug/L	1.0	1.0	1.0
trans-1,3-Dichloropropene	1.0	U	ug/L	1.0	1.0	1.0
trans-1,2-Dichloroethene	1.0	U	ug/L	1.0	1.0	1.0
Toluene	1.0	U	ug/L	1.0	1.0	1.0
Tetrachloroethene	1.0	U	ug/L	1.0	1.0	1.0
1,2-Dibromoethane	1.0	U	ug/L	1.0	1.0	1.0

Surrogate			Acceptance Limits
4-Bromofluorobenzene	91	%	74 - 118
Toluene-d8 (Surr)	104	%	74 - 129
1,2-Dichloroethane-d4 (Surr)	78	%	77 - 115

DATA REPORTING QUALIFIERS

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Lab Section	Qualifier	Description
GC/MS VOA		
	*	LCS or LCSD exceeds the control limits
	F	MS or MSD exceeds the control limits
	F	RPD of the MS and MSD exceeds the control limits
	U	The analyte was analyzed for but not detected at or above the stated limit.

QUALITY CONTROL RESULTS

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:420-38537					
LCS 420-38537/1	Lab Control Spike	T	Water	8260B	
MB 420-38537/2	Method Blank	T	Water	8260B	
420-34399-1	Trip Blank	T	Water	8260B	
420-34399-2	MWS-208-R-1	T	Water	8260B	
420-34399-3	DUP040810	T	Water	8260B	
420-34399-4	B322-RB-1	T	Water	8260B	
420-34399-4MS	Matrix Spike	T	Water	8260B	
420-34399-4MSD	Matrix Spike Duplicate	T	Water	8260B	

Report Basis
T = Total

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Surrogate Recovery Report

8260B Volatile Organic Compounds by GC/MS

Client Matrix: Water

Lab Sample ID	Client Sample ID	12DCE %Rec	BFB %Rec	TOL %Rec
420-34399-4 MS	B322-RB-1	85	93	86
420-34399-4 MSD	B322-RB-1	92	91	97
LCS 420-38537/1		78	90	83
MB 420-38537/2		77	74	85
420-34399-1	Trip Blank	87	77	86
420-34399-2	MWS-208-R-1	88	77	98
420-34399-3	DUP040810	77	79	86
420-34399-4	B322-RB-1	78	91	104

Surrogate		Acceptance Limits
12DCE	1,2-Dichloroethane-d4 (Surr)	77 - 115
BFB	4-Bromofluorobenzene	74 - 118
TOL	Toluene-d8 (Surr)	74 - 129

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Method Blank - Batch: 420-38537

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 420-38537/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 04/12/2010 1654
Date Prepared: 04/12/2010 1654

Analysis Batch: 420-38537
Prep Batch: N/A
Units: ug/L

Instrument ID: Agilent 7890A/5975C GC-M
Lab File ID: X041218.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	RL	RL
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0
1,1,1-Trichloroethane	1.0	U	1.0	1.0
1,1,2,2-Tetrachloroethane	1.0	U	1.0	1.0
1,1,2-Trichloroethane	1.0	U	1.0	1.0
1,1-Dichloroethane	1.0	U	1.0	1.0
1,1-Dichloroethene	1.0	U	1.0	1.0
1,1-Dichloropropene	1.0	U	1.0	1.0
1,2,3-Trichlorobenzene	1.0	U	1.0	1.0
1,2,3-Trichloropropane	1.0	U	1.0	1.0
1,2,4-Trichlorobenzene	1.0	U	1.0	1.0
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	5.0
1,2-Dichlorobenzene	1.0	U	1.0	1.0
1,2-Dichloroethane	1.0	U	1.0	1.0
1,2-Dichloropropane	1.0	U	1.0	1.0
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0
1,3-Dichlorobenzene	1.0	U	1.0	1.0
1,3-Dichloropropane	1.0	U	1.0	1.0
1,4-Dichlorobenzene	1.0	U	1.0	1.0
2,2-Dichloropropane	1.0	U	1.0	1.0
2-Chlorotoluene	1.0	U	1.0	1.0
2-Hexanone	1.0	U	1.0	1.0
4-Chlorotoluene	1.0	U	1.0	1.0
4-Isopropyltoluene	1.0	U	1.0	1.0
Acetone	1.0	U	1.0	1.0
Benzene	1.0	U	1.0	1.0
Bromobenzene	1.0	U	1.0	1.0
Bromoform	1.0	U	1.0	1.0
Bromomethane	1.0	U	1.0	1.0
Carbon disulfide	1.0	U	1.0	1.0
Carbon tetrachloride	1.0	U	1.0	1.0
Chlorobenzene	1.0	U	1.0	1.0
Bromochloromethane	1.0	U	1.0	1.0
Dibromochloromethane	1.0	U	1.0	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	1.0	U	1.0	1.0
Chloromethane	1.0	U	1.0	1.0
cis-1,2-Dichloroethene	1.0	U	1.0	1.0
cis-1,3-Dichloropropene	1.0	U	1.0	1.0
Dibromomethane	1.0	U	1.0	1.0
Bromodichloromethane	1.0	U	1.0	1.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Method Blank - Batch: 420-38537

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 420-38537/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 04/12/2010 1654
Date Prepared: 04/12/2010 1654

Analysis Batch: 420-38537
Prep Batch: N/A
Units: ug/L

Instrument ID: Agilent 7890A/5975C GC-M
Lab File ID: X041218.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	RL	RL
Dichlorodifluoromethane	1.0	U	1.0	1.0
Ethylbenzene	1.0	U	1.0	1.0
Hexachlorobutadiene	1.0	U	1.0	1.0
Iodomethane	1.0	U	1.0	1.0
Isopropylbenzene	1.0	U	1.0	1.0
m-Xylene & p-Xylene	1.0	U	1.0	1.0
2-Butanone	1.0	U	1.0	1.0
4-Methyl-2-pentanone	1.0	U	1.0	1.0
Methyl tert-butyl ether	1.0	U	1.0	1.0
Methylene Chloride	1.0	U	1.0	1.0
n-Butylbenzene	1.0	U	1.0	1.0
N-Propylbenzene	1.0	U	1.0	1.0
Naphthalene	5.0	U	5.0	5.0
o-Xylene	1.0	U	1.0	1.0
sec-Butylbenzene	1.0	U	1.0	1.0
Styrene	1.0	U	1.0	1.0
tert-Butylbenzene	1.0	U	1.0	1.0
Xylenes, Total	1.0	U	1.0	1.0
Vinyl chloride	1.0	U	1.0	1.0
Vinyl acetate	1.0	U	1.0	1.0
Trichlorofluoromethane	1.0	U	1.0	1.0
Trichloroethene	1.0	U	1.0	1.0
trans-1,3-Dichloropropene	1.0	U	1.0	1.0
trans-1,2-Dichloroethene	1.0	U	1.0	1.0
Toluene	1.0	U	1.0	1.0
Tetrachloroethene	1.0	U	1.0	1.0
1,2-Dibromoethane	1.0	U	1.0	1.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	74	74 - 118
Toluene-d8 (Surr)	85	74 - 129
1,2-Dichloroethane-d4 (Surr)	77	77 - 115

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Lab Control Spike - Batch: 420-38537

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 420-38537/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 04/12/2010 1557
Date Prepared: 04/12/2010 1557

Analysis Batch: 420-38537
Prep Batch: N/A
Units: ug/L

Instrument ID: Agilent 7890A/5975C GC-M
Lab File ID: X041216.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	20.0	24.0	120	70 - 130	
1,1,1-Trichloroethane	20.0	26.3	131	70 - 130	*
1,1,2,2-Tetrachloroethane	20.0	17.4	87	70 - 130	
1,1,2-Trichloroethane	20.0	19.0	95	70 - 130	
1,1-Dichloroethane	20.0	18.6	93	70 - 130	
1,1-Dichloroethene	20.0	20.5	103	70 - 130	
1,1-Dichloropropene	20.0	21.9	110	70 - 130	
1,2,3-Trichlorobenzene	20.0	17.0	85	70 - 130	
1,2,3-Trichloropropane	20.0	18.4	92	70 - 130	
1,2,4-Trichlorobenzene	20.0	18.4	92	70 - 130	
1,2,4-Trimethylbenzene	20.0	20.0	100	70 - 130	
1,2-Dibromo-3-Chloropropane	20.0	19.6	98	70 - 130	
1,2-Dichlorobenzene	20.0	19.5	98	70 - 130	
1,2-Dichloroethane	20.0	20.2	101	70 - 130	
1,2-Dichloropropane	20.0	22.5	113	70 - 130	
1,3,5-Trimethylbenzene	20.0	19.5	97	70 - 130	
1,3-Dichlorobenzene	20.0	19.3	97	70 - 130	
1,3-Dichloropropane	20.0	17.6	88	70 - 130	
1,4-Dichlorobenzene	20.0	20.7	103	70 - 130	
2,2-Dichloropropane	20.0	23.7	119	70 - 130	
2-Chlorotoluene	20.0	18.4	92	70 - 130	
2-Hexanone	20.0	19.4	97	70 - 130	
4-Chlorotoluene	20.0	19.0	95	70 - 130	
4-Isopropyltoluene	20.0	19.7	99	70 - 130	
Acetone	20.0	17.8	89	70 - 130	
Benzene	20.0	22.1	111	70 - 130	
Bromobenzene	20.0	17.5	87	70 - 130	
Bromoform	20.0	15.3	76	70 - 130	
Bromomethane	20.0	20.2	101	70 - 130	
Carbon disulfide	20.0	17.7	88	70 - 130	
Carbon tetrachloride	20.0	20.8	104	70 - 130	
Chlorobenzene	20.0	22.1	111	70 - 130	
Bromochloromethane	20.0	19.9	99	70 - 130	
Dibromochloromethane	20.0	15.1	75	70 - 130	
Chloroethane	20.0	20.8	104	70 - 130	
Chloroform	20.0	20.8	104	70 - 130	
Chloromethane	20.0	19.9	99	70 - 130	
cis-1,2-Dichloroethene	20.0	21.2	106	70 - 130	
cis-1,3-Dichloropropene	20.0	15.8	79	70 - 130	
Dibromomethane	20.0	21.9	110	70 - 130	
Bromodichloromethane	20.0	23.7	118	70 - 130	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Lab Control Spike - Batch: 420-38537

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 420-38537/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 04/12/2010 1557
Date Prepared: 04/12/2010 1557

Analysis Batch: 420-38537
Prep Batch: N/A
Units: ug/L

Instrument ID: Agilent 7890A/5975C GC-M
Lab File ID: X041216.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dichlorodifluoromethane	20.0	20.5	103	70 - 130	
Ethylbenzene	20.0	21.3	106	70 - 130	
Hexachlorobutadiene	20.0	19.9	99	70 - 130	
Iodomethane	20.0	20.1	100	70 - 130	
Isopropylbenzene	20.0	18.3	91	70 - 130	
m-Xylene & p-Xylene	40.0	34.3	86	70 - 130	
2-Butanone	20.0	20.5	102	70 - 130	
4-Methyl-2-pentanone	20.0	21.4	107	70 - 130	
Methyl tert-butyl ether	20.0	18.9	95	70 - 130	
Methylene Chloride	20.0	18.9	94	70 - 130	
n-Butylbenzene	20.0	19.9	100	70 - 130	
N-Propylbenzene	20.0	18.6	93	70 - 130	
Naphthalene	20.0	17.2	86	70 - 130	
o-Xylene	20.0	17.2	86	70 - 130	
sec-Butylbenzene	20.0	19.4	97	70 - 130	
Styrene	20.0	17.3	87	70 - 130	
tert-Butylbenzene	20.0	19.3	96	70 - 130	
Vinyl chloride	20.0	19.9	100	70 - 130	
Vinyl acetate	20.0	17.5	87	70 - 130	
Trichlorofluoromethane	20.0	19.8	99	70 - 130	
Trichloroethene	20.0	22.0	110	70 - 130	
trans-1,3-Dichloropropene	20.0	15.4	77	70 - 130	
trans-1,2-Dichloroethene	20.0	18.2	91	70 - 130	
Toluene	20.0	17.2	86	70 - 130	
Tetrachloroethene	20.0	19.6	98	70 - 130	
1,2-Dibromoethane	20.0	22.3	111	70 - 130	

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	90	74 - 118
Toluene-d8 (Surr)	83	74 - 129
1,2-Dichloroethane-d4 (Surr)	78	77 - 115

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 420-38537

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	420-34399-4	Analysis Batch: 420-38537	Instrument ID: Agilent 7890A/5975C GC-
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: X041223.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	04/12/2010 1912		Final Weight/Volume: 5 mL
Date Prepared:	04/12/2010 1912		

MSD Lab Sample ID:	420-34399-4	Analysis Batch: 420-38537	Instrument ID: Agilent 7890A/5975C GC-M
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: X041224.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	04/12/2010 1939		Final Weight/Volume: 5 mL
Date Prepared:	04/12/2010 1939		

