SOLID WASTE MANAGEMENT UNIT SAMPLING & ANALYSIS PLAN (SAP)

Chemical Development Pilot Plant

100 Academy Street
Rouses Point, NY

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206910
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1. INTRODUCTION

This Chemical Development Pilot Plant-specific Solid Waste Management Unit (SWMU) Sampling & Analysis Plan (hereafter referenced as the ChemD SWMU SAP) was prepared as a supplement to the original site-wide SAP dated September 1, 2006 and approved by the New York State Department of Environmental Conservation (NYSDEC) with comments on October 17, 2006 by Woodard & Curran Engineering PA PC (hereafter referred to as Woodard & Curran) on behalf of Pfizer (formerly Wyeth) for the Chemical Development Pilot Plant facility located at 100 Academy Street in Rouses Point, New York. This ChemD SWMU SAP was prepared in accordance with the NYSDEC 6 NYCRR Part 373 Hazardous Waste Management Permit (Module II-Corrective Action Requirements for SWMUs and Areas of Concern (AOCs) for the Site issued by the NYSDEC and will be implemented during and following demolition of the Pilot Plant portion of the larger Pfizer facility (the "Site").

The purpose of this ChemD SWMU SAP is to outline the initial field screening and soil sampling procedures that will be implemented during and following the demolition of the Chemical Development Pilot Plant specifically related to corrective action requirements for the various SWMUs identified. Similar to previously approved SAPs implemented at this Site, if sampling and analysis results warrant additional investigative activities, such activities will be proposed to NYSDEC and completed as a supplement to this SAP implementation.

A Quality Assurance Project Plan (QAPP) was previously prepared in accordance with NYSDEC RCRA Quality Assurance Project Plan Guidance and the United States Environmental Protection Agency's (EPA) Quality Assurance Guidance and is provided as Exhibit B of the SWMU/AOC Assessment Report dated September 1, 2006. This QAPP contains many of the Standard Operating Procedures (e.g., soil headspace screening and soil sampling) that will be used during SAP implementation. A Health and Safety Plan (HASP) also was previously provided as Exhibit C of the Solid Waste Management Unit (SWMU)/Area of Concern (AOC) Assessment Report dated September 1, 2006 and has been updated as appropriate to include additional activities as the corrective action program has progressed. Both the previously prepared QAPP and HASP (incorporating the NYSDEC comments issued on September 13, 2006 and September 26, 2006) will be followed during implementation of this ChemD SWMU SAP, and are incorporated by reference.

1.1 BACKGROUND

A background of the Chemical Development Pilot Plant at 100 Academy Street and the adjoining Main Plant property at 64 Maple Street (collectively referred to as the "Site"), the RCRA corrective action status of the Site, and an environmental conditions summary of the Site and specifically the Chemical Development Pilot Plant portion, are provided in the following sections.

1.1.1 Facility Descriptions

The Site is located at the intersection of Maple Street (to the east) and Academy Street (to the south) in the Village of Rouses Point, Clinton County, New York. The Site is located approximately 800 feet west of the northern end of Lake Champlain and 3,300 feet south of the Canadian border. The Site includes land in the Village of Rouses Point and the Town of Champlain. The Site is zoned I-2, Industrial. The location of the Site is depicted on **Figure 1**.

The Site is currently owned and operated by Pfizer (formerly Wyeth) as a pharmaceutical manufacturing and research facility (see **Figure 2**). The Site contains two facilities, the Main Plant and the Chemical Development Pilot Plant. The Main Plant (located primarily on the eastern portion of the Site) includes approximately 1 million square feet of manufacturing and supporting infrastructure space. The Main Plant portion of the facility maintains an address of 64 Maple Street. This portion of the Site was previously owned by Wyeth and sold to Akrimax Manufacturing, LLC

in 2006, who then leased the plant back to Wyeth (later acquired by Pfizer) for pharmaceutical manufacturing operations. Pfizer re-acquired the Main Plant portion of the facility from Akrimax in 2011 and Akrimax no longer operates at the Site. Operations at the Main Plant include, or formerly included, the manufacturing, primary processing and packaging of over-the-counter and prescription pharmaceuticals.

The Chemical Development Pilot Plant (located on the western portion of the Site) is owned and operated by Pfizer and includes approximately 120,000 square feet of pharmaceutical research and development and warehouse space on 11.86 acres. The Chemical Development Plant portion of the facility maintains an address of 100 Academy Street.

The Main Plant and Chemical Development Plant operated as semi-autonomous units, although much of the Site infrastructure is shared between the two plants including steam, process wastewater treatment facilities, and hazardous waste storage. The Main Plant facility includes the manufacturing buildings, boiler house, air treatment buildings, and general Site grounds including the undeveloped portions of the Site. The Chemical Development Plant facility includes the process wastewater treatment plant, steam stripper, tank farm, various storage buildings, the fire water system, and the greater than 90 day hazardous waste storage facility.

The Site maintains a 6 NYCRR Part 373 Hazardous Waste Management Permit (NYSDEC Permit # 5-0928-00017/00175) and operates as a RCRA large quantity generator (LQG) under USEPA Generator ID # NYD002081396.

1.1.2 Historical Research & Development Operations at Chemical Development Pilot Plant

The Chemical Development Pilot Plant was in operation from 1967 to 2013 conducting Research and Development (R&D) producing batches of Active Pharmaceutical Ingredients or API (between 5 and 100 kilogram) for research and clinical trials. The R&D processes were complex and generally occurred in state-of-the-art reactors, with sizes ranging between 30 and 2,000-gallons in capacity, located in 11 multi-level bays throughout the plant. The Chemical Development Pilot Plant produced approximately 250 batches per year of API. The batches were highly variable, depending on the current research needs. Chemical Development Pilot Plant operations occurred primarily in Buildings 16 and 23, with additional buildings providing support functions including raw and waste material storage, process wastewater treatment, vent condensers for air treatment, laboratories, and mechanical and office support areas. The layout of the Chemical Development Pilot Plant with identification of buildings is attached as **Figure 2**. The first building (Building 16) was constructed around 1967 and construction continued as the facility expanded through 2010.

The Chemical Development Pilot Plant handled API, solvents (with acetone the most common), acids, caustics and many other chemical raw materials. A network of floor drains and sumps that conveyed process wastewaters are located throughout the plant and are collectively defined as SWMU-7: Process Sewers. All drains, except for sanitary piping from non-production related areas (e.g., restrooms), are piped to the onsite wastewater treatment system located in Building 24 (SWMU-15) and Building 40 steam stripper (SWMU-17) where the waste was treated prior to discharge to the Village of Rouses Point POTW under an Industrial User's Permit.

Raw and waste materials were previously stored outside in drums, located west and northwest of Buildings 16 and 23 (SWMU-1: Interim Drum Storage Area and SWMU-4: Former Container Storage Area). The Tank Farm (SWMU-6) was constructed in 1983 and has been used since that time to store bulk solvents and solvent waste for the Chemical Development Pilot Plant. An uncovered container storage area (SWMU-5: Container Storage Area) was constructed in 1985 and consisted of a six-inch-thick concrete base, sloped and diked to provide secondary containment. An impermeable membrane liner with an additional four inches of concrete on top was added to the container storage area in the late 1980s or early 1990s. A roof was then constructed over the container storage area in the mid-1990s

creating the present drum storage building (Building 17C). The building is diked and includes a containment sump for spill control. This is the current Part 373 permitted greater than 90 day hazardous waste drum storage area for the entire Site, including the Main Plant.

1.1.3 Summary of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) at Chemical Development Pilot Plant

A total of 13 SWMUs and four (4) AOCs have been identified at the Chemical Development Pilot Plant that meet the SWMU/AOC definitions in the NYSDEC 6 NYCRR Part 373 Hazardous Waste Management Permit for the Site as follows:

- SWMU-1: Interim Drum Storage Area
- SWMU-4: Former Container Storage Area
- SWMU-5: Container Storage Area
- SWMU-6: Tank Farm
- SWMU-7: Process Sewer
- SWMU-12: Building 16 Former Drywell
- SWMU-13: Building 16 Former Sanitary Sewer Holding Tanks
- SWMU-14: Waste Toluene Management East of Tank Farm
- SWMU-15: Building 24 Wastewater Treatment Plant
- SWMU-17: Building 40 Wastewater Steam Stripper Building
- SWMU-23: Building 16 Former Waste Storage Area in Northwest Corner
- SWMU-24: Building 31 Solvent Condensate System
- SWMU-26: Chemical Development Reactor Bay Drumming Areas (Multiple Locations)
- AOC-5: Ethylene Dichloride Release Near Building 23 Loading Dock
- AOC-8: Release of Acetonitrile to the Concrete at Chemical Development
- AOC-9: Building 34 Loading Dock Mixed Alcohol Waste Release
- AOC-10: Building 23 Therminol Release to Soil

The NYSDEC was notified of the presence of these SWMUs/AOCs (along with additional SWMUs/AOCs at the Main Plant) per the requirements of the Part 373 permit in July 2006. The locations of all SWMUs and AOCs identified at the Site are shown on **Figure 3**. A more detailed drawing depicting the locations of SWMUs and AOCs at Chemical Development Pilot Plant (including those SWMUs and AOCs where no further action has been achieved as a result of previous investigation activities) is provided as **Figure 4**. The status of SWMUs/AOCs is provided to NYSDEC on March 4 of each calendar year per the requirements of the Part 373 permit.

To date, partial no further action status has been approved for three (3) SWMUs (SWMU-7 consisting of select exterior process sewer piping replaced between 2008-2009 and associated soil remediation, the truck containment pad and associated soil remediation at SWMU-6, and soil remediation at SWMU-14). No further action status has either been approved or recommended for all the AOCs at the Chemical Development Pilot Plant including AOC-5,

AOC-8, AOC-9, and AOC-10 as documented in the March 29, 2013 Draft Corrective Measures Study (CMS) Report submitted to NYSDEC and therefore, no additional investigation activities are proposed to be conducted at AOCs located at the Chemical Development Pilot Plant. As presented in **Section 2**, no further soil investigation is currently proposed in this SAP for SWMU-13, SWMU-14, or SWMU-23 based on previous investigation/remediation results. The remaining 10 SWMUs will be further investigated during/following demolition of the Chemical Development Pilot Plant as described in this SAP.

1.1.4 RCRA Corrective Action Status and Environmental Conditions Summary

The following summary has been developed to present the status of the RCRA hazardous waste management program at the Pfizer ChemD facility. ChemD (and the eastern adjoining Main Plant facility at 64 Maple Street) is operating as a hazardous waste management facility under a NYSDEC 6 NYCRR Part 373 Hazardous Waste Management Permit (the "Part 373 Permit") and has been conducting corrective action activities at SWMUs and AOCs as defined in the Part 373 Permit, including a Corrective Measures Study (CMS), which recommends corrective measures to be implemented to protect human health and the environment. A Draft CMS Report has been prepared and submitted to NYSDEC dated March 29, 2013 which summarizes the investigation of conditions in the soil and the groundwater at and around the Rouses Point facility. The purpose of the CMS report is to detail the strategies, procedures, and results employed to evaluate the conditions at the Site and to document the selection of the corrective measures for the site that will provide protection to human health and the environment.