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1,1,2-Tetrachloroethane	115	107	70 - 130	8	20		
1,1,1-Trichloroethane	133	130	70 - 130	2	20	F	
1,1,2,2-Tetrachloroethane	79	77	70 - 130	3	20		
1,1,2-Trichloroethane	99	114	70 - 130	14	20		
1,1-Dichloroethane	109	123	70 - 130	12	20		
1,1-Dichloroethene	114	123	70 - 130	7	20		
1,1-Dichloropropene	119	117	70 - 130	2	20		
1,2,3-Trichlorobenzene	81	79	70 - 130	2	20		
1,2,3-Trichloropropane	82	79	70 - 130	4	20		
1,2,4-Trichlorobenzene	84	82	70 - 130	2	20		
1,2,4-Trimethylbenzene	100	97	70 - 130	3	20		
1,2-Dibromo-3-Chloropropane	78	62	70 - 130	22	20		F
1,2-Dichlorobenzene	103	96	70 - 130	7	20		
1,2-Dichloroethane	117	111	70 - 130	6	20		
1,2-Dichloropropane	105	119	70 - 130	13	20		
1,3,5-Trimethylbenzene	95	97	70 - 130	1	20		
1,3-Dichlorobenzene	100	96	70 - 130	4	20		
1,3-Dichloropropane	80	114	70 - 130	36	20		F
1,4-Dichlorobenzene	102	98	70 - 130	4	20		
2,2-Dichloropropane	104	120	70 - 130	15	20		
2-Chlorotoluene	96	94	70 - 130	2	20		
2-Hexanone	77	109	70 - 130	34	20		F
4-Chlorotoluene	93	91	70 - 130	2	20		
4-Isopropyltoluene	103	98	70 - 130	4	20		
Acetone	77	87	70 - 130	10	20		
Benzene	114	111	70 - 130	2	20		
Bromobenzene	85	84	70 - 130	2	20		
Bromoform	67	77	70 - 130	14	20	F	
Bromomethane	108	102	70 - 130	6	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 420-38537

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	420-34399-4	Analysis Batch: 420-38537	Instrument ID: Agilent 7890A/5975C GC-
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: X041223.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	04/12/2010 1912		Final Weight/Volume: 5 mL
Date Prepared:	04/12/2010 1912		

MSD Lab Sample ID:	420-34399-4	Analysis Batch: 420-38537	Instrument ID: Agilent 7890A/5975C GC-M
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: X041224.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	04/12/2010 1939		Final Weight/Volume: 5 mL
Date Prepared:	04/12/2010 1939		

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Carbon disulfide	91	102	70 - 130	11	20		
Carbon tetrachloride	103	103	70 - 130	0	20		
Chlorobenzene	108	108	70 - 130	0	20		
Bromochloromethane	98	109	70 - 130	11	20		
Dibromochloromethane	66	91	70 - 130	32	20	F	F
Chloroethane	113	114	70 - 130	1	20		
Chloroform	116	148	70 - 130	14	20		F
Chloromethane	111	114	70 - 130	3	20		
cis-1,2-Dichloroethene	108	119	70 - 130	10	20		
cis-1,3-Dichloropropene	77	86	70 - 130	11	20		
Dibromomethane	99	118	70 - 130	17	20		
Bromodichloromethane	113	132	70 - 130	15	20		F
Dichlorodifluoromethane	112	123	70 - 130	9	20		
Ethylbenzene	103	104	70 - 130	1	20		
Hexachlorobutadiene	100	85	70 - 130	16	20		
Iodomethane	109	121	70 - 130	10	20		
Isopropylbenzene	91	90	70 - 130	1	20		
m-Xylene & p-Xylene	85	85	70 - 130	0	20		
2-Butanone	82	90	70 - 130	9	20		
4-Methyl-2-pentanone	106	104	70 - 130	3	20		
Methyl tert-butyl ether	97	114	70 - 130	16	20		
Methylene Chloride	107	118	70 - 130	10	20		
n-Butylbenzene	105	98	70 - 130	8	20		
N-Propylbenzene	94	91	70 - 130	3	20		
Naphthalene	79	74	70 - 130	7	20		
o-Xylene	84	84	70 - 130	1	20		
sec-Butylbenzene	103	102	70 - 130	1	20		
Styrene	85	86	70 - 130	0	20		
tert-Butylbenzene	104	97	70 - 130	7	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 420-38537

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	420-34399-4	Analysis Batch: 420-38537	Instrument ID: Agilent 7890A/5975C GC-
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: X041223.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	04/12/2010 1912		Final Weight/Volume: 5 mL
Date Prepared:	04/12/2010 1912		

MSD Lab Sample ID:	420-34399-4	Analysis Batch: 420-38537	Instrument ID: Agilent 7890A/5975C GC-M
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: X041224.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	04/12/2010 1939		Final Weight/Volume: 5 mL
Date Prepared:	04/12/2010 1939		

	% Rec.					
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Vinyl chloride	118	124	70 - 130	5	20		
Vinyl acetate	80	94	70 - 130	16	20		
Trichlorofluoromethane	106	67	70 - 130	45	20		F
Trichloroethene	110	122	70 - 130	11	20		
trans-1,3-Dichloropropene	75	88	70 - 130	16	20		
trans-1,2-Dichloroethene	116	128	70 - 130	9	20		
Toluene	85	104	70 - 130	20	20		
Tetrachloroethene	85	99	70 - 130	14	20		
1,2-Dibromoethane	81	122	70 - 130	40	20		F

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
4-Bromofluorobenzene	93	91	74 - 118
Toluene-d8 (Surr)	86	97	74 - 129
1,2-Dichloroethane-d4 (Surr)	85	92	77 - 115

Calculations are performed before rounding to avoid round-off errors in calculated results.

LOGIN SAMPLE RECEIPT CHECK LIST

Client: William F. Cosulich Associates

Job Number: 420-34399-1
Sdg Number: 25215-I IBM Tank 208

Login Number: 34399

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present, is intact.	NA	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

APPENDIX F

DATA VALIDATION

DATA VALIDATION CHECKLIST

Project Name:	IBM East Fishkill Facility
Project Number:	2515-I
Sample Date(s):	April 8, 2010
Sample Team:	B. Werner
Matrix/Number of Samples:	Water/ 1 Field Duplicates/ 1 Trip Blanks / 1 Rinse Blanks/ 1 Field Blanks/ 0
Analyzing Laboratory:	EnviroTest Laboratories Inc, Newburgh, NY
Analyses:	Volatile Organic Compounds (VOCs): by SW846 8260B
Laboratory Report No:	420-34399-1 Date:6/14/2010

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X		X	
6. Sample analysis date		X		X	
7. Copy of chain-of-custody form signed by Lab sample custodian		X		X	
8. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

Comments:

A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of Organic Data Review, June, 2008, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

ORGANIC ANALYSES
VOCS

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks		X	X		
3. Matrix spike (MS) %R		X	X		
4. Matrix spike duplicate (MSD) %R		X	X		
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X	X		
7. Surrogate spike recoveries		X		X	
8. Field duplicates RPD		X		X	

VOCs - volatile organic compounds %R - percent recovery RPD - relative percent difference

Comments:
Performance was acceptable with the following exceptions:

2. Acetone and chloroform were detected in the rinsate blank. Acetone was detected at less than 10 times the blank results and was qualified as non-detect (U) in MWS-208-R-1 and DUP040810.

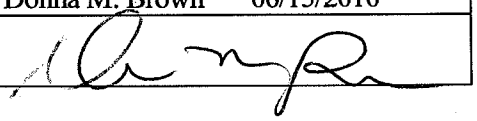
3-5. 1,1,1-Trichloroethane, chloroform and bromodichloromethane had %Rs above QC limits in the MS and/or MSD. Bromoform, 1,2-dibromo-3-chloropropane, dibromochloromethane and trichlorofluoromethane %Rs were below QC limits in the MS and/or MSD. 1,2-Dibromo-3-chloropropane, dibromochloromethane, trichlorofluoromethane, 1,3-dichloropropane, 2-hexanone and 1,2-dibromoethane RPDs above were above QC limits. Chloroform was qualified as estimated (J) in B322-RB-1. Bromoform, 1,2-dibromo-3-chloropropane, dibromochloromethane and trichlorofluoromethane were qualified as estimated (UJ) in all samples.

6. The %R was above QC limits for 1,1,1-trichloroethane in the laboratory control sample. It was not detected in the associated samples and qualification of the data was not necessary.

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:420-34399-1

Sample ID	Analyte(s)	Qualifier	Reason(s)
VOCs			
MWS-208-R-1 and DUP040810	Acetone	U	Detected in associated blank
B322-RB-1	Chloroform	J	The MS/MSD %R was above QC limits
All samples	Bromoform, 1,2-dibromo-3-chloropropane, dibromochloromethane and trichlorofluoromethane	UJ	The MS/MSD %R was below QC limits

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 06/15/2010
VALIDATION PERFORMED BY SIGNATURE:	

ATTACHMENT B

B322 SWMU Closure Removal Checklists and Photographs

ARCADIS

SOLID WASTE MANAGEMENT UNIT CLOSURE CHECKLIST

Site Name & Location	GLOBALFOUNDRIES East Fishkill, NY	Building	322	Index #	20180001

SWMU Name:	208
SWMU Description:	Solvent Waste-Mixed (Spill Tank)
SWMU Component:	Solvent Waste-Mixed (Spill Tank) In Vault, Previously Decontaminated

Decommissioning Record

Environmental Items:	Yes	No	Not Required/ None	Test and Inspection Results Pass/Fail	Disposal Facility Name	Recycle Facility Name
1. Pictures Taken Pre-Decontamination		X				
2. Pictures Taken Post-Decontamination	X					
3. Fluids Drained	X			Pass (1)	IBM WWTP	
4. Solid Residuals Removed	X			Pass (1)	NA	
5.Tank/Pipes Visually Inspected for Integrity	X			Pass (1)		
6.Tank/Pipes Sampled for Surface pH			X	NA		
7.Tank/Pipes Sampled for Other Waste Constituents	X			Pass (1)		
8.Spill Containment Pit/Trench Visually Inspected for Integrity	X			Pass (1)		
9.Spill Containment Pit/Trench Sampled for Surface pH			X	NA		
10.Spill Containment Pit/Trench Sampled for Other Constituents			X	NA		
11. SWMU Tank Approved and Removed From Facility	X					Millens
12. SWMU Containment Pit/Trench Approved for Backfill in Place	X					

Closure and Removal Dates

1. Date Tank/Pipes Verified Clean for Scrap Recycling			06/15/2010 (1)	
2. Date Containment Pit/Trench Verified Clean			11/8/2018	
3. SWMU Status (Removed, Component Removed, Closed in Place)	Component (Tank) Removed	Status Change Date:	11/8/2018	

Pictures:	Attached
Data:	See Attachment A (from 2010)
Notes:	(1) SWMU #208, a 1,300 gallon stainless steel Solvent Waste-Mixed (Spill Tank) was decontaminated in place with water and surfactant solution and verified clean with rinsate sample analysis for VOCs for comparison to Class GA Groundwater Standards. No VOCs were detected in the rinsate. Tank cleaning, sampling and analysis was certified by Willian F. Cosulich Associates, P.C. on 6/15/2010 (see Attachment A). On 11/8/2018 Highground Industrial removed the previously decontaminated SWMU Tank 208. The tank was observed by Arcadis to be corroded but intact, with top cover previously removed and drain pipe previously disconnected. The stainless steel vault liner was corroded but the vault had held rain water when inspected in 2018. Prior to tank removal, rain water in the tank vault was drained for treatment at the onsite WWTP. Underground drain piping running back to the solvent room was not removed.
Signature	Christopher Goldsmith
ARCADIS Representative	Christopher Goldsmith

ARCADIS

SOLID WASTE MANAGEMENT UNIT
CLOSURE CHECKLIST

Site Name & Location	GLOBALFOUNDRIES East Fishkill, NY	Building	322	Index #	20180002

SWMU Name:	B322-FL
SWMU Description:	Fluoride/Heavy Metals Wastewater Transfer Piping
SWMU Component:	Fluoride/Heavy Metals Wastewater Transfer Piping North of Column Line 22

Decommissioning Record

Environmental Items:	Yes	No	Not Required/ None	Test and Inspection Results Pass/Fail	Disposal Facility Name	Recycle Facility Name
1. Pictures Taken Pre-Decontamination	X					
2. Pictures Taken Post-Decontamination	X					
3. Fluids Drained	X			Pass	Onsite WWTP	
4. Solid Residuals Removed	X			Pass	NA	
5.Tank/Pipes Visually Inspected for Integrity	X			Pass		
6.Tank/Pipes Sampled for Surface pH	X			Pass		
7.Tank/Pipes Sampled for Other Waste Constituents			X	NA		
8.Spill Containment Pit/Trench Visually Inspected for Integrity	X			Pass		
9.Spill Containment Pit/Trench Sampled for Surface pH			X	NA		
10.Spill Containment Pit/Trench Sampled for Other Constituents			X	NA		
11. SWMU Pipes Approved and Removed From Facility	X				DCRRA	
12. SWMU Containment Pit/Trench Approved for Backfill in Place	X					

Closure and Removal Dates

1. Date Tank/Pipes Verified Clean for Non-Hazardous Waste Diposal		11/21/2018	
2. Date Containment Pit/Trench Verified Clean		NA	
3. SWMU Status (Removed, Component Removed, Closed in Place)	Components (Piping) Removed North of Column Line 22	Status Change Date: 11/21/2018	

Pictures:	Attached
Data:	Table 4
Notes:	Highground Industrial removed, sized and decontaminated the fluoride waste transfer PVC piping. Arcadis conducted pH verification sampling and visual inspection to verify that the pipes were free of residue and met neutral pH range criteria. Decontaminated piping was transferred by Royal Carting to Dutchess County Resource Recovery Agency (DCRRA), Poughkeepsie, NY.
Signature	Christopher Goldsmith
ARCADIS Representative	Christopher Goldsmith