Detailed descriptions of the previous RCRA corrective action investigation and remediation activities (through completion of Interim Corrective Measures or ICMs) and the subsequent findings conducted in support of the RCRA corrective action program at the Site are provided in the September 1, 2006 SWMU/AOC Assessment Report (which includes a summary of the final 1992 NYSDEC RCRA Facility Assessment (RFA)), April 5, 2007 Sampling and Analysis Report (SAR), March 12, 2010 Engineering Evaluation of Select SWMUs Report, the June 25, 2010 Supplemental SAR, and the March 29, 2013 Draft CMS Report previously submitted to the NYSDEC (see **Section 5**). In addition, detailed descriptions of geologic and hydrogeologic conditions at the Site are provided in the Draft CMS Report.

The NYSDEC is reviewing the Draft CMS Report. Review of this document could lead to a modification of the Part 373 Permit for the Rouses Point facility to account for the ongoing corrective action requirements. At this point in time, the NYSDEC has recommended that Pfizer implement one of the selected corrective measures (In-Situ Chemical Oxidation (ISCO) of volatile organic compounds (VOCs) in off-site groundwater near the Main Plant portion of the facility at the intersection of Maple Street and Academy Street) presented in the CMS prior to completion of the review of the report and this activity has been initiated as an ICM.

Numerous site investigations have been conducted at SWMUs/AOCs from 2006 to 2012 involving sampling of soil, soil vapor, and groundwater as summarized in the Draft CMS Report. The general locations and status of SWMUs and AOCs related to the Chemical Development Pilot Plant are shown on **Figure 3** and **Figure 4**. Remedial investigations and actions have been conducted at the Site on an as-needed basis to address "hot spots" identified through groundwater monitoring or soil investigations, in response to releases, or in response to facility-driven improvements. The purpose of these ICM efforts was to investigate, and potentially remediate, areas where further risk reduction could be accomplished. ICMs involving soil excavation were conducted in relation to SWMU-7: Process Sewer system (north and west sides of the Chemical Development Pilot Plant), SWMU-14: Waste Toluene Management Area (east of the Tank Farm), and SWMU-6: Tank Farm Tanker Truck Unloading Area (see **Figure 5**). Groundwater is currently being monitored through a network of 14 on-site multi-level monitoring wells located around the perimeter of the Chemical Development Pilot Plant facility (see **Figure 6**).

A limited number of site-related chemical compounds were found in subsurface soils in a few areas of the site (for example, surrounding chemical storage areas), and in groundwater at depth below the Site. The primary chemical compounds detected include VOCs and semi-volatile organic compounds (SVOCs) associated with materials used in the manufacturing processes at the site. A limited number of VOCs were detected at low concentrations (measured in parts per billion) in on-site soil vapor samples collected underneath buildings at the Site.

1.2 OBJECTIVES

The primary objective of the ChemD SWMU SAP is to outline the general investigation approach and methodologies to conduct field screening/documentation, media sample collection, and laboratory analyses of media during and following demolition to evaluate if releases to the environment have occurred at select SWMUs or to further investigate SWMUs that have documented releases. This ChemD SWMU SAP will be integrated in a phased, flexible approach in conjunction with the dynamic and variable demolition activities.

The following activities are covered in this SAP: soil screening and sampling, sample analytical methods, and quality assurance (QA) measures (both laboratory and field sampling) to be performed during the investigation. The QAPP and/or previously submitted and approved SAPs for the Site include the Standard Operating Procedures (SOPs) for the investigative techniques being used for the ChemD SWMU SAP. The details of the individual tasks (for example: designation of type of screening and sampling equipment, depth of samples, decontamination, QA/QC procedures, etc.) are presented in this SAP.

The soil analytical results will be compared NYSDEC "Subpart 375-6: Remedial Program Soil Cleanup Objectives" which were proposed as media cleanup criteria for the Site in the Draft CMS Report to initially assess whether a release has occurred at a given location that may require additional investigation and/or remediation.

1.3 SWMU SAP ORGANIZATION

The ChemD SWMU SAP is organized as follows, with additional information in the supporting appendices and/or in the previously approved QAPP:

- **Section 1** Provides an introduction to the SWMU sampling and analysis program;
- **Section 2** Provides the SWMU sampling and analysis program approach overview;
- **Section 3** Summarizes the SWMU sampling and analysis program tasks and procedures;
- **Section 4** Summarizes the SWMU sample handling and custody procedures;
- **Section 5** Lists the supporting documents and literature references used to prepare the SAP.

Table 1 includes the following information:

- Methodologies for field investigation activities including soil screening and soil sampling; and
- Summary of sampling analytical parameters and methods.

Figures are referenced and include the following information:

- Site plans depicting the site layout and locations of SWMUs and previous investigation activities and analytical results.

2. CHEMICAL DEVELOPMENT PILOT PLANT SWMU INVESTIGATION APPROACH

The primary objective of the ChemD SWMU SAP is to outline the general approach and methodologies to conduct field observations/documentation, field screening, sample collection, and laboratory analyses during and following demolition to evaluate if releases to the environment have occurred at select SWMUs or to further investigate SWMUs that have documented releases. This ChemD SWMU SAP will be integrated in a phased, flexible approach in conjunction with the dynamic and variable demolition activities at the Chemical Development Pilot Plant. The investigation activities proposed herein will not only aid in assessing whether a release has occurred at each SWMU or further characterize previous releases, but may also assist in the identification of the appropriate remedial strategy that may be implemented to address the SWMUs if necessary, or provide enough documentation to request no further action status approval from NYSDEC. Field observations/screening and the laboratory analytical results from confirmation soil sampling will be used to determine if additional delineation and/or soil excavation or other remediation is required.

A summary of proposed investigation activities for each of the identified SWMUs is presented in **Table 1**, including: type of anticipated investigation method/activity at each SWMU, number and type of samples to be collected for laboratory analyses, analytical parameters, sampling objectives and rationale, and approximate sampling depths.

Similar to the previously implemented SAPs for the Site initiated since 2006, this ChemD SWMU SAP will be implemented as described below:

- It is anticipated that demolition of the Chemical Development Pilot Plant will include removal of buildings and concrete slabs, asphalt pavement surrounding the buildings/grounds, and underground site utilities. Implementation of the ChemD SWMU SAP is proposed to consist of conducting field observations/documentation and field screening of soil conditions underneath SWMUs following removal of the concrete slabs of the buildings, asphalt pavement, or associated underground infrastructure (such as process sewers/sumps) prior to and during the demolition activities. In general, shallow soil samples are proposed to be collected beneath concrete slabs at areas of visual/olfactory impacts or at other potential release areas (e.g., waste storage areas or process sewer conveyance systems related to SWMUs) when feasible.

The following sections summarize the previous investigation results at each SWMU and the specific approach of each proposed investigation activity to be implemented. Further details regarding specific tasks, procedures, and methodologies are provided in **Section 3** of this ChemD SAP and in the project QAPP.

2.1 SWMU-1: INTERIM DRUM STORAGE AREA

SWMU-1 (Interim Drum Storage Area) was formerly used to store drums of waste solvents including toluene, methanol, isopropyl alcohol, and other D001, D002, F002, F003, and F005 wastes. SWMU-1 was an L-shaped area (approximately 26,800 square feet) located west of Building 17A and the Tank Farm and was used for the accumulation of up to 600 drums of hazardous wastes prior to transfer to the permitted area (SWMU-5: Container Storage Area) prior to 1987. The Interim Drum Storage Area is no longer used for drum storage. The approximate location of SWMU-1 is depicted on **Figure 7**.

2.1.1 Previous Investigation Results

Initial soil sampling was conducted at the Interim Drum Storage Area in November 1989, by Roy F. Weston, Inc. (Weston) on behalf of Wyeth during a RCRA Facility Assessment (RFA). A total of five (5) borings were installed to

two (2) feet below ground surface (bgs) using hand driven sampling equipment, west and north of the Tank Farm in open ground (i.e., not through the concrete pavement). Soil samples were collected from each boring from 0-1 foot bgs and from 1-2 feet bgs and analyzed for volatile organic compounds (VOCs) with 10 total soil samples analyzed. The results indicated that this area presented no threat to human health or the environment. Further sampling was not required by the NYSDEC for this area in the Final RFA dated September 1991 (revised December 1992).

Since operations continued after the RFA sampling by NYSDEC and as previously documented in the April 5, 2007 Sampling and Analysis Report (SAR) submitted to NYSDEC, 10 additional soil borings were installed to evaluate subsurface conditions within and immediately adjacent to the former Interim Drum Storage Area to depths between 10 and 20 feet bgs in 2006 in accordance with the NYSDEC approved Sampling and Analysis Plan (SAP) dated September 1, 2006. One soil sample was collected from each boring at multiple depths ranging from 1 to 4 feet bgs. Two groundwater samples were also collected from temporary groundwater sample points (SWMU1-TW01 and -TW02) installed within the upper till unit. The locations of the soil borings and temporary groundwater sample points are depicted on **Figure 7** and **Figure 8**, respectively.

The 2006 analytical results are summarized below (see the April 2007 SAR for additional details) and were compared to the NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs) in 6 NYCRR Subpart 375-6.8(a) and Restricted Use – Residential SCOs in 6 NYCRR Subpart 375-6.8(b), where established and are depicted on **Figure 7**. Where a value in Subpart 375-6.8(b) has not been established, values were taken from NYSDEC Technical and Administrative Guidance Manual (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels:

- No physical indications of a chemical release, such as odors, staining, or elevated photoionization detector (PID) field screening readings, were observed during the advancement of the soil borings.
- Low concentrations of VOCs, including acetone, benzene, tetrachloroethene, and trichloroethene, were detected in several soil samples; however, no concentrations of VOCs exceeded NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs) in 6 NYCRR Subpart 375-6.8(a).

The 2006 groundwater analytical results from the temporary groundwater sample point were compared to NYSDEC GA groundwater standards and are depicted on **Figure 8**:

- The groundwater analytical results from the temporary groundwater sample points showed 1,2-dichloroethane at 2 and 28 micrograms per liter (μg/L), respectively, both of which exceeded the NYSDEC groundwater quality standard of 0.6 μg/L. Benzene was detected at 5 μg/L, which exceeds the NYSDEC groundwater quality standard of 1 μg/L. Acetone was detected at 3J μg/L and 1,1-dichloroethene was detected at 0.7J μg/L, both below the NYSDEC groundwater quality standards.
- One groundwater sample from a temporary groundwater sample point was collected and analyzed for both filtered and unfiltered RCRA 8 metals. The unfiltered total metals results included arsenic (53.1 μg/L), barium (705 μg/L), cadmium (7.2 μg/L), chromium (216 μg/L), and lead (91.8 μg/L), which exceed the NYSDEC groundwater quality standards for all compounds, except for barium. The filtered metals results (filtered by the laboratory prior to analysis) included barium (43.2 μg/L), chromium (1.0B μg/L), lead (2.4B μg/L), and silver (2.4B μg/L). The concentrations of the filtered metals were below the applicable NYSDEC groundwater quality standards. The higher concentrations of metals in the temporary groundwater sample point (constructed without a sand filter pack) were most likely due to turbidity.

An additional groundwater investigation was conducted at SWMU-1 beginning in 2010 to further investigate the presence of VOCs previously detected in temporary groundwater sample points in 2006 and to support Site-wide characterization of groundwater quality and hydrogeologic conditions. Two (2) monitoring wells (MW-29 and

MW-29S) were installed (see **Figure 8**) at the area of the previous 1,2-dichloroethane detection of 28 μg/L in groundwater. One well (MW-29) was installed in the lower till geologic unit and one well (MW-29S) was installed immediately adjacent to the lower till well within the upper till geologic unit. MW-29 has been sampled seven (7) times from December 2010 through November 2012 and MW-29S has been sampled six (6) times from December 2010 to March 2012 and the analytical results are summarized below and in Table 1 of the 2013-2014 Annual Progress Report dated April 9, 2014:

- Concentrations of several VOCs were detected in the lower till monitoring well MW-29 including 1,2-dichloroethane (130 to 180 μg/L), chloroform (0.67J μg/L during the December 2010 sampling event only), and methylene chloride (1.1 to 1.4J μg/L). Several tentatively identified compounds (TICs) including trimethylsilanol and unknown TICs were also sporadically detected. The concentrations of 1,2-dichloroethane exceeded NYSDEC groundwater quality standard of 0.6 μg/L during all sampling events. The concentrations of VOCs detected during the most recent November 2012 sampling event are depicted on **Figure 8.**

- Concentrations of several VOCs were detected in the upper till monitoring well MW-29S including 1,2,3-trichlorobenzene (0.42J μg/L during the December 2011 sampling event only), 1,2-dichloroethane (0.44 J to 6.9 μg/L), chloroform (0.79J to 6.8 μg/L), cis-1,2-dichloroethene and trans-1,2-dichloroethene (1.5 and 2.0 μg/L, respectively, during the December 2010 sampling event only), and trichloroethene (0.77J to 3.4 μg/L). No concentrations of VOCs in MW-29S have exceeded NYSDEC groundwater quality standards, except for one concentration of 1,2-dichloroethene detected at 6.9 μg/L during the December 2010 sampling event only. The concentrations of VOCs detected during the most recent March 2012 sampling event are depicted on **Figure 8.**

In addition, downgradient monitoring wells MW-24/24S, MW-25/25S, and MW-26/26S located on the east side of the Chemical Development Pilot Plant (approximately 300 feet to the west) have been sampled between four (4) and nine (9) times from September 2010 to October 2013 and have only shown sporadic detections of 1,2-dichloroethane and chloroform below NYSDEC groundwater quality standards (see Table 1 in 2013-2014 Annual Progress Report) indicating that the upgradient concentrations of VOCs detected at MW-29/29S do not appear to extend beyond the Chemical Development Pilot Plant. No concentrations of VOCs were detected in MW-24S, MW-25/25S, or MW-26-26S above NYSDEC groundwater quality standards during the most recent sampling events in 2012-2013. MW-24 contained dichlorodifluoromethane between 19 and 36 μg/L and above the NYSDEC groundwater quality standard of 5 μg/L in 2011 and 2012.

Also, in 2009, the Tank Farm truck containment pad (part of SWMU-6) and portions of the exterior underground process sewer piping system (SWMU-7) was excavated to between 3.5 and 13 feet bgs to facilitate installation of the replacement exterior underground process sewer piping system located on the eastern side of SWMU-1 near the south-side of Building 17A as documented in the ICM Completion Report for SWMU-7 dated May 14, 2010 and the ICM Completion Report for SWMU-6 dated May 28, 2010 (see **Figure 5**). The excavation areas and post-excavation confirmation soil sampling analytical results from these ICM activities (which demonstrated that no concentrations of constituents were detected exceeding NYSDEC SCOs) were depicted on Figure 6A (north side) and Figure 6B (west side) from the SWMU-7 ICM Report and Figure 4 from the SWMU-6 ICM Report. Therefore, any residual releases in this area were likely removed at that time.

2.1.2 Proposed Investigation Activities

Following removal of the asphalt/concrete pavement and underground utilities at SWMU-1 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that between 6 to 12 soil samples will be

collected from the SWMU-1 area identified on **Figure 7** and submitted for laboratory analyses listed in **Table 1**. The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.2 SWMU-4: FORMER CONTAINER STORAGE AREA

The Former Container Storage Area (SWMU-4) was located outside the western end of Building 16 and was used to store drums of waste solvents including toluene, methanol, isopropyl alcohol, and other D001, D002, F002, F003, and F005 wastes. The Former Container Storage Area (approximately 12,800 square feet) was located west of Building 16 from 1967 to 1987. At least one release was reported for this area on September 4, 1985, when a stack of drums containing waste acetic acid and water collapsed, spilling 540 liters of waste. The approximate location of SWMU-4 is depicted on **Figure 9**. SWMU-4 is co-located with SWMU-12 (Building 16 Former Drywell; see **Section 2.6**).

2.2.1 Previous Investigation Results

Initial soil sampling at SWMU-4 was conducted in November 1989, by Roy F. Weston, Inc. (Weston) on behalf of Wyeth during a RCRA Facility Assessment (RFA). Two (2) borings were installed at SWMU-4 to two (2) feet bgs using hand driven sampling equipment in a north-south trending line within the gravel area immediately west of the paved driveway, approximately 50 feet west of Building 16 and the Tank Farm. Soil samples were collected from each of the two borings from 0-1 foot bgs and from 1-2 feet bgs (total of 4 samples analyzed). Low concentrations of acetone and tetrachloroethene were detected in the shallow soil samples, with no concentrations of VOCs or SVOCs detected in the deeper soil samples. According to a letter from NYSDEC, the results indicated that this area presented no threat to human health or the environment. Further sampling was not required by the NYSDEC for this area in the Final RFA dated September 1991 (revised December 1992).

Based on the new identification of SWMU-12 in July 2006 and the results of the RFA sampling at SWMU-4, an additional investigation was conducted in 2006 as previously documented in the April 5, 2007 Sampling and Analysis Report (SAR) submitted to NYSDEC. Due to the density of underground utilities (e.g., natural gas line and sewer lines), there were only two boring locations accessible to install additional delineation soil borings in 2006 to evaluate subsurface conditions within and immediately adjacent to SWMU-4. The borings were located within the gravel-covered area to the west of the asphalt-paved driveway. The soil borings were advanced to depths between 6.5 feet and 10 feet bgs. One soil sample was collected from the 1 to 2 feet bgs horizon from each soil boring.

Also in 2006, a groundwater monitoring well (MW-1) was installed as close to the former drywell (SWMU-12) as possible and within SWMU-4; however, due to the density of underground utilities such as electrical and natural gas lines, the well was located approximately 10 feet west of the actual drywell location. MW-1 was screened in the lower till unit. A groundwater sample was also collected from a temporary groundwater sample point (GP01-TW01) installed in the upper till unit directly adjacent to MW-1. The locations of the soil borings, temporary groundwater sample point, and monitoring well MW-1 are depicted on **Figure 9** and **Figure 10**.

The 2006 soil analytical results are summarized below (see the April 2007 SAR for additional details) and were compared to the NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs) in 6 NYCRR Subpart 375-6.8(a) and Restricted Use – Residential SCOs in 6 NYCRR Subpart 375-6.8(b), where established and are depicted on **Figure 9**. Where a value in Subpart 375-6.8(b) has not been established, values were taken from NYSDEC Technical and Administrative Guidance Manual (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels. No physical indications of a chemical release, such as odors, staining, or elevated photoionization detector (PID) field screening readings, were observed during the advancement of the soil borings.

- No concentrations of VOCs were detected in the SWMU-4 soil samples collected in 2006, except for methylene chloride and tetrachloroethene, which were also detected in the laboratory blanks. No concentrations of VOCs exceeded NYSDEC Unrestricted Use SCOs in 6 NYCRR Subpart 375-6.8(a).

The 2006 groundwater analytical results were compared to NYSDEC GA groundwater quality standards/guidance values and are depicted on **Figure 10**:

- The groundwater analytical results for the temporary groundwater sample point installed in the upper till unit adjacent to MW-1 in 2006 included acetone (12 μg/L), 1,2-dichloroethane (39 μg/L), benzene (0.5J μg/L), and toluene (0.7J μg/L). Only 1,2-dichloroethane exceeded the NYSDEC groundwater quality standard of 0.6 μg/L.
- No SVOCs exceeded the applicable NYSDEC groundwater quality standards in the groundwater sample from the temporary groundwater sample point.
- The groundwater analytical results for total metals for MW-1 included barium (84.5 μg/L), chromium (0.83B μg/L), and lead (2.2B μg/L) below NYSDEC groundwater quality standards. The groundwater sample collected from the temporary sample point contained arsenic (58.9 μg/L), barium (854 μg/L), cadmium (8.5 μg/L), chromium (217 μg/L), and lead (118 μg/L), which exceed the applicable NYSDEC groundwater quality standards for all, except barium. The higher concentrations of metals in the temporary groundwater sample point (constructed without a sand filter pack) were most likely due to turbidity.