ARCADIS

SOLID WASTE MANAGEMENT UNIT
CLOSURE CHECKLIST

Site Name & Location	GLOBALFOUNDRIES East Fishkill, NY	Building	322	Index #	20180003

SWMU Name:	B322-IW
SWMU Description:	Industrial Wastewater Transfer Piping
SWMU Component:	Industrial Wastewater Transfer Piping North of Column Line 22

Decommissioning Record

Environmental Items:	Yes	No	Not Required/ None	Test and Inspection Results Pass/Fail	Disposal Facility Name	Recycle Facility Name
1. Pictures Taken Pre-Decontamination	X					
2. Pictures Taken Post-Decontamination	X					
3. Fluids Drained	X			Pass	Onsite WWTP	
4. Solid Residuals Removed	X			Pass	NA	
5.Tank/Pipes Visually Inspected for Integrity	X			Pass		
6.Tank/Pipes Sampled for Surface pH	X			Pass		
7.Tank/Pipes Sampled for Other Waste Constituents			X	NA		
8.Spill Containment Pit/Trench Visually Inspected for Integrity	X			Pass		
9.Spill Containment Pit/Trench Sampled for Surface pH			X	NA		
10.Spill Containment Pit/Trench Sampled for Other Constituents			X	NA		
11. SWMU Pipes Approved and Removed From Facility	X				DCRRA	
12. SWMU Containment Pit/Trench Approved for Backfill in Place	X					

Closure and Removal Dates

1. Date Tank/Pipes Verified Clean for Non-Hazardous Waste Diposal			9/21/2018	
2. Date Containment Pit/Trench Verified Clean			NA	
3. SWMU Status (Removed, Component Removed, Closed in Place)	Components (Piping) Removed North of Column Line 22	Status Change Date:	9/21/2018	

Pictures:	Attached
Data:	Table 2
Notes:	Highground Industrial removed, sized and decontaminated the industrial waste transfer PVC piping. Arcadis conducted pH verification sampling and visual inspection to verify that the pipes were free of residue and met neutral pH range criteria. Decontaminated piping was transferred by Royal Carting to Dutchess County Resource Recovery Agency (DCRRA), Poughkeepsie, NY.
Signature	Christopher Goldsmith
ARCADIS Representative	Christopher Goldsmith

ARCADIS

SOLID WASTE MANAGEMENT UNIT
CLOSURE CHECKLIST

Site Name & Location	GLOBALFOUNDRIES East Fishkill, NY	Building	322	Index #	20180004
SWMU Name:	B322-SO				
SWMU Description:	Solvent Waste Transfer Piping				
SWMU Component:	Solvent Waste Transfer Piping North of Column Line 22				

Decommissioning Record

Environmental Items:	Yes	No	Not Required/ None	Test and Inspection Results Pass/Fail	Disposal Facility Name	Recycle Facility Name
1. Pictures Taken Pre-Decontamination	X					
2. Pictures Taken Post-Decontamination	X					
3. Fluids Drained	X (1)				Onsite WWTP	
4. Solid Residuals Removed		X		NA		
5.Tank/Pipes Visually Inspected for Integrity			X	NA		
6.Tank/Pipes Sampled for Surface pH			X	NA		
7.Tank/Pipes Sampled for Other Waste Constituents			X	NA		
8.Spill Containment Pit/Trench Visually Inspected for Integrity	X			Pass		
9.Spill Containment Pit/Trench Sampled for Surface pH			X	NA		
10.Spill Containment Pit/Trench Sampled for Other Constituents			X	NA		
11. SWMU Tank/Pipes Approved and Removed From Facility	X				Michigan Disposal	
12. SWMU Containment Pit/Trench Approved for Backfill in Place	X					

Closure and Removal Dates

1. Date Tank/Pipes Verified Clean for Non-Hazardous Waste Disposal			10/2/2018	
2. Date Containment Pit/Trench Verified Clean			NA	
3. SWMU Status (Removed, Component Removed, Closed in Place)	Components (Piping) Removed North of Column Line 22	Status Change Date:	10/2/2018	

Pictures:	Attached
Data:	NA
Notes:	(1) Test flushing was performed on representative segments of solvent piping in place by Highground Industrial per Arcadis pilot flush plan. Wastewater was collected in 55 gallon drums, tested by GLOBALFOUNDRIES, and accepted for treatment in the onsite industrial WWTP. In-place decontamination was not pursued any further. Rather, the solvent waste transfer piping (carbon steel pipe) was removed and sized by Highground Industrial and placed in roll-off containers for disposal as hazardous waste. The solvent pipe was transferred by Freehold Cartage to Michigan Disposal for treatment and land disposal.
Signature	Christopher Goldsmith
ARCADIS Representative	Christopher Goldsmith

ARCADIS

SOLID WASTE MANAGEMENT UNIT
CLOSURE CHECKLIST

Site Name & Location	GLOBALFOUNDRIES East Fishkill, NY	Building	322	Index #	20180005

SWMU Name:	CW L/UL 322
SWMU Description:	Container Waste Loading/Unloading Area
SWMU Component:	Container Waste Loading/Unloading Area

Decommissioning Record

Environmental Items:	Yes	No	Not Required/ None	Test and Inspection Results Pass/Fail	Disposal Facility Name	Recycle Facility Name
1. Pictures Taken Pre-Decontamination	X					
2. Pictures Taken Post-Decontamination	X					
3. Fluids Drained			X	NA	NA	
4. Solid Residuals Removed			X	Pass	NA	
5.Tank/Pipes Visually Inspected for Integrity			X	NA		
6.Tank/Pipes Sampled for Surface pH			X	NA		
7.Tank/Pipes Sampled for Other Waste Constituents			X	NA		
8.Spill Containment Floor Visually Inspected for Integrity	X			Pass		
9.Spill Containment Floor Sampled for Surface pH	X			Pass		
10.Spill Containment Floor Sampled for Other Constituents			X	NA		
11. SWMU Tank/Pipes Approved and Removed From Facility			X	NA		
12. SWMU Containment Area Approved for Demolition	X					

Closure and Removal Dates

1. Date Tank/Pipes Verified Clean			NA	
2. Date Containment Area Verified Closed			8/20/2018	
3. SWMU Status (Removed, Component Removed, Closed in Place)	Closed in Place	Status Change Date:	8/20/208	

Pictures:	Attached
Data:	Table 3
Notes:	There were no containers or other wastes present in the Container Waste Loading/Unloading Area when the project started in 2018. Highground Industrial decontaminated the floor with broom and HEPA vacuum to facilitate inspection. Walls did not exhibit visible residue. Arcadis performed pH sampling and visual inspection to confirm that the floor was debris free and the surface met the pH neutral range criteria.
Signature	Christopher Goldsmith
ARCADIS Representative	Christopher Goldsmith

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste-Mixed Spill Tank
Unit ID # 208, Index No. 20180001 – Verified 11/8/2018

Water In Vault Prior To Being Pumped Out

Pumping Water Out Of Solvent Tank And Vault

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste-Mixed Spill Tank
Unit ID # 208, Index No. 20180001 – Verified 11/8/2018

Pumping Water Out Of Solvent Tank And Vault

Pumping Water Out Of Solvent Tank And Vault

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste-Mixed Spill Tank
Unit ID # 208, Index No. 20180001 – Verified 11/8/2018

Removal To Top Of Tank Vault

Removal To Top Of Tank Vault

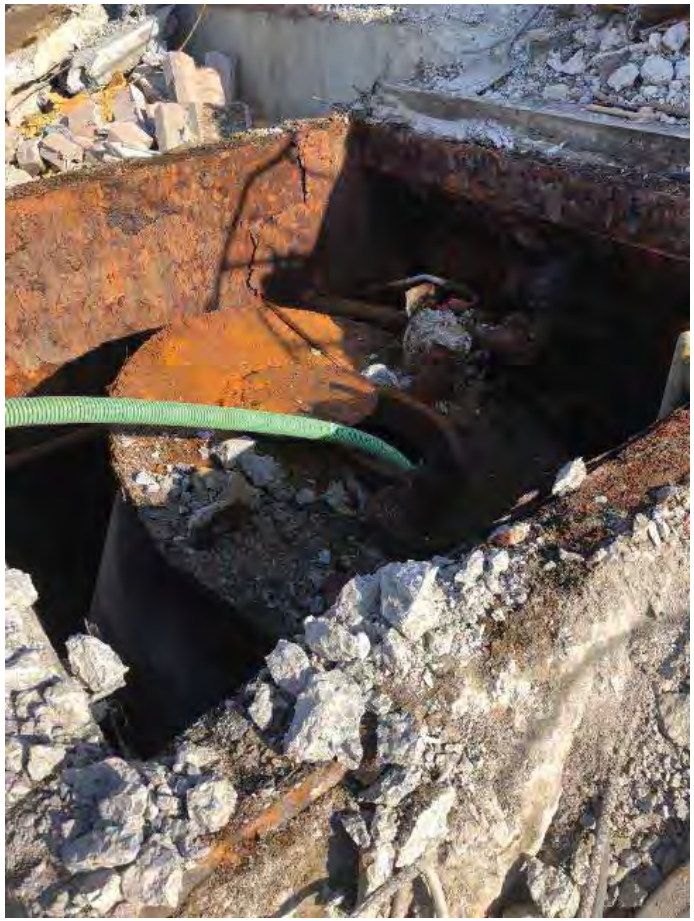
B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste-Mixed Spill Tank
Unit ID # 208, Index No. 20180001 – Verified 11/8/2018

Removal To Top Of Tank Vault

Solvent Tank Inside Vault

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste-Mixed Spill Tank
Unit ID # 208, Index No. 20180001 – Verified 11/8/2018

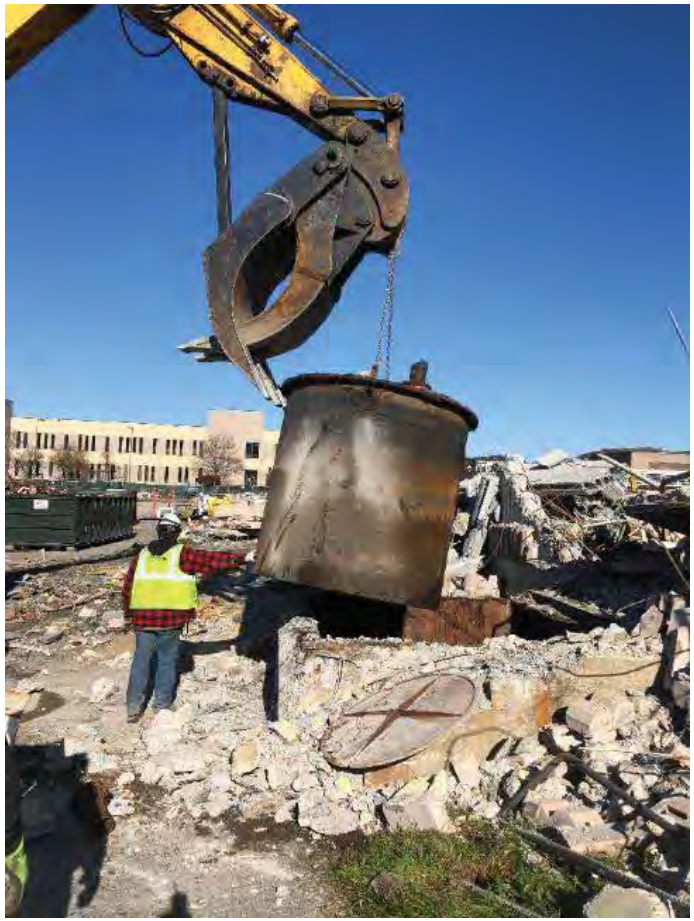
Pumping Water Out Of Solvent Tank



Removal Of Previously Closed Out Solvent Tank

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste-Mixed Spill Tank
Unit ID # 208, Index No. 20180001 – Verified 11/8/2018

Removal Of Previously Closed Out Solvent Tank



Inside Vault After Solvent Tank Was Removed

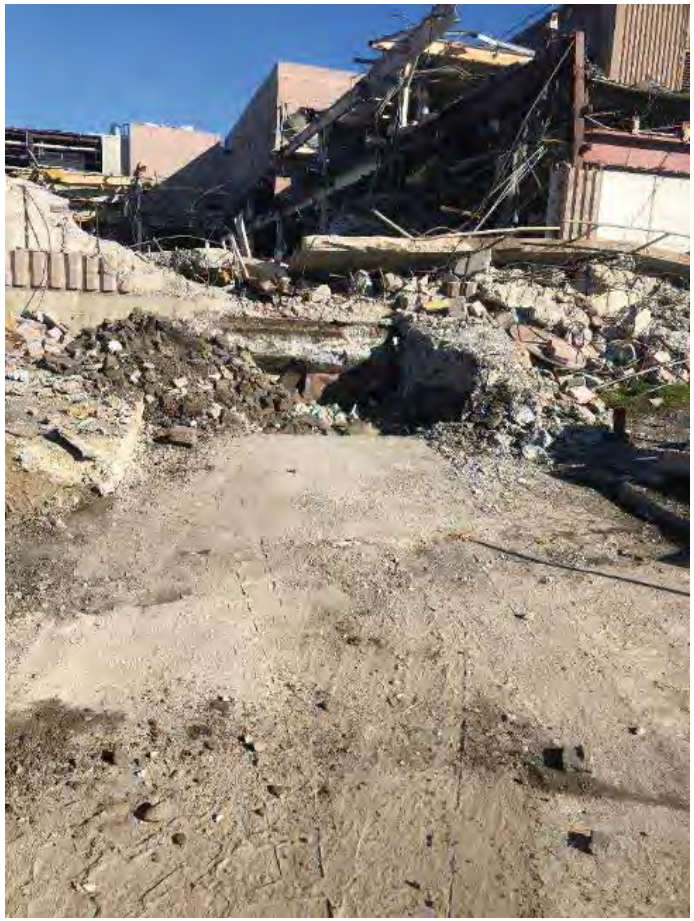
B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste-Mixed Spill Tank
Unit ID # 208, Index No. 20180001 – Verified 11/8/2018

Inside Vault After Solvent Tank Was Removed

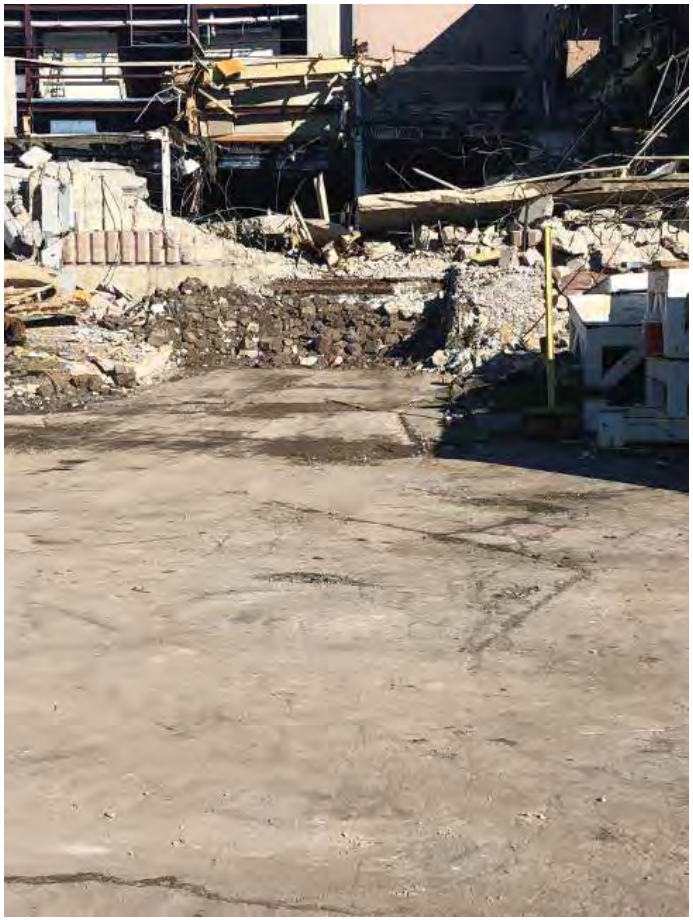
Inside Vault After Solvent Tank Was Removed

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste-Mixed Spill Tank
Unit ID # 208, Index No. 20180001 – Verified 11/8/2018

Vault Backfilled



Vault Backfilled



B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Fluoride Transfer Piping
Unit ID # B322-FL, Index No. 20180002 – Verified 11/21/2018

Fluoride Pipe
Pre-Removal

Fluoride Pipe
Pre-Removal

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Fluoride Transfer Piping
Unit ID # B322-FL, Index No. 20180002 – Verified 11/21/2018

Fluoride Pipe
Pre-Removal

Fluoride Pipe
Pre-Removal

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Fluoride Transfer Piping
Unit ID # B322-FL, Index No. 20180002 – Verified 11/21/2018

Fluoride Pipe Pre-Removal

Fluoride Pipe Sampled And Inspected After Being Cleaned

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Fluoride Transfer Piping
Unit ID # B322-FL, Index No. 20180002 – Verified 11/21/2018

Fluoride Pipe Sampled And Inspected After Being Cleaned

Fluoride Pipe Sampled And Inspected After Being Cleaned

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Fluoride Transfer Piping
Unit ID # B322-FL, Index No. 20180002 – Verified 11/21/2018

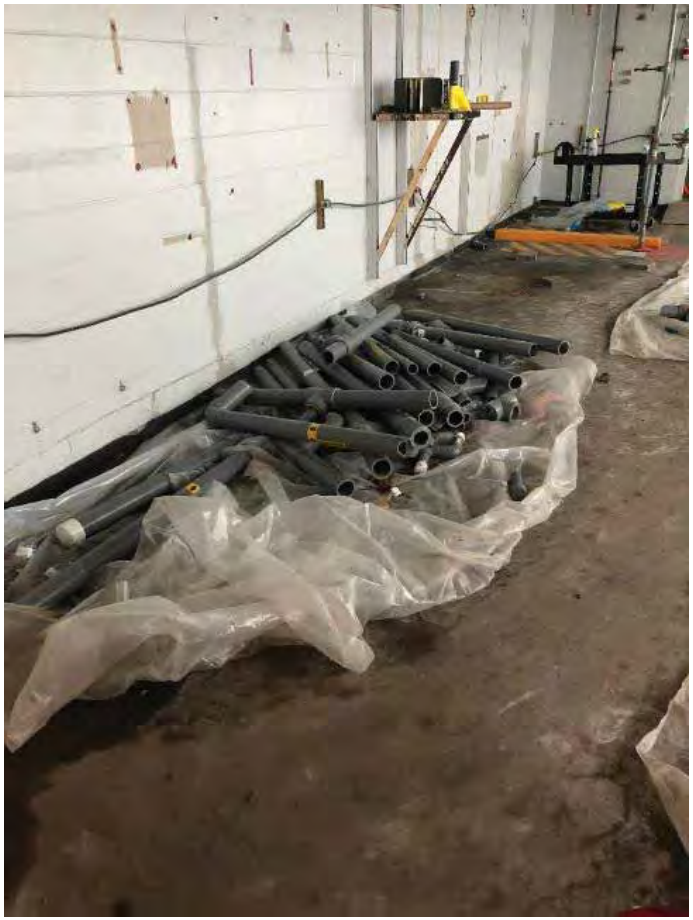
Fluoride Pipe Sampled And Inspected After Being Cleaned

Fluoride Pipe Sampled And Inspected After Being Cleaned

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Fluoride Transfer Piping
Unit ID # B322-FL, Index No. 20180002 – Verified 11/21/2018

Fluoride Pipe Loaded Out In Dumpster After Sampled And Inspected

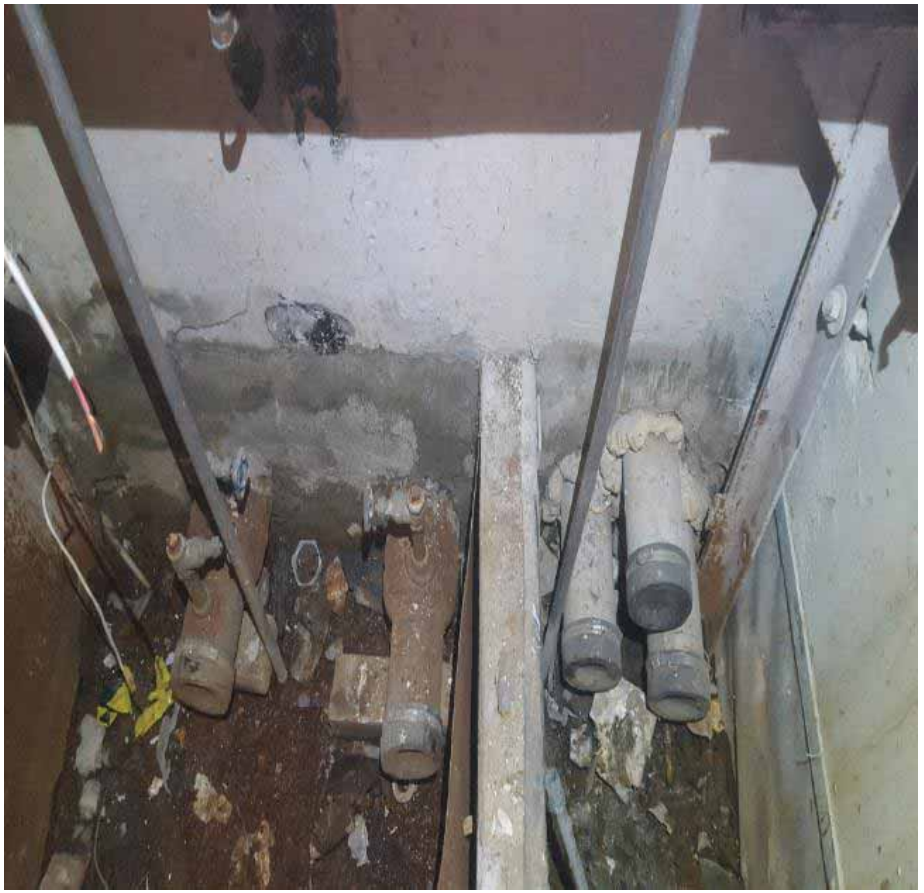
Fluoride Pipe That Has Been Removed From B322 Waiting To Be Cleaned



B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Fluoride Transfer Piping
Unit ID # B322-FL, Index No. 20180002 – Verified 11/21/2018

Fluoride Pipe Loaded Out In Dumpster After Sampled And Inspected

Fluoride Pipe Going Out Of Building Capped



B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Fluoride Transfer Piping
Unit ID # B322-FL, Index No. 20180002 – Verified 11/21/2018

Cleaned Trench After Fluoride Pipe Was Removed

Cleaned Trench After Fluoride Pipe Was Removed

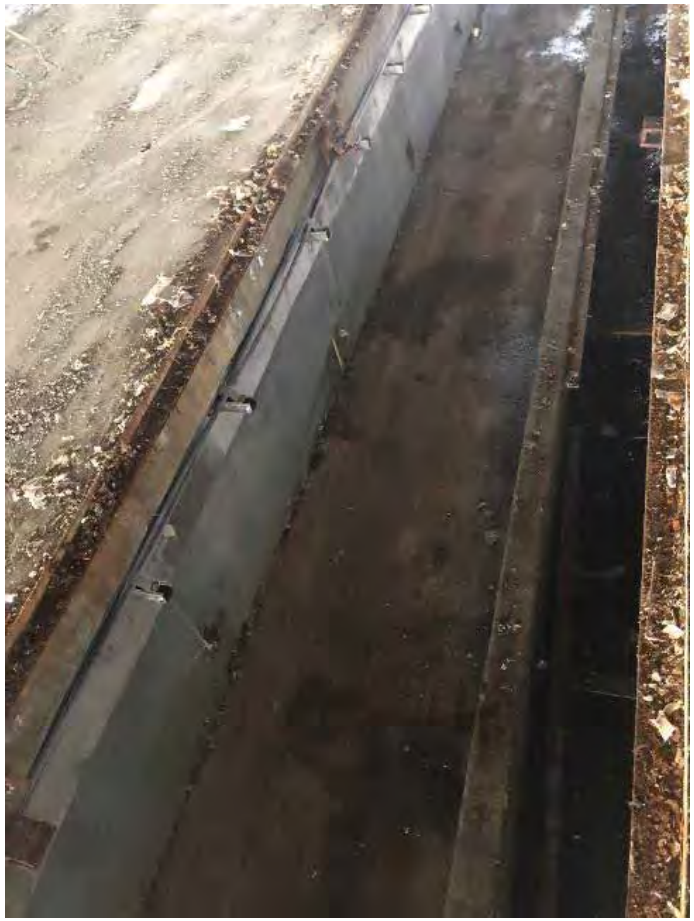
B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Fluoride Transfer Piping
Unit ID # B322-FL, Index No. 20180002 – Verified 11/21/2018

Cleaned Trench After Fluoride Pipe Was Removed

Cleaned Trench After Fluoride Pipe Was Removed

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Fluoride Transfer Piping
Unit ID # B322-FL, Index No. 20180002 – Verified 11/21/2018

Cleaned Trench After Fluoride Pipe Was Removed



Cleaned Trench After Fluoride Pipe Was Removed

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Industrial Waste Transfer Piping
Unit ID # B322-IW, Index No. 20180003 – Verified 9/21/2018

Industrial Waste Pipe
Before Removal

Industrial Waste Pipe
Before Removal

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Industrial Waste Transfer Piping
Unit ID # B322-IW, Index No. 20180003 – Verified 9/21/2018

Industrial Waste Pipe Sampled And Inspected After Being Cleaned

Industrial Waste Pipe Sampled And Inspected After Being Cleaned

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Industrial Waste Transfer Piping
Unit ID # B322-IW, Index No. 20180003 – Verified 9/21/2018

Industrial Waste Pipe Sampled And Inspected After Being Cleaned

Industrial Waste Pipe Sampled And Inspected After Being Cleaned

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Industrial Waste Transfer Piping
Unit ID # B322-IW, Index No. 20180003 – Verified 9/21/2018

Industrial Waste Pipe Sampled And Inspected After Being Cleaned

Industrial Waste Pipe Sampled And Inspected After Being Cleaned

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Industrial Waste Transfer Piping
Unit ID # B322-IW, Index No. 20180003 – Verified 9/21/2018