An additional groundwater investigation was also conducted at SWMU-4 and SWMU-12 beginning in 2010 during implementation of the CMS program to further investigate the presence of VOCs previously detected in the temporary groundwater sample point and MW-1 and to support Site-wide characterization of groundwater quality and hydrogeologic conditions. Two (2) monitoring wells (MW-28 and MW-28S) were installed downgradient of SWMU-4 and SWMU-12 in the lower till geologic unit and within the upper till geologic unit, respectively. In addition, one (1) monitoring well (MW-1S) was installed in the upper till unit immediately adjacent to MW-1 (see **Figure 10**). MW-1 has been sampled 12 times from 2006 to 2013 and MW-1S and MW-28/28S have been sampled six (6) times each from 2010 to 2012. The analytical results are summarized below and in Table 1 of the 2013-2014 Annual Progress Report:

- Concentrations of several VOCs were detected in the lower till monitoring well MW-1 including acetone (5 to 6DJ μg/L in 2006 only), 1,1-dichloroethene (1.1 to 2J μg/L), 1,2-dichloroethane (4J to 8.2 μg/L), benzene (0.5J to 0.9J μg/L), chloroethane (0.35J to 4DJ μg/L), cis-1,2-dichloroethene (0.5J to 0.7J μg/L), methylene chloride at 4DJ μg/L in 2006 only, and vinyl chloride (21 to 120D μg/L). Several tentatively identified compounds (TICs) including ethyl ether (430 to 2000 μg/L) and isopropyl ether (0.68 to 0.99J μg/L) were also detected. The concentrations of 1,2-dichloroethane and vinyl chloride exceeded NYSDEC groundwater quality standards of 0.6 μg/L and 2.0 μg/L, respectively, during all sampling events. The concentrations of VOCs detected during the most recent sampling event in March 2013 are depicted on **Figure 10**.
- Concentrations of several VOCs were detected in the upper till monitoring well MW-1S including 1,2-dichloroethane (3.1 to 6.3 μg/L) during all sampling events with the following VOCs detected sporadically: 1,1-dichloroethene (0.3 to 1.0 μg/L), benzene (0.46J to 0.61J μg/L), chloroform (1.5 μg/L), and vinyl chloride (1.2 μg/L). Several TICs including ethyl ether (60 to 97 μg/L) and isopropyl ether (0.71 to 1.3 μg/L) were also consistently detected. The concentrations of 1,2-dichloroethane exceeded NYSDEC groundwater quality standard of 0.6 μg/L during all sampling events. The concentrations of VOCs detected during the March 2012 sampling event are depicted on **Figure 10**.
- No concentrations of VOCs were detected in the upper and lower till monitoring wells MW-28S and MW-28 installed downgradient of SWMU-4/SWMU-12 except for one detection of chloroform in MW-28S during the

December 2010 sampling event at 4.2 μg/L and several sporadic low concentrations of unknown TICs indicating that the upgradient concentrations of VOCs detected at MW-1 and MW-1S do not appear to extend beyond the Chemical Development Plant. The concentrations of VOCs detected during the most recent sampling event in March 2012 are depicted on **Figure 10**.

2.2.2 Proposed Investigation Activities

Following removal of the asphalt/concrete pavement and underground utilities at SWMU-4/SWMU-12 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that up to 6 soil samples (assume 1 sample per 2,000 square feet) will be collected from the SWMU-4 area identified on **Figure 10** and submitted for laboratory analyses listed in **Table 1**. The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.3 SWMU-5: CONTAINER STORAGE AREA

The Container Storage Area (also known as Building 17C) was the permitted NYSDEC Part 373 Hazardous Waste Management Permit greater than 90 day hazardous waste drum storage area for the entire Site, including the Chemical Development Plant and the Main Plant. Building 17C consists of the 10,000 square foot concrete containment pad and underlying spill containment sump (10,000-gallon capacity), a 1,200 square foot concrete tanker truck loading pad adjacent to the east side of the building, and a 600 square foot asphalt access ramp adjacent to the west side of the building (see **Figure 11** for a layout of Building 17C) used by forklifts carrying waste containers into the containment pad for staging (11,800 square feet total).

The original Container Storage Area (1985-1993) was located in the area of present day Building 17C and originally consisted of an uncovered, reinforced concrete pad which measured 100-feet by 100-feet. The pad was sloped and diked and was used to store up to 600 drums. This area was included in the Part 373 permit pending at the time of the RCRA Facility Assessment (RFA) in 1987. No staining was observed and the drums appeared in good condition during the RFA. No releases had been reported for this area and therefore, no sampling or analysis was conducted during the RFA. No further action was recommended by the NYSDEC for this SWMU in the RFA. The Container Storage Area was included in the permit issued in 1988, the subsequent permit issued in 1994, and the permit renewals in 1999 and 2009.

As stated in the July 2013 *Hazardous Waste Storage Secondary Containment System Integrity Assessment Annual Report*, Building 17C was used to store hazardous waste containers generated throughout the facility which typically ranged in size from 5 gallons to 500 gallons (intermediate bulk containers). Containers of compatible material were stored in rows. The building had a total maximum storage capacity of 73,032 gallons, based on the physical area of the containment pad, representing the equivalent of 1,432 55-gallon drums.

A liner and cover slab were added in response to a request to coat the original slab during the renewal of the RCRA permit in 1988. The area was covered by a roof and enclosed by closed chain link fencing limiting access and precipitation intrusion during 1994-1995. During 2009, based on requirements of the latest renewal of the RCRA permit, the main containment area concrete was scarified and a coating (a multi-layered, vinyl ester laminate, broadcast flooring system) was installed. At the time of closure, Building 17C consisted of a reinforced concrete dual component containment system including secondary containment of the exposed 4-inch thick working slab by a 100 mil HDPE liner set on the original 10-inch thick structural concrete slab, now part of the secondary containment.

The sump for this containment area is pumped out manually, as necessary, to avoid accumulation of any precipitation for extended periods or at the time of any spill event that cannot be completely recovered prior to reaching the sump. In addition, the sump was specifically emptied prior to any activity related to transfer of liquid wastes to tank trucks for final disposition. The sump liquid, typically precipitation, was pumped directly to the facility wastewater treatment system where it was captured in a 10,000 gallon epoxy-coated sump for hazardous waste determination.

A truck loading pad was constructed in 2001 immediately adjacent to Building 17C to facilitate waste transfer operations. In 2003, concrete curbing was added to the truck containment. This containment is uncovered and is connected to the container storage building sump through an underground drain pipe. The truck loading dock was further improved in 2004 by adding a surface coating system for protection from intrusion by spills. In 2009, some further structural changes were made to the containment to remove curbing and modify flow direction for improved winter maintenance (snow removal) that included maintenance of the coating system and application of the coating system to the new sections.

2.3.1 Previous Investigation Results

A former groundwater monitoring well (MW-2) was installed in 2006 immediately to the east and downgradient of Building 17C to initially investigate if any releases from the SWMU had impacted groundwater. The well was monitored twice in 2006 and 2007 and no concentrations of VOCs were detected. The well was decommissioned on May 21, 2009 due to construction of a new warehouse building at the well location.

In 2007, a visual inspection (VI) of SWMU-5 was completed as documented in the 2010 Engineering Evaluation Report. Based on this VI, there did not appear to be a historic or ongoing release, but proactive maintenance was recommended to prevent a potential release from occurring (which was completed in 2009; see **Section 2.3**).

Following cessation of waste storage activities in December 2013, decontamination of the Building 17C containment pad, asphalt access ramp, and truck containment pad was conducted between April 1 and 3, 2014 and the containment sump was decontaminated between April 30 and May 1, 2014 in accordance with the Part 373 HWM Permit Closure Plan (Attachment VII) and the NYSDEC approved Rinsate Sample Collection Plan. The Building 17C containment areas were inspected by NYSDEC and a Woodard & Curran Professional Engineer registered in the State of New York prior to decontamination on December 3, 2013 and by Woodard & Curran Professional Engineer following decontamination on May 21, 2014. These inspection tasks included a review of facility records that indicated the Building 17C containment areas were maintained in good working order. All constituents in final rinsate samples were below applicable criteria (NYSDEC GA groundwater criteria). Based on the decontamination activities and results, the Building 17C regulated unit consisting of the containment pad, containment sump, access ramp, and truck containment pad were closed in substantial accordance with the Closure Plan (Attachment VII of the Part 373 HWM Permit) and no further decontamination was required. The Building 17C (Container Storage Building) Final Closure Report dated June 3, 2014 was submitted to NYSDEC. NYSDEC approved the Closure Report in a letter dated July 23, 2014 and terminated authorization to operate Building 17C as a permitted hazardous waste management unit.

2.3.2 Proposed Investigation Activities

Following removal of the concrete containment pads, access ramp, and truck containment pad at SWMU-5 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that up to 5 soil samples will be collected beneath the containment pad, sump, and truck containment pad identified on **Figure 11** and

submitted for laboratory analyses listed in **Table 1**. The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.4 SWMU-6: TANK FARM

The Tank Farm is located west of Building 23 and is currently inactive and was closed in accordance with the Part 373 HWM Permit Closure Plan (Attachment VII) between 2011 and 2013 as documented in the January 24, 2014 Tank Farm Final Closure Report approved by NYSDEC on March 19, 2014 (see **Figure 12**). The Tank Farm originally consisted of one hazardous waste storage tank designated ST-1, which was installed in 1983 to store waste organic solvents. By the time of the RFA, four hazardous waste storage tanks existed at the Tank Farm designated T-1005, T-1007, T-1008 (installed in 1986), and ST-1 (original tank installed in 1983). Wastes included toluene, methanol, and isopropyl alcohol. No releases had been reported for this area as of the RFA and therefore, no sampling or analysis was conducted. No further action was recommended by the NYSDEC for this SWMU in the RFA. During the RFA, cracks were noted in the concrete floor of the Tank Farm secondary containment. An old drain, which had been filled in with concrete, was observed within the containment area and reportedly connected to the storm sewer system. Past practice was to drain rainwater from the containment area through this pipe to the stormwater drainage system.

The Tank Farm was permitted to store up to 17,210 gallons total in three (3) stainless steel storage tanks designated T-1005 (7,560 gallons), T-1008 (4,450 gallons), and ST-1 (5,265 gallons operating capacity; 8,000-gallon total volume). Tank T-1005 was used to store waste solvents. Tank T-1008 was used to store waste toluene. Tank ST-1 was used to store waste solvents.

The tanks are located within a diked area constructed of 10-inch-thick poured concrete. The containment area provides a secondary containment volume of 42,639 gallons. The tanks are constructed of stainless steel. Tank thickness is monitored annually by using an ultrasonic thickness testing device. A tank assessment has been performed by a professional engineer registered in New York and is kept on file as part of the operating record at the Site.

The original 5,265-gallon tank ST-1 was replaced in October 1999 with a larger 8,000-gallon capacity tank. The permit modification application requested an increase in the permitted tank farm capacity to 21,725 gallons to allow for this larger tank. The application stated that the new tank had been installed, but would not be filled to greater than 5,265 gallons until the permit was modified to reflect the new tank volume. The containment for Tank ST-1 was upgraded in 1994 including improved drainage to the main containment and applying the chemical resistant Savereisen Product 250 coating to protect the containment from contamination while providing for maximum protection against contamination escape through any minor flaws in the concrete structure. The tank supports were also upgraded. Annual routine maintenance of the protective coating for the entire containment area is performed where cracks or deterioration may have occurred. Leak detection is accomplished by daily inspections. The sump is routinely pumped out to remove any accumulated precipitation.

The storage tanks were equipped with a manhole and over pressure safety devices. Aboveground inlet pipes fed into the tanks, one each for Tanks T-1005 and T-1008, and carried solvent stream from the pump station east of the Tank Farm, and one carried solvent waste from inside Building 16 reactor area to Tank ST-1. Wastes were removed from the tanks through aboveground pipes connected to pumps located adjacent to each tank. The wastes were commonly pumped to the truck loading station for removal for off-site treatment.

The containment is designed with appropriate chemically compatible water stops, control joint caulking compounds and typical construction related components. In 1999, a rehabilitation and upgrade of the ST-1 tank containment

included improved drainage to the main containment and a new chemical resistant coating and joint water seal. In 2004, the ST-1 containment was re-coated with a new chemical resistant coating Dudick Protecto-Glass 1130 and in 2009, the main containment area concrete was re-coated with Stonchem 656 (a highly cross-linked novalac epoxy system comprised of a base resin, an application of a layer of 0.75 glass reinforced composite fabric, a mortar coat and a mineral composite topcoat).