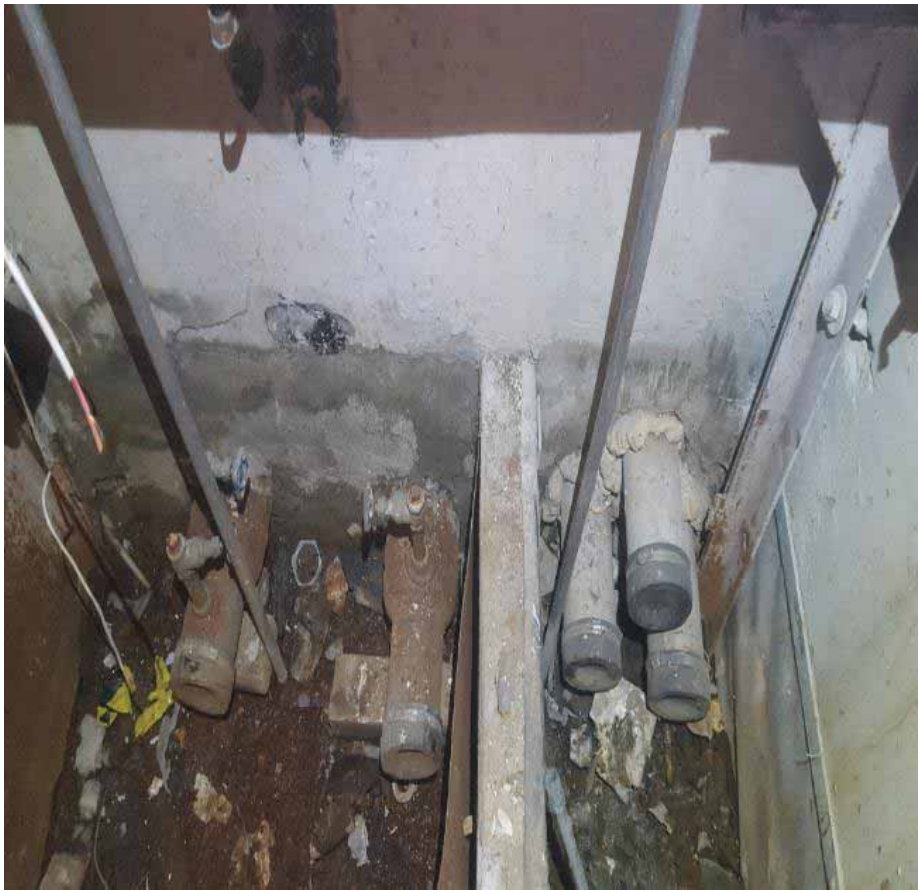
Industrial Waste Pipe Sampled And Inspected After Being Cleaned

Industrial Waste Pipe Sampled And Inspected After Being Cleaned

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Industrial Waste Transfer Piping
Unit ID # B322-IW, Index No. 20180003 – Verified 9/21/2018

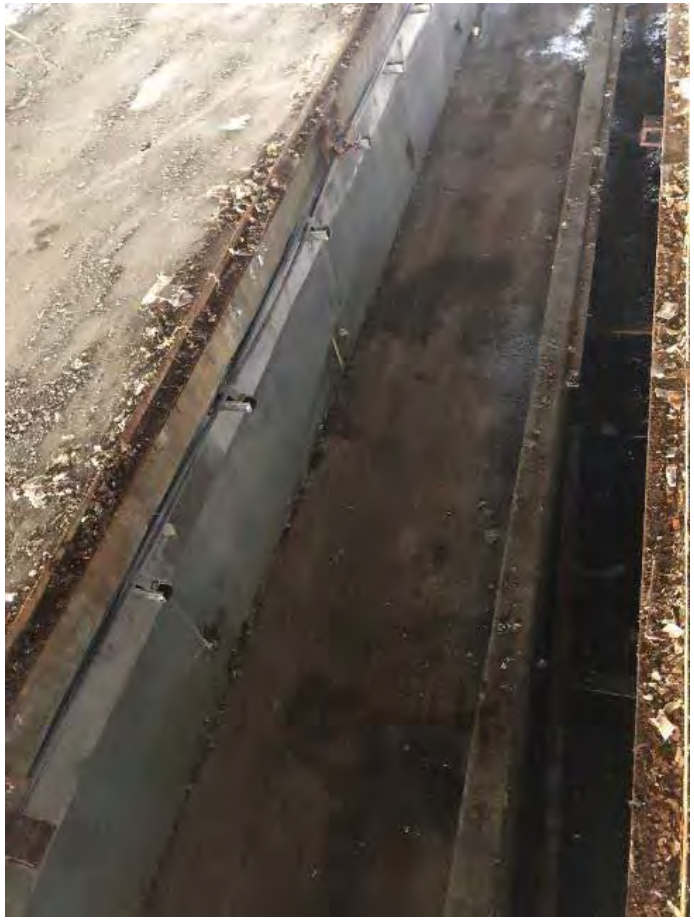
Industrial Waste Pipe Loaded Out In Dumpster After Sampled And Inspected

Industrial Waste Pipe Going Out Of Building Capped



B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Industrial Waste Transfer Piping
Unit ID # B322-IW, Index No. 20180003 – Verified 9/21/2018

Cleaned Trench After Industrial Waste Pipe Was Removed



Cleaned Trench After Industrial Waste Pipe Was Removed

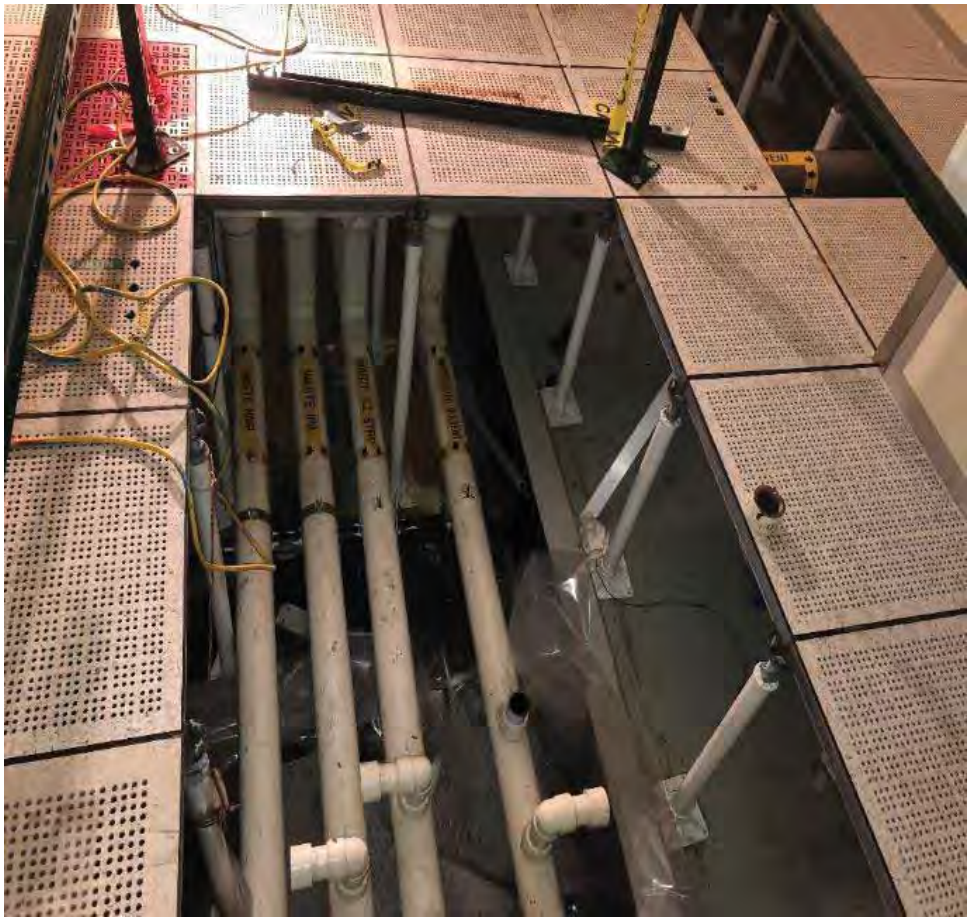
B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Industrial Waste Transfer Piping
Unit ID # B322-IW, Index No. 20180003 – Verified 9/21/2018

Cleaned Trench After Industrial Waste Pipe Was Removed

Cleaned Trench After Industrial Waste Pipe Was Removed

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste Transfer Piping
Unit ID # B322-SO, Index No. 20180004 – Verified 10/2/2018

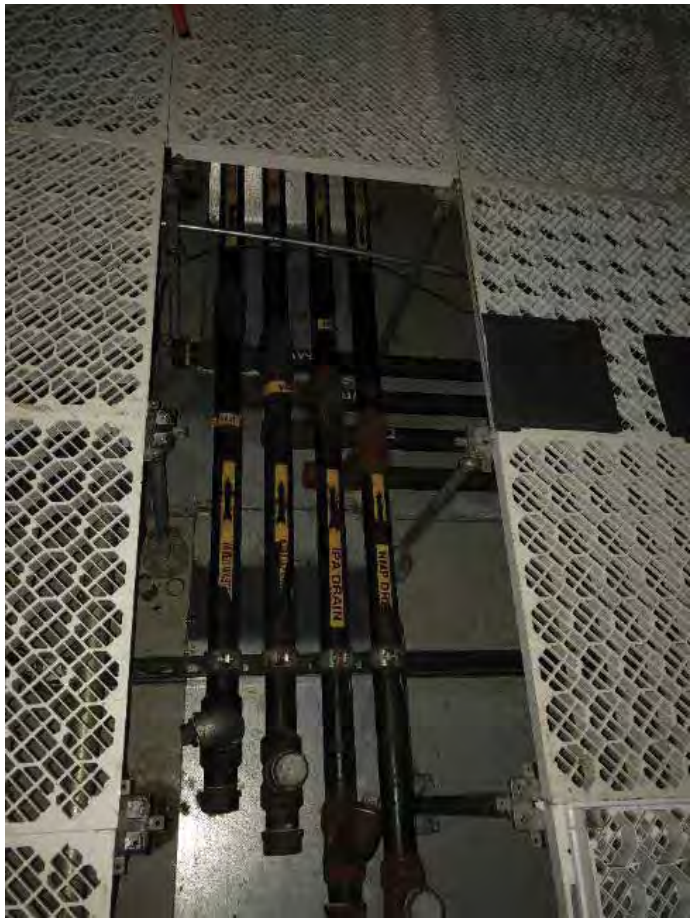
Solvent Pipe
Pre-Removal



Solvent Pipe
Pre-Removal

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste Transfer Piping
Unit ID # B322-SO, Index No. 20180004 – Verified 10/2/2018

Solvent Pipe
Pre-Removal



Solvent Pipe
Pre-Removal

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste Transfer Piping
Unit ID # B322-SO, Index No. 20180004 – Verified 10/2/2018

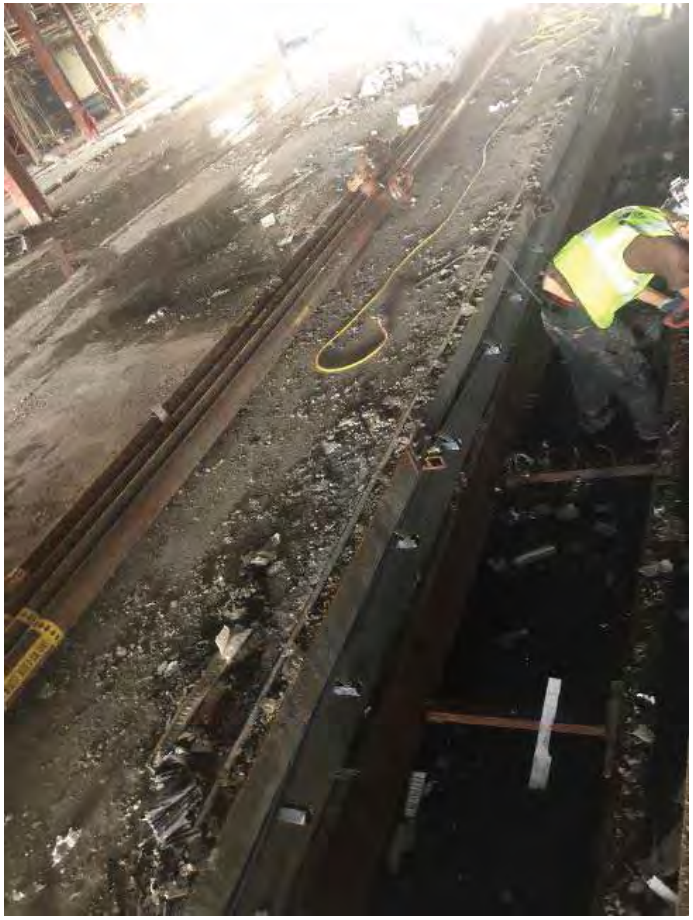
Solvent Pipe
Pre-Removal

Solvent Pipe
Pre-Removal

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste Transfer Piping
Unit ID # B322-SO, Index No. 20180004 – Verified 10/2/2018

Removal Of Solvent Pipe

Removal Of Solvent Pipe



B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste Transfer Piping
Unit ID # B322-SO, Index No. 20180004 – Verified 10/2/2018

Removal Of Solvent Pipe

Solvent Pipe In Trench

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Solvent Waste Transfer Piping
Unit ID # B322-SO, Index No. 20180004 – Verified 10/2/2018