The containment sump for the main containment area is pumped out manually, as necessary, to avoid accumulation of any precipitation or at the time of any spill event that cannot be completely removed prior to reaching the sump. In addition, the sump is specifically emptied prior to any activity related to transfer of liquid wastes to tank trucks for final disposition.

The tank farm has an ancillary vehicle containment area (i.e., truck containment pad) constructed of reinforced concrete. The containment abuts the wall of the tank containment on the east side and has a curb for containment on the west side. It is sloped to the center from the north and south ends with the lowest elevation at the center where the drain grate is located. This containment was also rehabilitated in 2009 and finished with an epoxy based coating of 6000 FS, a multi-layered, vinyl ester laminate, broadcast coating system.

Additional tanks in the Tank Farm, as depicted on **Figure 12,** were used for storage of virgin materials and are not hazardous waste storage tanks or tank farm regulated units and have been emptied and cleaned.

2.4.1 Previous Investigation Results

On the basis of the Final RFA dated September 1991 (revised December 1992), the NYSDEC determined that there was no evidence of the release(s) of hazardous waste(s) and/or constituent(s) that threatened human health or the environment from the Tank Farm.

In 2007, a visual inspection (VI) of SWMU-6 was completed as documented in the 2010 Engineering Evaluation Report. Based on this VI, there did not appear to be a historic or ongoing release, but proactive maintenance was recommended to prevent a potential release from occurring (which was completed in 2009; see **Section 2.4**).

An ICM involving soil and concrete excavation was conducted in 2008 concurrently with SWMU-7 process sewer removal and soil excavation activities at the truck containment pad for the tank farm. Approximately 300 tons of soil from the truck containment pad was excavated and transported off-site for disposal (see **Figure 5**). The approximately 1,650-square foot concrete truck containment pad (approximately 100 tons of decontaminated concrete) was transported off-site and used as either cover material or in the construction of interior landfill access ramps and roadways within a lined landfill footprint as beneficial use landfill material. The new truck containment pad consists of approximately 10-inches of coated, reinforced concrete. Following decontamination of the truck containment pad, only a low concentration of acetone below the Contract Required Quantitation Limit (CRQL) was detected in the rinsate sample collected from the concrete surface. During excavation activities, no elevated VOCs were detected in soil during field screening. Post-excavation confirmation soil sample analytical results indicated that the concentrations of VOCs (including acetone and methylene chloride) detected in nine (9) of 18 soil samples were below established NYSDEC SCOs in 6 NYCRR Subpart 375-6.8(a) and (b). In addition, three (3) of 18 soil samples contained low concentrations of alcohols (including methanol and ethanol). Based on the results of the ICM activities, no further action was recommended with regard to soil investigation or remedial excavation activities for the truck containment pad at SWMU-6 in the ICM Completion Report dated May 28, 2010. The NYSDEC concurred with the no further action recommendation in a letter dated August 26, 2010.

In 2011, operations at the Chemical Development Plant no longer necessitated operation of the hazardous waste storage tanks that comprise SWMU-6. Therefore, activities were conducted as documented in the Rinsate Sample Collection Report (dated September 23, 2011) submitted to NYSDEC RCRA Permitting Section in accordance with the Part 373 Permit requirements for the decontamination and decommissioning of hazardous waste storage tanks T-1005, T-1008, and ST-1, ancillary piping, the tank containment area (tank farm), and truck containment pad in accordance with the Rinsate Sample Collection Plan dated May 4, 2011 and the Rinsate Sample Locations dated June 13, 2011. All constituents in final rinsate samples for components that remain as part of the tank systems and containment areas were below applicable criteria (NYSDEC GA groundwater criteria plus background concentrations). Based on the results, the Tank Farm was placed in a non-regulated "caretaker" (inactive) status. The Part 373 Permit No. 5-0928-00017/00175 underwent Minor Modification relieving requirements associated with active status of these decommissioned components as outlined in the correspondence from Pfizer of August 1, 2011 and as documented in the modified permit issued on December 27, 2011.

Following the decision by the facility to permanently close the Tank Farm, the NYSDEC required the containments only to be cleaned again with final rinsate samples collected between December 4 and 5, 2013. All constituents in final rinsate samples for components that remain as part of the tank systems and containment areas were below applicable criteria (NYSDEC GA groundwater criteria plus background concentrations). Based on the decontamination activities and results documented in the Final Closure Report dated January 24, 2014, the Tank Farm regulated units consisting of Tank T-1005, Tank T-1008, Tank ST-1, associated tank piping and ancillary equipment, the Tank Farm containment area, and truck containment pad were closed in substantial accordance with the Closure Plan (Attachment VII of the Part 373 HWM Permit) and no further decontamination was required. NYSDEC approved the Closure Report in a letter dated March 19, 2014 and terminated authorization to operate the Tank Farm as a permitted hazardous waste management unit. All tanks in the Tank Farm have since been removed.

2.4.2 Proposed Investigation Activities

Following removal of the concrete containments at SWMU-6 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that up to 3 soil samples from under the tank concrete containment pad and sump identified on **Figure 12** (no samples proposed under the truck containment pad due to no further action status approval following ICM completion) will be submitted for laboratory analyses listed in **Table 1**. The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.5 SWMU-7: PROCESS SEWER

The process sewer at the Chemical Development Plant was initially installed in 1967 and consists of an underground waste solvent piping system (interior and exterior). The approximate locations of the interior and exterior process sewer piping networks are depicted on **Figure 13A** through **Figure 13C** and **Figure 14**. The Chemical Development Plant contains a network of interior sumps, floor drains, laterals, and trunk lines that convey process wastewater to exterior piping that convey wastewater to the on-site wastewater treatment building (Building 24) for treatment via a steam stripper in Building 40 prior to discharge to the Village of Rouses Point POTW under the existing Industrial Users Permit. Process wastewater from the Chemical Development Plant included two primary waste streams: secondary rinses and general process wastewater, and re-workable aqueous and scrubber blowdown wastewater.

The integrity evaluation results of the SWMU-7 process sewer system at the Main Plant are documented in the Engineering Evaluation of Select SWMUs Report dated March 12, 2010 and did not warrant further evaluation or ICM

activities. The Main Plant process sewers were not part of the ICM activities conducted at the Chemical Development Plant as documented in the ICM Completion Report.

2.5.1 Previous Investigation Results

A number of previous investigations have been conducted at SWMU-7 at the Chemical Development Plant from 1987 to 2007. The pre-2007 results of the previous investigations are summarized in the SWMU/AOC Assessment Report dated September 1, 2006 previously submitted to the NYSDEC, which generally included three phases of sewer integrity testing on interior and exterior process sewer pipes (including camera inspections and exfiltration testing) and repairs between January 1990 and August 1991. Repairs were also conducted at select locations (lift station and manhole MH-14) in 2003. In addition, replacement of the former interior Pyrex sewer system under the floor of Building 16 at the Chemical Development Plant with a double walled stainless steel piping system with leak detection (700 feet of pipe, trunk line and subsystems, and reconstruction of manhole MH-11) occurred in the early 1990s. No further action was determined by the NYSDEC for SWMU-7 as documented in the final RCRA Facility Assessment (RFA) Report dated December 1992.

In accordance with the corrective action module of the NYSDEC Part 373 Hazardous Waste Management Permit for the Site and due diligence related to a potential property transaction of the facility in 2006, the NYSDEC was notified regarding SWMU-7 in July 2006 along with other Site-specific SWMUs and AOCs. In September 2006, a SWMU/AOC Assessment Report was completed and submitted to the NYSDEC summarizing information regarding the SWMUs/AOCs at the facility and recommended further investigation activities were warranted.

An Engineering Evaluation Work Plan (Appendix A of the April 5, 2007 SWMU/AOC Sampling and Analysis Report) was implemented for SWMU-7 at the Chemical Development Plant from September through October 2007, which included review of closed circuit television (CCTV) video results, process sewer inspection guidance manuals and standard operation procedures (SOPs), and physical inspection and field locating of process sewer trunk lines, branch laterals, and associated piping networks. The camera inspection method used remote television surveillance technology to provide real-time viewing and recording of the sewer lines. The results of the camera inspection activities are documented in the Engineering Evaluation of Select SWMUs Report dated March 12, 2010.

During the September to October 2007 camera inspections at SWMU-7 at the Chemical Development Plant, integrity issues were found in exterior pipes to the north, west, and east of Building 23. The locations of the pipe integrity findings (i.e., cracks, infiltrations, fractures), which were identified in exterior process sewer piping at the Chemical Development Plant portion of the facility, are depicted on Figure 3 of the ICM Completion Report.

As a result of the process sewer pipe integrity inspections, Wyeth notified the NYSDEC regarding the pipe integrity findings identified during the engineering evaluation initially by telephone on October 2, 2007. The written notification dated October 15, 2007 was submitted in accordance with the corrective action module of the NYSDEC Part 373 Hazardous Waste Management Permit (Module III.D.- “Compliance Schedule and Notification Requirements for Newly Discovered Releases at SWMUs or AOCs”).

An ICM Work Plan dated June 13, 2008, which proposed soil excavation and removal of the majority of the exterior process sewer piping system at the Chemical Development Plant, including exterior process sewer systems to the north, west, and east sides of the Site, was submitted to the NYSDEC. ICM activities were conducted on the north and west sides of the Site from 2008 to 2009 as summarized below. ICM activities for the process sewer system located on the east side of the Chemical Development Plant were not completed at that time due to the unknown operation status of the Site.

The ICM was conducted from June 2008 to December 2009 and consisted of the following primary activities: soil excavation, exterior process sewer piping and structures removal and abandonment, dewatering (including treatment and discharge), collection of post-excavation confirmatory soil samples for laboratory analysis, process sewer piping and structures decontamination, backfilling excavations, site restoration, excavated materials management and disposal, and community air monitoring (see **Figure 5**). Approximately 5,200 tons of excavated soil (which included decontaminated Duriron and fiberglass piping) from SWMU-7 was transported off-site for disposal. Approximately 2,100 tons of soil was re-used for backfill at SWMU-7. A total of approximately 750 linear feet of process sewer piping, eight (8) concrete process sewer manholes, the Tank Farm Drain (TFD) in the concrete truck containment pad located on the west side of the Tank Farm (SWMU-6), approximately 110 linear feet of concrete encasing the process sewer piping, and various sections of concrete/asphalt driveways and walkways overlying the process sewer system were removed from 2008 to 2009. In addition, approximately 138 linear feet of the process sewer system and two manholes were grouted in-place. All excavated materials were decontaminated (steam cleaned) and size-reduced, with approximately 280 tons of concrete and 27 tons of asphalt shipped to a local landfill to be used as beneficial use landfill material. In addition, approximately 0.5 tons of stainless steel piping was shipped off-site for recycling. The new exterior process sewer system consists of approximately 900 linear feet of double-walled stainless steel piping, 22 coated manholes, and electrical controls on the north and west sides of the Chemical Development Plant (see **Figure 14**).

VOCs (including tentatively identified compounds) were detected in 31 of 43 soil samples analyzed. Of the 31 samples where VOCs were detected, six (6) samples exceeded the established Subpart 375-6.8(a) Unrestricted Use SCOs. No VOC concentrations exceeded established Subpart 375-6.8(b) Restricted Use – Residential SCOs. Based on the results of the post-excavation confirmation soil sampling, no further action was recommended with regard to soil investigation or excavation activities for the north and west sides of SWMU-7: Process Sewer at the Chemical Development Plant in the ICM Completion Report dated May 14, 2010. The NYSDEC concurred with the no further action recommendation in a letter dated June 3, 2010.

The ICM for the process sewer system located on the east side of the Chemical Development Plant was not completed due to the unknown operation status of the Site. A subsurface investigation near previously identified process sewer integrity findings on the east side of the Chemical Development Plant was conducted in August 2010, including soil sampling and downgradient groundwater monitoring in the vicinity of the Chemical Development Plant process sewer system as outlined in the previously approved Supplemental SAP Addendum No. 3 dated June 21, 2010. The soil sampling results were submitted to NYSDEC later in 2010 and the quarterly groundwater sampling results have been submitted in the quarterly progress reports provided to NYSDEC and are summarized in Table 1 of the 2013-2014 Annual Progress Report. No concentrations of constituents were detected in soil or groundwater samples above established NYSDEC criteria.

Downgradient monitoring wells MW-24/24S, MW-25/25S, and MW-26/26S located on the east side of the Chemical Development Pilot Plant and downgradient from SWMU-7 have been sampled between four (4) and nine (9) times from September 2010 to October 2013 and have only shown sporadic detections of 1,2-dichloroethane and chloroform below NYSDEC groundwater quality standards (see Table 1 in 2013-2014 Annual Progress Report). No concentrations of VOCs were detected in MW-24S, MW-25/25S, or MW-26/26S above NYSDEC groundwater quality standards during the most recent sampling events in 2012-2013. MW-24 contained dichlorodifluoromethane between 19 and 36 μg/L and above the NYSDEC groundwater quality standard of 5 μg/L in 2011 and 2012.

2.5.2 Proposed Investigation Activities

Following removal of the concrete slabs and process sewer piping networks comprising SWMU-7 associated with the demolition of the Chemical Development Pilot Plant, the following activities will be conducted:

- Exterior Process Sewers (North & West Sides of Building 23): Since this portion of the process sewer system consists of double-walled stainless steel piping replaced under an ICM program completed between 2008-2009 resulting in no further action for soil (see **Figure 5** and **Figure 14**) and was only periodically used since 2009, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. Should field screening results warrant soil sample collection, then soil samples will be collected as necessary and analyzed for VOCs via 8260C (see **Table 1**).
- Exterior Process Sewers (East Side of Building 23): Since this portion of the process sewer system was not included in the ICM program discussed in **Section 2.5.1**, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that approximately 1 sample per 50 linear feet of exterior underground piping (with samples to be collected at previously identified integrity issues) will be submitted for laboratory analyses including VOCs via EPA Method 8260C (see **Table 1**). The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.
- Interior Process Sewers (Buildings 16, 23, 24, 26, 31, 34, and 40): Field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that approximately 1 sample per 50 linear feet of interior underground process sewer piping will be submitted for laboratory analyses including VOCs via EPA Method 8260C (see **Table 1**). The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.6 SWMU-12: BUILDING 16 FORMER DRYWELL

The Building 16 Former Drywell (SWMU-12) was connected to Building 16 until it was excavated and removed in the 1980s. The former dry well location was determined following review of historical site plans depicting the location and is co-located with SWMU-4 as depicted on **Figure 9**.

2.6.1 Previous Investigation Results

One soil boring was installed in 2006 to evaluate subsurface conditions as close to the former drywell (SWMU-12) as possible; however, due to the density of underground utilities such as electrical and natural gas lines, the soil boring was located approximately 10 feet west of the actual drywell location. The soil boring was advanced to 20 feet bgs, which corresponded to refusal of the drilling equipment. Two soil samples were collected for laboratory analysis: one from 5-6 feet bgs and one from 14-15 feet bgs.

Also in 2006, a groundwater monitoring well (MW-1) was installed as close to the former drywell (SWMU-12) as possible and within SWMU-4; however, due to the density of underground utilities such as electrical and natural gas lines, the well was located approximately 10 feet west of the actual drywell location. MW-1 was screened in the lower till unit. A groundwater sample was also collected from a temporary groundwater sample point (GP01-TW01) installed in the upper till unit directly adjacent to MW-1. The locations of the soil borings, temporary groundwater sample point, and monitoring well MW-1 are depicted on **Figure 9** and **Figure 10**.

The 2006 soil analytical results are summarized below (see the April 2007 SAR for additional details) and were compared to the NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs) in 6 NYCRR Subpart 375-6.8(a) and Restricted Use – Residential SCOs in 6 NYCRR Subpart 375-6.8(b), where established and are depicted on **Figure 9**. Where a value in Subpart 375-6.8(b) has not been established, values were taken from NYSDEC Technical and Administrative Guidance Manual (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels. The findings are summarized below:

- No physical indications of a chemical release, such as odors, staining, or elevated photoionization detector (PID) field screening readings, were observed during the advancement of the soil borings.
- No concentrations of VOCs or SVOCs exceeded NYSDEC Unrestricted Use SCOs in 6 NYCRR Subpart 375-6.8(a).
- The soil sample analytical results for total metals from SWMU-12 included arsenic (ranging from 2.4 to 3.4 mg/kg), barium (ranging from 22.8 to 41.3 mg/kg), cadmium (ranging from 0.13B to 0.17B mg/kg), chromium (ranging from 7.6 to 14.6 mg/kg), lead (ranging from 3.6 to 6.1 mg/kg), selenium (ranging from 1B to 1.8B mg/kg), and mercury (0.009B mg/kg). Only chromium (14.6 mg/kg) exceeded the NYSDEC Unrestricted Use SCO for hexavalent chromium (which was not analyzed for) in 6 NYCRR Subpart 375-6.8(a), but were below the SCO for trivalent chromium of 30 mg/kg and below the NYSDEC Restricted Use – Residential SCOs in 6 NYCRR Subpart 375-6.8 (b).

The 2006 groundwater analytical results were compared to NYSDEC GA groundwater quality standards/guidance values and are depicted on **Figure 10**:

- The groundwater analytical results for the temporary groundwater sample point installed in the upper till unit adjacent to MW-1 in 2006 included acetone (12 μg/L), 1,2-dichloroethane (39 μg/L), benzene (0.5J μg/L), and toluene (0.7J μg/L). Only 1,2-dichloroethane exceeded the NYSDEC groundwater quality standard of 0.6 μg/L.
- No SVOCs exceeded the applicable NYSDEC groundwater quality standards in the groundwater sample from the temporary groundwater sample point.
- The groundwater analytical results for total metals for MW-1 included barium (84.5 μg/L), chromium (0.83B μg/L), and lead (2.2B μg/L) below NYSDEC groundwater quality standards. The groundwater sample collected from the temporary sample point contained arsenic (58.9 μg/L), barium (854 μg/L), cadmium (8.5 μg/L), chromium (217 μg/L), and lead (118 μg/L), which exceed the applicable NYSDEC groundwater quality standards for all, except barium. The higher concentrations of metals in the temporary groundwater sample point (constructed without a sand filter pack) were most likely due to turbidity.

Additional soil sampling was conducted at the former drywell location (SWMU-12) in 2010 during implementation of the site-wide CMS program including the collection of two (2) soil samples for VOC analysis. The soil sampling was conducted following vacuum excavation activities around underground utilities to facilitate discrete soil sample collection using Encore samplers at 2 and 7 feet bgs at the former dry well location. The soil sample analytical results were compared to the NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs) in 6 NYCRR Subpart 375-6.8(a) as summarized below:

- Three (3) VOCs were detected including methyl ethyl ketone (MEK), acetone, and methylene chloride at low concentrations well below the Unrestricted Use SCOs as shown on the Table C2 in Appendix C of the Draft CMS Report. Methylene chloride was also detected in the associated laboratory method blank which indicates that this compound was likely a result of laboratory contamination and not a release. In addition, two (2) tentatively identified compounds (TICs) were detected including hexane and chlorodifluoromethane

at low concentrations (0.0068 mg/kg and 0.038 mg/kg, respectively). The analytical results are depicted on **Figure 9**.

An additional groundwater investigation was also conducted at SWMU-4 and SWMU-12 beginning in 2010 during implementation of the CMS program to further investigate the presence of VOCs previously detected in the temporary groundwater sample point and MW-1 and to support Site-wide characterization of groundwater quality and hydrogeologic conditions (see **Section 2.2.1**).

2.6.2 Proposed Investigation Activities

Following removal of the asphalt/concrete pavement and underground utilities at SWMU-4/SWMU-12 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that up to 4 soil samples will be collected from beneath the excavated utilities at the SWMU-12 location identified on **Figure 10** and submitted for laboratory analyses listed in **Table 1**. The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.7 SWMU-13: BUILDING 16 FORMER SANITARY SEWER HOLDING TANKS

The Building 16 sanitary waste line was originally connected in 1967 directly to the sanitary sewer, with a piping tee connecting the line to a 1,000-gallon underground holding tank. Flow could be manually diverted to the holding tank in the event of a spill or other releases to the wastewater system. The holding tank could then be pumped out and the product recovered or drummed for offsite disposal. Later, a larger 5,000-gallon underground holding tank was installed on the waste line for the same purpose. Use of these holding tanks was discontinued in 1985 when a process wastewater treatment system was constructed to treat the Chemical Development Plant wastewater. The holding tanks were located adjacent to each other off the southeast corner of Building 16 and the tanks and surrounding soils were excavated in 2004 as documented in the September 2006 SWMU/AOC Assessment Report previously submitted to NYSDEC. Currently, the location of the former tanks is covered by Building 43, which was constructed in 2005. The approximate location of SWMU-13 is depicted on **Figure 15**.

2.7.1 Previous Investigation Results

As previously documented in the April 5, 2007 Sampling and Analysis Report (SAR) submitted to NYSDEC, in 2006, three (3) soil borings were installed to evaluate subsurface conditions underneath Building 43 at SWMU-13 in accordance with the NYSDEC approved Sampling and Analysis Plan (SAP) dated September 1, 2006 (see **Figure 17**). One boring was advanced to 20 feet bgs in the current mechanical room for Building 43 at the reported western end of the former 1,000-gallon tank location and two soil samples were collected at 11-12 feet bgs and 15-16 feet bgs, respectively. The second boring was advanced to 16 feet bgs adjacent to the exterior east wall of Building 43 at the reported eastern end of the former 1,000-gallon tank and two soil samples were collected from 11-12 feet bgs and 14-15 feet bgs, respectively. The third boring was advanced to 11 feet bgs (which corresponded to refusal due to the limited access for the drilling equipment) inside the southern stairwell for Building 43 at the former 5,000-gallon tank location and one soil sample was collected from 10-11 feet bgs. In addition, a groundwater sample from a temporary groundwater sample point (GP11-TW11) was collected outside and downgradient of Building 43 to investigate potential groundwater impacts in the upper till unit.