Solvent Pipe Removed

Roll-off Container For Hazardous Waste Solvent Pipe

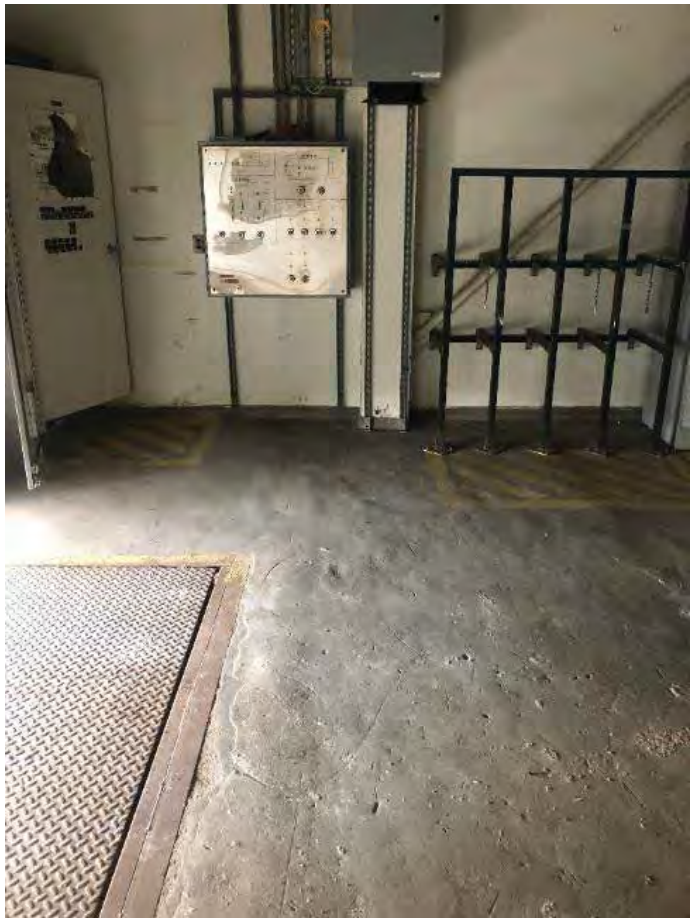
B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Container Waste Loading/Unloading Area
Unit ID # CW L/UL 322 , Index No. 20180005 – Verified 8/20/2018

Pre-Decontaminated

Pre-Decontaminated

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Container Waste Loading/Unloading Area
Unit ID # CW L/UL 322 , Index No. 20180005 – Verified 8/20/2018

Decontaminated



Decontaminated

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Container Waste Loading/Unloading Area
Unit ID # CW L/UL 322 , Index No. 20180005 – Verified 8/20/2018

Decontaminated

Decontaminated

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Container Waste Loading/Unloading Area
Unit ID # CW L/UL 322 , Index No. 20180005 – Verified 8/20/2018

Decontaminated

Decontaminated

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Container Waste Loading/Unloading Area
Unit ID # CW L/UL 322 , Index No. 20180005 – Verified 8/20/2018

Decontaminated

Decontaminated

B322 RCRA Solid Waste Management Unit Consulting and Third-Party Oversight
SWMU Removal Documentation
SWMU B/322 Container Waste Loading/Unloading Area
Unit ID # CW L/UL 322 , Index No. 20180005 – Verified 8/20/2018

Decontaminated

Decontaminated

ATTACHMENT C

B322 SWMU Decontamination Verification Tables

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-1	5.5	Negative	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-2	5.5	Negative	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-3	5.5	Negative	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-4	5.5	Negative	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-5	5.5	Negative	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-6	5.5	Negative	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-7	5.5	Negative	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-8	5.5	Negative	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-9	5.5	Negative	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-10	5.5	Negative	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-11	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-12	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-13	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-14	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-15	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-16	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-17	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-18	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-19	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-20	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-21	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-22	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-23	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-24	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-25	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-26	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-27	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-28	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-29	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-30	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-31	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-32	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-33	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-34	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-35	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-36	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-37	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-38	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-39	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-40	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-41	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-42	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-43	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-44	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-45	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-46	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-47	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-48	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-49	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-50	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-51	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-52	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-53	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-54	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-55	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-56	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-57	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-58	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-59	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-60	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-61	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-62	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-63	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-64	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-65	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-66	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-67	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-68	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-69	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-70	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-71	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-72	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-73	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-74	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-75	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-76	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-77	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-78	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-79	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-80	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-81	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-82	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-83	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-84	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-85	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-86	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-87	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-88	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-89	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-90	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-91	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-92	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-93	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-94	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-95	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-96	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-97	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-98	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-99	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-100	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-101	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-102	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-103	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-104	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-105	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-106	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-107	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-108	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-109	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-110	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-111	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-112	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-113	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-114	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-115	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-116	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-117	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-118	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-119	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-120	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-121	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-122	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-123	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-124	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-125	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-126	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-127	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-128	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-129	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-130	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-131	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-132	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-133	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-134	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-135	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-136	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-137	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-138	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-139	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-140	5.5	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-141	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-142	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-143	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-144	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-145	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-146	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-147	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-148	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-149	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-150	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-151	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-152	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-153	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-154	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-155	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-156	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
5/16/2018	B322	B322-FL	B322-FL-157	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-158	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-159	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-160	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-161	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-162	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-163	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-164	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-165	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-166	6.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-167	7.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22
5/16/2018	B322	B322-FL	B322-FL-168	7.0	NA	Y	PVC fluoride pipe from area between B16-B22 and K16-K22

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
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RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-170	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-171	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-172	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-173	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-174	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-175	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-176	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-177	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-178	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-179	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-180	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-181	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
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GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-182	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-183	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-184	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-185	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-186	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-187	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-188	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-189	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-190	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-191	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-192	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-193	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-194	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-195	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-196	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-197	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-198	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-199	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-200	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-201	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-202	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-203	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-204	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-205	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-206	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-207	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-208	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-209	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-210	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-211	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-212	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-213	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-214	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-215	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-216	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-217	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-218	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-219	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-220	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-221	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-222	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-223	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-224	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-225	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-226	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-227	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-228	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-229	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-230	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-231	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-232	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-233	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-234	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-235	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-236	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-237	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-238	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-239	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-240	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-241	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-242	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-243	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-244	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-245	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-246	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-247	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-248	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-249	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-250	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-251	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-252	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-253	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-254	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-255	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-256	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-257	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-258	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-259	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-260	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-261	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-262	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-263	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-264	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-265	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-266	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-267	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-268	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-269	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-270	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-271	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-272	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-273	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-274	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-275	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-276	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-277	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-278	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-279	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-280	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-281	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-282	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-283	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-284	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-285	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-286	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-287	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-288	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-289	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-290	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-291	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-292	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-293	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-294	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-295	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-296	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-297	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-298	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-299	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-300	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-301	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
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GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-302	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-303	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-304	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-305	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-306	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-307	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-308	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-309	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-310	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-311	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-312	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-313	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-314	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-315	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-316	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-317	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-318	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-319	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-320	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-321	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-322	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-323	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-324	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-325	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
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GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-326	5.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-327	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-328	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-329	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-330	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-331	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-332	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-333	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-334	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-335	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-336	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-337	6.0	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-338	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-339	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-340	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-341	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-342	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-343	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-344	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-345	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-346	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-347	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-348	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-349	6.0	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
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SWMU Removal Verification Data
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GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-350	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-351	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-352	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-353	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-354	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-355	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-356	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-357	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-358	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-359	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-360	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-361	6.0	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
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GLOBALFOUNDRIES
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-362	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-363	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-364	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-365	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-366	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-367	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-368	6.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-369	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-370	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-371	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-372	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-373	6.5	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-374	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-375	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-376	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-377	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-378	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-379	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-380	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-381	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-382	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-383	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-384	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-385	6.5	NA	Y	PVC fluoride pipe from B322

Notes:
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Building 322
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/12/2018	B322	B322-FL	B322-FL-386	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-387	6.5	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-388	7.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-389	7.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-390	7.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-391	7.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-392	7.0	NA	Y	PVC fluoride pipe from B322
6/12/2018	B322	B322-FL	B322-FL-393	7.0	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-394	5.5	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-395	5.5	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-396	5.5	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-397	5.5	NA	Y	PVC fluoride pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
6/28/2018	B322	B322-FL	B322-FL-398	5.5	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-399	5.5	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-400	5.5	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-401	5.5	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-402	5.5	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-403	5.5	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-404	5.5	NA	Y	PVC fluoride pipe from B322
6/28/2018	B322	B322-FL	B322-FL-405	5.5	NA	Y	PVC fluoride pipe from B322
8/6/2018	B322	B322-FL	B322-FL-406	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-407	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-408	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-409	5.5	NA	Y	PVC fluoride Main pipe from B322 trench

Notes:
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
8/6/2018	B322	B322-FL	B322-FL-410	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-411	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-412	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-413	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-414	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-415	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-416	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-417	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-418	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-419	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-420	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-421	5.5	NA	Y	PVC fluoride Main pipe from B322 trench

Notes:
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Building 322
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GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
8/6/2018	B322	B322-FL	B322-FL-422	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-423	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-424	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-425	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-426	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-427	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-428	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-429	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-430	5.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-431	6.0	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-432	6.0	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-433	6.0	NA	Y	PVC fluoride Main pipe from B322 trench

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
8/6/2018	B322	B322-FL	B322-FL-434	6.0	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-435	6.0	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-436	6.0	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-437	6.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-438	7.0	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-439	7.5	NA	Y	PVC fluoride Main pipe from B322 trench
8/6/2018	B322	B322-FL	B322-FL-440	5.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-441	5.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-442	5.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-443	5.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-444	5.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-445	5.0	NA	Y	PVC fluoride lateral/drain pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
8/6/2018	B322	B322-FL	B322-FL-446	5.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-447	5.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-448	5.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-449	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-450	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-451	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-452	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-453	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-454	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-455	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-456	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-457	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
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RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
8/6/2018	B322	B322-FL	B322-FL-458	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-459	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-460	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-461	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-462	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-463	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-464	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-465	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-466	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-467	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-468	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-469	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
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RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
8/6/2018	B322	B322-FL	B322-FL-470	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-471	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-472	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-473	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-474	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-475	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-476	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-477	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-478	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-479	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-480	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-481	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
8/6/2018	B322	B322-FL	B322-FL-482	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-483	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-484	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-485	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-486	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-487	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-488	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-489	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-490	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-491	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-492	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-493	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
8/6/2018	B322	B322-FL	B322-FL-494	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-495	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-496	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-497	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-498	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-499	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-500	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-501	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-502	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-503	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-504	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-505	5.5	NA	Y	PVC fluoride lateral/drain pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
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RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
8/6/2018	B322	B322-FL	B322-FL-506	6.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-507	6.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-508	6.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-509	6.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-510	6.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-511	6.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-512	6.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-513	6.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-514	6.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-515	6.0	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-516	6.5	NA	Y	PVC fluoride lateral/drain pipe from B322
8/6/2018	B322	B322-FL	B322-FL-517	6.5	NA	Y	PVC fluoride lateral/drain pipe from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
8/6/2018	B322	B322-FL	B322-FL-518	6.5	NA	Y	PVC fluoride lateral/drain pipe from B322
9/4/2018	B322	B322-FL	B322-FL-519	5.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-520	5.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-521	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-522	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-523	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-524	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-525	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-526	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-527	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-528	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-529	5.5	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-530	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-531	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-532	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-533	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-534	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-535	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-536	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-537	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-538	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-539	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-540	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-541	5.5	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-542	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-543	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-544	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-545	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-546	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-547	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-548	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-549	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-550	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-551	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-552	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-553	5.5	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-554	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-555	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-556	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-557	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-558	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-559	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-560	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-561	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-562	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-563	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-564	5.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-565	5.5	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-566	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-567	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-568	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-569	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-570	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-571	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-572	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-573	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-574	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-575	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-576	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-577	6.0	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-578	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-579	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-580	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-581	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-582	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-583	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-584	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-585	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-586	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-587	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-588	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-589	6.0	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-590	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-591	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-592	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-593	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-594	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-595	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-596	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-597	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-598	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-599	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-600	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-601	6.0	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-602	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-603	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-604	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-605	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-606	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-607	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-608	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-609	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-610	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-611	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-612	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-613	6.0	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-614	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-615	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-616	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-617	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-618	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-619	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-620	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-621	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-622	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-623	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-624	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-625	6.0	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-626	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-627	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-628	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-629	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-630	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-631	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-632	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-633	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-634	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-635	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-636	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-637	6.0	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-638	6.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-639	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-640	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-641	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-642	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-643	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-644	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-645	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-646	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-647	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-648	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-649	6.5	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-650	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-651	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-652	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-653	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-654	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-655	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-656	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-657	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-658	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-659	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-660	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-661	6.5	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-662	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-663	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-664	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-665	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-666	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-667	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-668	6.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-669	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-670	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-671	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-672	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-673	7.0	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-674	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-675	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-676	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-677	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-678	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-679	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-680	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-681	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-682	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-683	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-684	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-685	7.0	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/4/2018	B322	B322-FL	B322-FL-686	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-687	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-688	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-689	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-690	7.0	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-691	7.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-692	7.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-693	7.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-694	7.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-695	7.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-696	7.5	NA	Y	PVC fluoride main pipe from trench from B322
9/4/2018	B322	B322-FL	B322-FL-697	7.5	NA	Y	PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/21/2018	B322	B322-FL	B322-FL-698	5.5	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-699	5.5	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-700	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-701	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-702	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-703	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-704	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-705	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-706	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-707	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-708	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-709	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
9/21/2018	B322	B322-FL	B322-FL-710	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-711	6.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-712	6.5	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-713	6.5	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-714	6.5	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-715	6.5	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-716	6.5	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-717	6.5	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-718	7.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-719	7.0	NA	Y	6" PVC fluoride main pipe from trench from B322
9/21/2018	B322	B322-FL	B322-FL-720	7.0	NA	Y	6" PVC fluoride main pipe from trench from B322
11/21/2018	B322	B322-FL	B322-FL-721	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

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Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
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Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
11/21/2018	B322	B322-FL	B322-FL-722	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-723	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-724	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-725	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-726	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-727	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-728	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-729	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-730	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-731	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-732	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-733	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
11/21/2018	B322	B322-FL	B322-FL-734	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-735	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-736	5.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-737	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-738	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-739	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-740	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-741	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-742	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-743	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-744	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-745	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
11/21/2018	B322	B322-FL	B322-FL-746	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-747	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-748	5.5	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-749	6.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-750	6.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-751	6.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-752	6.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-753	6.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.
11/21/2018	B322	B322-FL	B322-FL-754	6.0	NA	Y	PVC fluoride pipe from trench that ran north/south between B & C line at north end of building from B322.

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-1

Building 322
Fluoride/Heavy Metals Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N)	Description
Total Number of Samples	753	Maximum pH	7.5	Minimum pH	5.0		

Notes:

(1) B322-FL is the Fluoride/Heavy Metal Wastewater Transfer Piping in B322, comprised of Schedule 80 PVC. All "FL" drains are labeled "Fluoride". Wastewater had been conveyed to the onsite fluoride/heavy metals wastewater treatment facility.

(2) HYDRION® pH test strips with range from 5.0 to 9.0, at 0.5 standard unit (SU) increments, were used. Test strips with pH range of 0-6 were used for pH 5.0 confirmation.

(3) Debris free condition was observed in each 5-6 foot section of PVC drain pipe, when viewed through each section length from either end.

Notes:
1 - HYDRION pH test strips with range from 5.0 to 9.0

Table C-2

Building 322
Industrial Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-1	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-2	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-3	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-4	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-5	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-6	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-7	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-8	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-9	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-10	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-11	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-12	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-13	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-14	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-15	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-16	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Building 322
Industrial Wastewater Transfer piping
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-17	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-18	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-19	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-20	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-21	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-22	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-23	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-24	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-25	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-26	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-27	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-28	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-29	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-30	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-31	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-32	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Industrial Wastewater Transfer piping
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-33	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-34	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-35	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-36	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-37	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-38	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-39	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-40	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-41	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-42	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-43	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-44	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-45	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-46	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-47	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-48	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Building 322
Industrial Wastewater Transfer piping
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RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-49	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-50	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-51	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-52	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-53	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-54	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-55	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-56	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-57	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-58	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-59	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-60	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-61	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-62	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-63	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-64	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Building 322
Industrial Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-65	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-66	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-67	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-68	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-69	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-70	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-71	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-72	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-73	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-74	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-75	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-76	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-77	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-78	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-79	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-80	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Building 322
Industrial Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
GLOBALFOUNDRIES
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-81	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-82	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-83	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-84	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-85	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-86	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-87	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-88	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-89	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-90	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-91	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-92	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-93	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-94	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-95	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-96	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Building 322
Industrial Wastewater Transfer piping
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-97	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-98	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-99	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-100	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-101	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-102	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-103	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-104	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-105	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-106	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-107	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-108	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-109	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-110	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-111	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-112	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-113	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-114	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-115	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-116	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-117	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-118	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-119	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-120	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-121	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-122	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-123	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-124	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-125	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-126	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-127	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-128	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-129	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-130	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-131	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-132	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-133	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-134	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-135	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-136	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-137	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-138	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-139	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-140	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-141	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-142	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-143	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-144	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-145	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-146	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-147	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-148	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-149	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-150	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-151	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-152	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-153	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-154	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-155	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-156	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-157	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-158	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-159	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-160	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-161	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-162	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-163	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-164	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-165	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-166	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-167	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-168	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-169	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-170	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-171	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-172	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-173	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-174	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-175	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-176	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-177	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-178	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-179	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-180	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-181	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-182	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-183	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-184	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-185	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-186	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-187	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-188	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-189	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-190	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-191	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-192	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-193	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-194	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-195	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-196	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-197	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-198	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-199	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-200	5.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-201	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-202	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-203	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-204	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-205	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-206	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-207	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-208	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-209	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-210	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-211	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-212	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-213	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-214	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-215	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-216	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-217	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-218	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-219	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-220	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-221	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-222	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-223	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-224	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-225	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-226	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-227	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-228	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-229	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-230	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-231	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-232	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-233	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-234	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-235	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-236	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-237	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-238	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-239	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-240	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Industrial Wastewater Transfer piping
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RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-241	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-242	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-243	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-244	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-245	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-246	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-247	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-248	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-249	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-250	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-251	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-252	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-253	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-254	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-255	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-256	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Building 322
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RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-257	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-258	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-259	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-260	6.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-261	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-262	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-263	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-264	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-265	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-266	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-267	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-268	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-269	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-270	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-271	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-272	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Industrial Wastewater Transfer piping
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RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-273	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-274	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-275	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-276	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-277	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-278	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-279	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-280	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-281	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-282	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-283	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-284	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-285	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-286	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-287	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-288	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Industrial Wastewater Transfer piping
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-289	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-290	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-291	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-292	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-293	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-294	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-295	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-296	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-297	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-298	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-299	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-300	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-301	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-302	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-303	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-304	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
5/25/2018	B322	B322-IW	B322-IW-305	6.5	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-306	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-307	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-308	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-309	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-310	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-311	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-312	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-313	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-314	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-315	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-316	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-317	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-318	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
5/25/2018	B322	B322-IW	B322-IW-319	7.0	NA	Y	PVC acid pipe from area between B16-B22 and K16-K22
6/6/208	B322	B322-IW	B322-IW-320	5.5	NA	Y	PVC acid pipe from B322

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Industrial Wastewater Transfer piping
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-321	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-322	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-323	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-324	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-325	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-326	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-327	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-328	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-329	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-330	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-331	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-332	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-333	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-334	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-335	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-336	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-337	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-338	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-339	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-340	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-341	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-342	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-343	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-344	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-345	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-346	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-347	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-348	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-349	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-350	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-351	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-352	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-353	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-354	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-355	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-356	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-357	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-358	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-359	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-360	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-361	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-362	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-363	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-364	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-365	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-366	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-367	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-368	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-369	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-370	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-371	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-372	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-373	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-374	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-375	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-376	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-377	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-378	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-379	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-380	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-381	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-382	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-383	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-384	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-385	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-386	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-387	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-388	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-389	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-390	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-391	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-392	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-393	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-394	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-395	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-396	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-397	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-398	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-399	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-400	5.5	NA	Y	PVC acid pipe from B322

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RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-401	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-402	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-403	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-404	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-405	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-406	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-407	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-408	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-409	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-410	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-411	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-412	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-413	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-414	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-415	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-416	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-417	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-418	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-419	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-420	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-421	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-422	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-423	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-424	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-425	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-426	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-427	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-428	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-429	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-430	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-431	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-432	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-433	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-434	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-435	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-436	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-437	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-438	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-439	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-440	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-441	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-442	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-443	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-444	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-445	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-446	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-447	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-448	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-449	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-450	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-451	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-452	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-453	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-454	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-455	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-456	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-457	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-458	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-459	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-460	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-461	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-462	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-463	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-464	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-465	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-466	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-467	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-468	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-469	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-470	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-471	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-472	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-473	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-474	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-475	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-476	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-477	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-478	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-479	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-480	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-481	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-482	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-483	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-484	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-485	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-486	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-487	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-488	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-489	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-490	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-491	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-492	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-493	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-494	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-495	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-496	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-497	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-498	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-499	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-500	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-501	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-502	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-503	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-504	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-505	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-506	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-507	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-508	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-509	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-510	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-511	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-512	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-513	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-514	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-515	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-516	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-517	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-518	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-519	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-520	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-521	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-522	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-523	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-524	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-525	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-526	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-527	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-528	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-529	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-530	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-531	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-532	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-533	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-534	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-535	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-536	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-537	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-538	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-539	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-540	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-541	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-542	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-543	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-544	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-545	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-546	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-547	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-548	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-549	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-550	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-551	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-552	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-553	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-554	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-555	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-556	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-557	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-558	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-559	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-560	5.5	NA	Y	PVC acid pipe from B322

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Building 322
Industrial Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-561	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-562	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-563	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-564	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-565	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-566	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-567	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-568	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-569	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-570	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-571	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-572	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-573	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-574	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-575	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-576	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-577	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-578	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-579	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-580	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-581	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-582	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-583	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-584	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-585	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-586	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-587	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-588	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-589	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-590	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-591	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-592	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-593	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-594	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-595	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-596	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-597	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-598	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-599	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-600	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-601	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-602	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-603	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-604	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-605	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-606	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-607	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-608	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-609	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-610	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-611	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-612	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-613	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-614	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-615	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-616	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-617	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-618	5.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-619	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-620	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-621	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-622	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-623	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-624	6.0	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-625	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-626	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-627	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-628	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-629	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-630	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-631	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-632	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-633	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-634	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-635	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-636	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-637	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-638	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-639	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-640	6.0	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-641	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-642	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-643	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-644	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-645	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-646	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-647	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-648	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-649	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-650	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-651	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-652	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-653	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-654	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-655	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-656	6.0	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-657	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-658	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-659	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-660	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-661	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-662	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-663	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-664	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-665	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-666	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-667	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-668	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-669	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-670	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-671	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-672	6.0	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-673	6.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-674	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-675	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-676	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-677	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-678	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-679	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-680	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-681	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-682	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-683	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-684	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-685	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-686	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-687	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-688	6.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-689	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-690	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-691	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-692	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-693	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-694	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-695	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-696	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-697	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-698	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-699	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-700	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-701	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-702	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-703	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-704	6.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-705	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-706	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-707	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-708	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-709	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-710	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-711	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-712	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-713	6.5	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-714	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-715	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-716	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-717	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-718	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-719	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-720	7.0	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/6/208	B322	B322-IW	B322-IW-721	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-722	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-723	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-724	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-725	7.0	NA	Y	PVC acid pipe from B322
6/6/208	B322	B322-IW	B322-IW-726	7.0	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-727	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-728	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-729	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-730	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-731	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-732	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-733	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-734	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-735	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-736	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/12/2018	B322	B322-IW	B322-IW-737	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-738	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-739	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-740	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-741	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-742	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-743	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-744	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-745	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-746	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-747	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-748	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-749	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-750	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-751	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-752	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/12/2018	B322	B322-IW	B322-IW-753	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-754	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-755	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-756	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-757	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-758	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-759	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-760	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-761	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-762	5.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-763	6.0	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-764	6.0	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-765	6.0	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-766	6.0	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-767	6.0	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-768	6.0	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/12/2018	B322	B322-IW	B322-IW-769	6.0	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-770	6.0	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-771	6.0	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-772	6.0	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-773	6.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-774	6.5	NA	Y	PVC acid pipe from B322
6/12/2018	B322	B322-IW	B322-IW-775	7.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-776	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-777	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-778	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-779	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-780	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-781	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-782	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-783	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-784	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-785	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-786	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-787	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-788	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-789	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-790	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-791	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-792	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-793	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-794	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-795	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-796	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-797	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-798	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-799	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-800	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-801	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-802	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-803	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-804	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-805	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-806	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-807	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-808	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-809	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-810	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-811	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-812	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-813	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-814	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-815	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-816	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-817	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-818	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-819	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-820	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-821	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-822	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-823	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-824	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-825	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-826	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-827	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-828	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-829	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-830	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-831	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-832	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-833	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-834	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-835	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-836	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-837	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-838	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-839	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-840	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-841	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-842	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-843	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-844	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-845	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-846	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-847	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-848	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-849	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-850	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-851	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-852	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-853	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-854	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-855	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-856	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-857	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-858	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-859	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-860	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-861	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-862	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-863	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-864	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-865	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-866	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-867	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-868	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-869	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-870	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-871	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-872	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-873	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-874	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-875	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-876	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-877	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-878	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-879	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-880	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-881	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-882	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-883	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-884	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-885	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-886	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-887	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-888	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-889	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-890	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-891	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-892	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-893	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-894	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-895	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-896	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-897	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-898	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-899	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-900	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-901	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-902	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-903	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-904	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-905	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-906	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-907	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-908	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-909	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-910	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-911	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-912	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-913	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-914	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-915	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-916	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-917	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-918	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-919	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-920	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-921	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-922	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-923	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-924	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-925	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-926	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-927	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-928	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-929	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-930	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-931	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-932	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-933	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-934	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-935	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-936	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-937	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-938	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-939	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-940	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-941	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-942	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-943	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-944	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-945	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-946	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-947	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-948	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-949	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-950	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-951	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-952	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-953	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-954	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-955	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-956	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-957	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-958	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-959	5.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-960	5.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-961	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-962	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-963	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-964	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-965	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-966	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-967	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-968	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-969	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-970	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-971	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-972	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-973	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-974	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-975	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-976	6.0	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-977	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-978	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-979	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-980	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-981	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-982	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-983	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-984	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-985	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-986	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-987	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-988	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-989	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-990	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-991	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-992	6.0	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-993	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-994	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-995	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-996	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-997	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-998	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-999	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1000	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1001	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1002	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1003	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1004	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1005	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1006	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1007	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1008	6.0	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-1009	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1010	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1011	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1012	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1013	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1014	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1015	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1016	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1017	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1018	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1019	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1020	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1021	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1022	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1023	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1024	6.0	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-1025	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1026	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1027	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1028	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1029	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1030	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1031	6.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1032	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1033	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1034	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1035	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1036	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1037	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1038	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1039	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1040	6.5	NA	Y	PVC acid pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
6/28/2018	B322	B322-IW	B322-IW-1041	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1042	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1043	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1044	6.5	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1045	7.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1046	7.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1047	7.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1048	7.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1049	7.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1050	7.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1051	7.0	NA	Y	PVC acid pipe from B322
6/28/2018	B322	B322-IW	B322-IW-1052	7.0	NA	Y	PVC acid pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1053	5.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1054	5.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1055	5.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1056	5.5	NA	Y	PVC acid Main pipe from B322 trench