The 2006 analytical results are summarized below (see the April 2007 SAR for additional details) and were compared to the NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs) in 6 NYCRR Subpart 375-6.8(a) and Restricted Use – Residential SCOs in 6 NYCRR Subpart 375-6.8(b), where established. Where a value in Subpart 375-6.8(b)

has not been established, values were taken from NYSDEC Technical and Administrative Guidance Manual (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels. The findings are summarized below:

- No physical indications of a chemical release, such as odors, staining, or elevated photoionization detector (PID) field screening readings, were observed during the advancement of the soil borings.
- Fill material was noted in each of the borings to approximately 9 feet bgs, which was placed during construction of the existing Building 43 following the removal of the tanks. Soil samples were collected below 9 feet bgs for laboratory analyses.
- No concentrations of VOCs or SVOCs exceeded NYSDEC Unrestricted Use SCOs in 6 NYCRR Subpart 375-6.8(a).
- Concentrations of metals were detected in select soil samples and included: arsenic (ranging from 1.7B to 2.9 mg/kg), barium (ranging from 18.9 to 44.5 mg/kg), cadmium (ranging from 0.07 to 0.10B mg/kg), chromium (ranging from 6.8 to 13 mg/kg), lead (ranging from 3.1 to 6.2 mg/kg), selenium (ranging from 0.068B to 0.93B mg/kg), and mercury (0.007B mg/kg). Only chromium exceeded the NYSDEC Unrestricted Use SCO for hexavalent chromium (which was not analyzed for) in 6 NYCRR Subpart 375-6.8(a), but were below the SCO for trivalent chromium of 30 mg/kg and below the NYSDEC Restricted Use – Residential SCOs in 6 NYCRR Subpart 375-6.8 (b).
- Concentrations of VOCs were detected in groundwater from the temporary groundwater sample point (GP11-TW11) downgradient of Building 43 in the upper till unit including acetone (10 μg/L), chloroform (2J μg/L), and trichloroethene (1J μg/L) below applicable NYSDEC groundwater quality standards.
- Naphthalene was also detected in groundwater from the temporary groundwater sample point (GP11-TW11) at 0.3J μg/L. No concentrations of SVOCs in groundwater exceeded the applicable NYSDEC groundwater quality standards.
- The groundwater sample from the temporary groundwater sample point (GP11-TW11) contained arsenic (80.1 μg/L), barium (850 μg/L), cadmium (9.8 μg/L), chromium (290 μg/L), and lead (115 μg/L) all above the applicable groundwater quality standards, except for barium. The higher concentrations of metals in the temporary groundwater sample point (constructed without a sand filter pack) were most likely due to turbidity.
- PCBs were not detected in the soil samples analyzed from the three (3) soil borings or in the groundwater sample from the temporary groundwater sample point.

In August 2010, two permanent groundwater monitoring wells (MW-27 and MW-27S) were installed at the temporary groundwater sample point location downgradient of SWMU-13 and Building 43 in the lower till and upper till units, respectively. MW-27 has been sampled nine (9) times from September 2010 through October 2013 and MW-27S has been sampled eight (8) times from September 2010 to March 2012 and the analytical results are summarized below and in Table 1 of the 2013-2014 Annual Progress Report:

- Concentrations of several VOCs were detected in the lower till monitoring well MW-27 including 1,1,-dichloroethene (0.39J μg/L in November 2012 only), 1,2-dichloroethane (1.8J to 5 μg/L), carbon tetrachloride (0.47J to 3.3 μg/L), chloroform (0.71J to 5.4 μg/L), cis-1,2-dichloroethene (0.84J to 2.5 μg/L), methyl tert-butyl ether or MTBE (0.19J to 0.59J μg/L), trichloroethene (5.5 to 15 μg/L), and vinyl chloride (0.94 to 2.4 μg/L). Several tentatively identified compounds including ethyl ether (0.77 to 6.6 μg/L) and chlorodifluoromethane (1.6 to 2.8 μg/L) were also sporadically detected. The concentrations of 1,2-dichloroethane and trichloroethene exceeded NYSDEC groundwater quality standards during all

sampling events. The overall trends in the concentrations of the VOCs detected in MW-27 are either stable or decreasing.

- Concentrations of several VOCs were detected in the upper till monitoring well MW-27S including primarily carbon tetrachloride (0.78J to 2.9 μg/L), chloroform (0.73J to 3.4 μg/L), and trichloroethene (0.33J μg/L in the initial sampling event only). No concentrations of VOCs in MW-27S have exceeded NYSDEC groundwater quality standards. The overall trend in the concentrations of the VOCs detected in MW-27S is decreasing.

2.7.2 Proposed Investigation Activities

Based on the results of the investigation activities summarized above coupled with the extensive site construction activities (including soil excavation) conducted during the construction of Building 43 and the inaccessible location of the former sanitary sewer holding tanks that is not expected to be encountered during the demolition activities, no further investigation is proposed for SWMU-13: Building 16 Former Sanitary Sewer Holding Tanks. Following removal of the concrete slab of Building 43 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that 1 soil sample will be collected from the fill material above the former tank location area and submitted for laboratory analyses listed in **Table 1**. The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.8 SWMU-14: WASTE TOLUENE MANAGEMENT EAST OF TANK FARM

SWMU-14 was located west of the Chemical Development Plant, between the Tank Farm and Building 23, underneath overhead solvent piping (see **Figure 4** and **Figure 5**). A release occurred on March 27, 1992 when 1-2 gallons of waste toluene were released to soil from the overhead solvent piping. Soil was subsequently excavated on three occasions from April through June 1992 (approximately nineteen 55-gallon drums), with final post-excavation soil samples indicating no concentrations of toluene detected in soil.

A subsequent toluene release was reported to NYSDEC on September 8, 1992 (Spill Number 98206598). The spill was due to a leaking overhead flange on a 2-inch diameter pipeline, with approximately 290 gallons released to the secondary containment, some of which reached the underlying soil. The toluene captured by the secondary containment system was pumped out for disposal. Soil outside the secondary containment system was reportedly excavated and sent off-site for disposal by incineration. This spill case was closed by the NYSDEC on August 9, 1993.

On October 31, 2006, a solvent release occurred when a pin hole-sized leak was discovered from one of the steel overhead solvent transfer pipes. The NYSDEC was notified of the release (Spill Number 0608797). The leak was observed from a suspected weld on an elbow on the spent solvent overhead transfer line from Building 23 to the Spent Solvent Tank (T-1005) in the Tank Farm. The spent solvents consisted of t-butyl methyl ether (TBME), tetrahydrofuran (THF), ethanol and mixed solvents (i.e., isopropyl alcohol and acetone). On-site personnel and a spill response contractor excavated approximately 12 tons of soil to an approximate depth of 5 feet bgs. The excavated soil was transported to Trade Waste Incineration (TWI) in Sauget, Illinois for disposal. The spill case was closed on November 2, 2006 by NYSDEC.

2.8.1 Previous Investigation Results

Soil and groundwater sampling have been conducted to evaluate SWMU-14 and the surrounding area in 2006 and 2007, respectively, under the approved Sampling and Analysis Plan (SAP) dated September 1, 2006 and Supplemental SAP dated June 29, 2007.

On October 26, 2006, one soil boring (SWMU14-SB01) was initially installed to evaluate subsurface conditions at the SWMU-14 waste toluene release area. The soil boring was advanced to eight feet bgs east of the Tank Farm and underneath the overhead solvent piping connecting the Tank Farm to Building 23. Elevated photoionization detector (PID) field screening readings for total volatile organic compounds (VOCs) were observed in soil during advancement of boring SWMU14-SB01. One soil sample (SWMU14-SS-SB01-28) from a depth of 5-6 feet bgs was selected for laboratory analysis based on field screening results. Five VOCs were detected in the soil sample including: acetone (760 milligrams per kilogram [mg/kg]), methyl acetate (15 mg/kg), methylcyclohexane (33 mg/kg), methyl tert-butyl ether or MTBE (50 mg/kg), and toluene (720 mg/kg). In addition, several tentatively identified compounds (TICs) were detected. Although MTBE was reported by the analytical laboratory, the compound tert-butyl methyl ether (TBME) is used at the Chemical Development Plant and is synonymous with MTBE.

Of the VOCs detected, acetone, MTBE, and toluene exceeded their respective NYSDEC Subpart 375-6.8(a) Unrestricted Use Soil Cleanup Objectives (SCOs). In addition, acetone and toluene exceeded their respective NYSDEC Subpart 375-6.8(b) Restricted Use – Residential SCOs. No other VOCs exceeded established NYSDEC SCOs.

On December 19, 2006, a temporary groundwater sample point (GP02-TW02) was installed adjacent to the soil boring SWMU14-SB01 location with a screened interval from 0 to 12 feet bgs. On December 21, 2006, a groundwater sample (GP02-GW-TW02) was collected for VOC analysis. The groundwater analytical results indicated the presence of acetone (480,000 μg/l), methyl acetate (760 μg/l), MTBE (42,000 μg/l), and toluene (7,700 μg/l). In addition, several TICs were detected including 2-propanol (8,200 μg/l), ethyl ether (1,100 μg/l), and tetrahydrofuran (40,000 μg/l). The concentrations of toluene, acetone, MTBE, and tetrahydrofuran in groundwater exceed their respective NYSDEC groundwater quality standards or guidance values.

In September 2007, a total of 18 additional soil borings were advanced in the vicinity of SWMU-14 around the perimeter and underneath the overhead solvent pipe rack in accordance with the Supplemental SAP dated June 29, 2007. The purpose of the additional borings was to further delineate VOCs following the October 31, 2006 release. The borings were advanced to between 7 and 19 feet bgs. Continuous soil samples were collected from each soil boring and field screened with a PID for total VOCs. Based on the field screening results and to provide spatial coverage for the area of SWMU-14 and the overhead pipe rack, soil samples were collected from 11 of the 18 soil borings for laboratory analysis for VOCs.

Concentrations of VOCs were detected in seven (7) of the 11 soil samples collected for laboratory analysis, including 1,2-dichloroethane, acetone, ethylbenzene, methyl acetate, methylcyclohexane, methylene chloride, MTBE, tetrachloroethene, and toluene. Concentrations of VOCs in one soil sample (SWMU14-SS-SB13-58 at 7 feet bgs) exceeded the NYSDEC Subpart 375-6.8(a) Unrestricted Use SCOs, including acetone (14 mg/kg) and toluene (15 mg/kg). No other VOC concentrations exceeded established SCOs.