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/6/2018	B322	B322-IW	B322-IW-1057	5.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1058	5.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1059	5.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1060	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1061	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1062	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1063	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1064	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1065	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1066	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1067	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1068	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1069	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1070	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1071	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1072	6.0	NA	Y	PVC acid Main pipe from B322 trench

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/6/2018	B322	B322-IW	B322-IW-1073	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1074	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1075	6.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1076	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1077	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1078	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1079	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1080	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1081	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1082	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1083	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1084	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1085	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1086	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1087	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1088	6.5	NA	Y	PVC acid Main pipe from B322 trench

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/6/2018	B322	B322-IW	B322-IW-1089	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1090	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1091	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1092	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1093	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1094	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1095	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1096	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1097	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1098	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1099	6.5	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1100	7.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1101	7.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1102	7.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1103	7.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1104	7.0	NA	Y	PVC acid Main pipe from B322 trench

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/6/2018	B322	B322-IW	B322-IW-1105	7.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1106	7.0	NA	Y	PVC acid Main pipe from B322 trench
8/6/2018	B322	B322-IW	B322-IW-1107	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1108	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1109	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1110	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1111	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1112	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1113	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1114	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1115	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1116	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1117	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1118	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1119	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1120	5.0	NA	Y	PVC acid lateral/drain pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/6/2018	B322	B322-IW	B322-IW-1121	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1122	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1123	5.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1124	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1125	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1126	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1127	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1128	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1129	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1130	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1131	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1132	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1133	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1134	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1135	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1136	6.0	NA	Y	PVC acid lateral/drain pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/6/2018	B322	B322-IW	B322-IW-1137	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1138	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1139	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1140	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1141	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1142	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1143	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1144	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1145	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1146	6.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1147	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1148	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1149	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1150	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1151	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1152	6.5	NA	Y	PVC acid lateral/drain pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/6/2018	B322	B322-IW	B322-IW-1153	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1154	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1155	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1156	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1157	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1158	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1159	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1160	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1161	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1162	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1163	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1164	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1165	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1166	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1167	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1168	6.5	NA	Y	PVC acid lateral/drain pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/6/2018	B322	B322-IW	B322-IW-1169	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1170	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1171	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1172	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1173	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1174	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1175	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1176	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1177	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1178	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1179	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1180	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1181	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1182	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1183	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1184	6.5	NA	Y	PVC acid lateral/drain pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/6/2018	B322	B322-IW	B322-IW-1185	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1186	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1187	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1188	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1189	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1190	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1191	6.5	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1192	7.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1193	7.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1194	7.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1195	7.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1196	7.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1197	7.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1198	7.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1199	7.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1200	7.0	NA	Y	PVC acid lateral/drain pipe from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/6/2018	B322	B322-IW	B322-IW-1201	7.0	NA	Y	PVC acid lateral/drain pipe from B322
8/6/2018	B322	B322-IW	B322-IW-1202	7.0	NA	Y	PVC acid lateral/drain pipe from B322
9/4/2018	B322	B322-IW	B322-IW-1203	5.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1204	5.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1205	5.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1206	5.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1207	5.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1208	5.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1209	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1210	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1211	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1212	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1213	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1214	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1215	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1216	5.5	NA	Y	PVC acid main pipe from trench from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1217	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1218	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1219	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1220	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1221	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1222	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1223	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1224	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1225	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1226	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1227	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1228	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1229	5.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1230	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1231	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1232	6.0	NA	Y	PVC acid main pipe from trench from B322

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Building 322
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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1233	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1234	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1235	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1236	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1237	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1238	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1239	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1240	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1241	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1242	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1243	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1244	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1245	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1246	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1247	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1248	6.0	NA	Y	PVC acid main pipe from trench from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1249	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1250	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1251	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1252	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1253	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1254	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1255	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1256	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1257	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1258	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1259	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1260	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1261	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1262	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1263	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1264	6.0	NA	Y	PVC acid main pipe from trench from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1265	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1266	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1267	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1268	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1269	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1270	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1271	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1272	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1273	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1274	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1275	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1276	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1277	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1278	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1279	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1280	6.0	NA	Y	PVC acid main pipe from trench from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1281	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1282	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1283	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1284	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1285	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1286	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1287	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1288	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1289	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1290	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1291	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1292	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1293	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1294	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1295	6.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1296	6.0	NA	Y	PVC acid main pipe from trench from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1297	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1298	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1299	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1300	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1301	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1302	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1303	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1304	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1305	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1306	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1307	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1308	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1309	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1310	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1311	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1312	6.5	NA	Y	PVC acid main pipe from trench from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1313	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1314	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1315	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1316	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1317	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1318	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1319	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1320	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1321	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1322	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1323	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1324	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1325	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1326	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1327	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1328	6.5	NA	Y	PVC acid main pipe from trench from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1329	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1330	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1331	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1332	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1333	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1334	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1335	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1336	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1337	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1338	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1339	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1340	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1341	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1342	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1343	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1344	6.5	NA	Y	PVC acid main pipe from trench from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1345	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1346	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1347	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1348	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1349	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1350	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1351	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1352	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1353	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1354	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1355	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1356	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1357	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1358	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1359	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1360	6.5	NA	Y	PVC acid main pipe from trench from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1361	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1362	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1363	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1364	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1365	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1366	6.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1367	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1368	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1369	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1370	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1371	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1372	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1373	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1374	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1375	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1376	7.0	NA	Y	PVC acid main pipe from trench from B322

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Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1377	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1378	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1379	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1380	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1381	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1382	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1383	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1384	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1385	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1386	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1387	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1388	7.0	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1389	7.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1390	7.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1391	7.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1392	7.5	NA	Y	PVC acid main pipe from trench from B322

Table C-2

Building 322
Industrial Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
9/4/2018	B322	B322-IW	B322-IW-1393	7.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1394	7.5	NA	Y	PVC acid main pipe from trench from B322
9/4/2018	B322	B322-IW	B322-IW-1395	7.5	NA	Y	PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1396	5.5	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1397	5.5	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1398	5.5	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1399	6.0	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1400	6.0	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1401	6.0	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1402	6.0	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1403	6.0	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1404	6.0	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1405	6.0	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1406	6.0	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1407	6.0	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1408	6.0	NA	Y	6" PVC acid main pipe from trench from B322

Table C-2

Building 322
Industrial Wastewater Transfer piping
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID# (1)	Sample #	Hydrion (2) (pH Test)	Hydrofluoric Acid (Positive/Negative)	Debris/Residue Free (Y/N) (3)	Description
9/21/2018	B322	B322-IW	B322-IW-1409	6.5	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1410	6.5	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1411	6.5	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1412	6.5	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1413	6.5	NA	Y	6" PVC acid main pipe from trench from B322
9/21/2018	B322	B322-IW	B322-IW-1414	6.5	NA	Y	6" PVC acid main pipe from trench from B322

Total Number of Samples: 1414 Maximum pH: 7.5 Minimum pH: 5.0

Notes:

(1) B322-IW is the Industrial Wastewater Transfer Piping in B322, comprised of Schedule 80 PVC. All "IW" drains are labeled "acid" or "industrial". Wastewater had been conveyed to the onsite acid wastewater treatment facility.

(2) HYDRION® pH test strips with range from 5.0 to 9.0, at 0.5 standard unit (SU) increments, were used. Test strips with pH range of 0-6 were used for pH 5.0 confirmation.

(3) Debris free condition was observed in each 5-6 foot section of PVC drain pipe, when viewed through each section length from either end.

Table C-3

Building 322
Container Waste Loading/Unloading Area
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/15/2018	B322	CW L/UL 322	B322-L/UL-1	6.0	NA	Pre-Decontamination	North East corner of Loading dock room floor.
8/15/2018	B322	CW L/UL 322	B322-L/UL-2	6.0	NA	Pre-Decontamination	Floor along east wall
8/15/2018	B322	CW L/UL 322	B322-L/UL-3	6.0	NA	Pre-Decontamination	East wall
8/15/2018	B322	CW L/UL 322	B322-L/UL-4	6.5	NA	Pre-Decontamination	Center floor with white debris
8/15/2018	B322	CW L/UL 322	B322-L/UL-5	6.5	NA	Pre-Decontamination	Loading dock room floor
8/15/2018	B322	CW L/UL 322	B322-L/UL-6	6.0	NA	Pre-Decontamination	Loading dock room floor
8/15/2018	B322	CW L/UL 322	B322-L/UL-7	6.0	NA	Pre-Decontamination	South wall
8/15/2018	B322	CW L/UL 322	B322-L/UL-8	7.5	NA	Pre-Decontamination	Loading dock floor
8/15/2018	B322	CW L/UL 322	B322-L/UL-9	6.0	NA	Pre-Decontamination	Loading dock floor
8/15/2018	B322	CW L/UL 322	B322-L/UL-10	5.5	NA	Pre-Decontamination	Loading dock floor
8/15/2018	B322	CW L/UL 322	B322-L/UL-11	6.0	NA	Pre-Decontamination	Loading dock floor
8/15/2018	B322	CW L/UL 322	B322-L/UL-12	7.0	NA	Pre-Decontamination	Loading dock floor
8/15/2018	B322	CW L/UL 322	B322-L/UL-13	6.0	NA	Pre-Decontamination	Loading dock floor

Table C-3

Building 322
Container Waste Loading/Unloading Area
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID# [1]	Sample #	Hydrion [2] (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N) [3]	Description
8/20/2018	B322	CW L/UL 322	B322-L/UL-14	6.0	NA	Y	North East corner of Loading dock room floor. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-15	6.0	NA	Y	Floor along east wall. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-16	6.0	NA	Y	East wall. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-17	6.5	NA	Y	Center floor where white debris was. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-18	6.5	NA	Y	Loading dock room floor. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-19	6.0	NA	Y	Loading dock room floor. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-20	6.0	NA	Y	South wall. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-21	7.5	NA	Y	Loading dock floor. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-22	6.0	NA	Y	Loading dock floor. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-23	5.5	NA	Y	Loading dock floor. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-24	6.0	NA	Y	Loading dock floor. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-25	7.0	NA	Y	Loading dock floor. After final cleaning done on 8/20/18 by Highground.
8/20/2018	B322	CW L/UL 322	B322-L/UL-26	6.0	NA	Y	Loading dock floor. After final cleaning done on 8/20/18 by Highground.

Table C-3

Building 322
Container Waste Loading/Unloading Area
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversight Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID# (1)	Sample #	Hydrion (2) (pH Test)	Hydrofluoric Acid (positive/Negative)	Debris/Residue Free (Y/N) (3)	Description
Total Number of Pre - Decontamination Samples:	13	Maximum pH: 7.5		Minimum pH: 5.5			
Total Number of Post-Decontamination Samples:	13	Maximum pH: 7.5		Minimum pH: 5.5			

Notes:

(1) CW L/UL 322 is the Container Waste Loading/Unloading Area (loading dock room) inside northwest end of B322.

(2) HYDRION® pH test strips with range from 5.0 to 9.0, at 0.5 standard unit (SU) increments, were used. Test strips with pH range of 0-6 were used for pH 5.0 confirmation.

(3) Pre-decontamination samples were collected from concrete floor of SWMU at random locations prior-to decontamination. No visible staining or rust rings from drums were observed during the initial inspection by Arcadis. The floor is coated with a thick protective layer that exhibited minor damage (scratches, pitting, gouges), but no visible cracks in the floor. Post decontamination samples were collected from same floor following light surface scraping and vacuum cleaning.

Table C-4

Building 322
Treated Water for SWMU Surface Testing
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Description
5/16/2018	B322	NA	B322-TW-1	5.5	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF
5/25/2018	B322	NA	B322-TW-2	5.5	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF
6/6/2018	B322	NA	B322-TW-3	5.5	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF
6/12/2018	B322	NA	B322-TW-4	5.5	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF
6/28/2018	B322	NA	B322-TW-5	5.5	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF
8/6/2018	B322	NA	B322-TW-6	5.5	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF
8/15/2018	B322	NA	B322-TW-7	6.0	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF
8/20/2018	B322	NA	B322-TW-8	6.0	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF
9/4/2018	B322	NA	B322-TW-9	6.0	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF
9/21/2018	B322	NA	B322-TW-10	6.0	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF

Table C-4

Building 322
Treated Water for SWMU Surface Testing
SWMU Removal Verification Data
RCRA Solid Waste Management Unit Consulting and Third-Party Oversite Services
GLOBALFOUNDRIES
Hopewell Junction, NY

Date	Building	SWMU ID#	Sample #	Hydrion [1] (pH Test)	Hydrofluoric Acid (Positive/Negative)	Description
11/21/2018	B322	NA	B322-TW-11	5.5	NA	Treated water (TW) from B322 tap used for lightly wetting surfaces to measure pH and/or verify HF

Total Number of Samples: 11 Maximum pH: 6.0 Minimum pH: 5.5

Notes:

(1) HYDRION® pH test strips with range from 5.0 to 9.0, at 0.5 standard unit (SU) increments, were used. Test strips with pH range of 0-6 were used for pH 5.0 confirmation.