Based on the 2006 and 2007 sampling results, an ICM Work Plan dated June 13, 2008, which included SWMU-14 and a portion of SWMU-7: Process Sewer (Chemical Development Plant), was submitted to the NYSDEC. ICM activities at SWMU-14 were conducted as summarized in **Section 2.5.1**.

The ICM involving soil excavation was conducted concurrently with SWMU-7 process sewer excavation activities in 2009 as the 2 SWMUs were co-located. Approximately 13 tons of soil was excavated and transported off-site for disposal. The analytical results of the post-excavation confirmation soil sampling indicate that the elevated concentrations of VOCs previously detected in soil in 2006 and 2007 at SWMU-14 were removed. The concentrations of acetone, methyl tert-butyl ether (MTBE), and toluene detected in post-excavation confirmation soil samples collected from the base of the excavation at 10 feet bgs were below all established NYSDEC SCOs in 6 NYCRR Subpart 375-6.8(a) and (b). A 2006 excavation of approximately 12 tons of soil from the SWMU-14 release area was also conducted. Additional soil in the vicinity of the SWMU-14 release area was excavated from underneath and around the perimeter of the overhead solvent pipe rack as a result of SWMU-7 ICM work. Based on the results of the ICM activities, no further action was recommended with regard to soil investigation or remedial excavation activities for SWMU-14 in the ICM Completion Report dated May 21, 2010. The NYSDEC concurred with the no further action recommendation in a letter dated June 17, 2010.

Based on the pre-ICM groundwater results (including elevated concentrations of toluene, acetone, MTBE, and tetrahydrofuran) from the temporary groundwater sample point installed at SWMU-14 in 2006, investigation of downgradient groundwater quality at the Chemical Development Plant and SWMU-14 was proposed in the NYSDEC approved Supplemental SAP Addendum No. 3 dated June 21, 2010 and conducted during the CMS program at monitoring wells MW-25/25S (each sampled seven (7) times between September 2010 and March 2012) and MW-26/26S (MW-26 sampled nine (9) times between September 2010 and October 2013 and MW-26S sampled seven (7) times between September 2010 and March 2012). No concentrations of VOCs have been detected exceeding NYSDEC groundwater quality standards, with only a few sporadic detections of VOCs occasionally detected (including 1,2-dichloroethane, chloroform, and several TICs).

2.8.2 Proposed Investigation Activities

Based on the soil remedial activities completed to date and no further action status for the soil for SWMU-14, no additional soil investigation activities are proposed for SWMU-14 during the demolition of the Chemical Development Pilot Plant.

2.9 SWMU-15: BUILDING 24 WASTEWATER TREATMENT PLANT

The Building 24 wastewater treatment plant (also known as the Effluent Control building) was constructed in 1985 and is approximately 2,500 square feet (see **Figure 4** for the SWMU-15 location and **Figure 16** for additional details regarding the layout of the building). This building receives all process wastewater generated at the Chemical Development Plant and BMP sump discharge from the Main Plant. Process wastewater piping from the Chemical Development Plant discharges to a junction box (also referenced as a wastewater consolidation sump) located approximately 30 feet west of Building 24, within a small shed. The sump discharges to two sumps located outside and adjacent to the western wall of Building 24. These two below-ground, covered sumps discharge to a second junction box/sump located inside the western end of Building 24. Wastewater is pumped from the interior junction box into three 10,000-gallon fiberglass reinforced plastic above ground feed tanks, located along the northern wall of the building. Two pH neutralization chemical stock tanks (sodium hydroxide and sulfuric acid; 500-gallons each) are located south of the feed tanks. The feed tanks discharge to the steam stripper located in Building 40 (SWMU-17). Prior to construction of the steam stripper in 2003, process wastewater was conveyed to carbon absorption beds (Cyclesorb) located in Building 24.

2.9.1 Previous Investigation Results

In 2007, a VI was conducted as documented in the 2010 Engineering Evaluation Report for this SWMU. A detailed inspection of the sump walls and bases could not be performed due to the active nature of facility operations. Hairline cracks were observed in the concrete floor in Building 24. Liquid was observed on the floor from cleaning operations in the building. No evidence of pipeline or tank leakage was observed. During the VI, no evidence of a historic or ongoing release was observed.

Downgradient monitoring wells MW-24/24S and MW-25/25S are located immediately east of Building 24 and have been sampled between four (4) and nine (9) times from September 2010 to October 2013 and have only shown sporadic detections of 1,2-dichloroethane and chloroform below NYSDEC groundwater quality standards (see Table 1 in 2013-2014 Annual Progress Report). No concentrations of VOCs were detected in MW-24S, MW-25/25S above NYSDEC groundwater quality standards during the most recent sampling events in 2012-2013. MW-24 contained dichlorodifluoromethane between 19 and 36 μg/L and above the NYSDEC groundwater quality standard of 5 μg/L in 2011 and 2012.

2.9.2 Proposed Investigation Activities

Following removal of the concrete slab and underground utilities at SWMU-15 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that 3 soil samples will be collected beneath the building and sumps identified on **Figure 16** and submitted for laboratory analyses listed in **Table 1**. The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.10 SWMU-17: BUILDING 40 WASTEWATER STEAM STRIPPER BUILDING

Building 40 (also known as the Steam Stripper building) was constructed in 2003 and is approximately 4,000 square feet (see **Figure 4** for the SWMU-17 location and **Figure 16** for additional details regarding the layout of the building). This is adjacent to Building 24, to the north, and contains a steam stripper for wastewater treatment. Process wastewaters from the Chemical Development Plant (via Building 24) and from the Main Plant (piped in through overhead lines to a feed tank in Building 40) are treated by the steam stripper prior to discharge to the Village of Rouses Point POTW. The steam stripper is located in the northern portion of the building. Two 10,000 gallon stainless steel storage tanks that hold wastewaters from the Main Plant prior to discharge to the stripper are located in the southern portion of Building 40.

The Steam Stripper combines the effects of steam and heat (typically 300 degrees Celsius) causing VOCs to transfer from the liquid to the vapor phase. The vapor discharge is then condensed and collected in a reflux tank equipped with a 3-phase decanter mechanism. A reflux pump returns aqueous distillate to the stripper. The top, solvent phase is directed to a distillate tank located in the eastern portion of the building over a “drumming room” (drum transfer station). Solvents are drained from the distillate tank into 55-gallon drums for off-site disposal. The “drumming room” is curbed with the floor and walls providing secondary containment.

Treated water leaves the bottom of the stripping tower and discharges to the POTW. Prior to discharge, the treated wastewater is monitored in accordance with Pharmaceutical Effluent Guidelines as specified in the Industrial User’s Permit between the Village of Rouses Point and Wyeth. Typically, 10,000 to 12,000 gallons of process wastewater were treated by the stripper in 8-hour batches.

2.10.1 Previous Investigation Results

In 2007, a VI was conducted as documented in the 2010 Engineering Evaluation Report for this SWMU. During the VI of the steam stripper building, minor hairline cracks were observed in the concrete floor. The acid transfer area had some signs of spills, starting to deteriorate at the top of the floor. Based on conversations with facility operators, these stains most likely are from citric acid used during recent temporary shutdown cleaning procedures. No evidence of historic or ongoing releases was observed. No issues were noted in the drum transfer area.

Downgradient monitoring wells MW-24/24S and MW-25/25S are located immediately east of Building 24 and have been sampled between four (4) and nine (9) times from September 2010 to October 2013 and have only shown sporadic detections of 1,2-dichloroethane and chloroform below NYSDEC groundwater quality standards (see Table 1 in 2013-2014 Annual Progress Report). No concentrations of VOCs were detected in MW-24S, MW-25/25S above NYSDEC groundwater quality standards during the most recent sampling events in 2012-2013. MW-24 contained dichlorodifluoromethane between 19 and 36 μg/L and above the NYSDEC groundwater quality standard of 5 μg/L in 2011 and 2012.

2.10.2 Proposed Investigation Activities

Following removal of the concrete slab and underground utilities at SWMU-17 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that 4 soil samples will be collected beneath the building (with at least one (1) soil sample specifically targeted to be collected at the solvent drumming room location) identified on **Figure 16** and submitted for laboratory analyses listed in **Table 1**. The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.11 SWMU-23: BUILDING 16 FORMER WASTE STORAGE AREA IN NORTHWEST CORNER

A room in the northwest corner of Building 16 (Room 1614) was formerly used as a solvent storage area from 1967 until the Tank Farm was constructed in 1983. No releases have been identified for this SWMU. The room is no longer used to store wastes and is a utility room containing mechanical equipment and is partially used to wash and dry staff uniforms using household-type washer and dryer units. The approximate location of SWMU-23 is depicted on **Figure 17**.

2.11.1 Previous Investigation Results

An integrity inspection was conducted by a professional engineer on October 5, 2007 to evaluate the potential for ongoing subsurface releases including identifying any cracks, deterioration, or staining in accordance with the NYSDEC-approved Engineering Evaluation Work Plan for multiple SWMUs (included in the April 2007 SAR as Appendix A). The results of the inspection are documented in the March 12, 2010 Engineering Evaluation of Select SWMUs Report and indicated that no evidence of a historic or ongoing release was observed. Several cracks were observed in the concrete floor.

Since the SWMU is inactive and no evidence of a historic or ongoing release was identified, the concrete floor of the former storage area was cleaned on July 26, 2011 in accordance with the NYSDEC approved CMS Work Plan. The room was initially broom swept then cleaned with water and detergent. To verify the effectiveness of the cleaning process, rinsate sampling was conducted following NYSDEC-provided guidance. Following cleaning, a rinsate sample was collected using distilled water and analyzed for VOCs. Acetone and methyl ethyl ketone (MEK) were detected at low estimated concentrations well below NYSDEC groundwater quality standards. During the cleaning

activities, a crack was noted in the concrete floor leading to a floor drain, which was also noted during the visual inspection of SWMU-23 conducted in 2007 (see Engineering Evaluation Report dated March 12, 2010). Water was observed to penetrate the crack during the cleaning activities.

Soil sampling was subsequently conducted under the crack on October 19, 2011 (following coring through the concrete floor) for VOC analysis from 0.5 to 1.5 feet below ground surface to evaluate the potential for a historic subsurface release. No concentrations of VOCs were detected in soil, except for hexane (a tentatively identified compound) at 0.0053 JN milligrams per kilogram (mg/kg). The location of SWMU-23 and the soil sample location is depicted on **Figure 18**.

2.11.2 Proposed Investigation Activities

Following removal of the concrete slab at SWMU-23 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that 1 soil sample will be collected from beneath SWMU-23 and submitted for laboratory analyses listed in **Table 1**. The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.12 SWMU-24: BUILDING 31 SOLVENT CONDENSATE SYSTEM

Building 31 is the Vent Condenser building and was constructed in 1996 and is approximately 3,000 square feet (see **Figure 4** and **Figure 18**). The building contains three floors and houses the primary condensate pumps and tanks connected to reactors in Building 23 (smaller process condensers are located at each of the reactors in Building 23 that are not connected to Building 31). The first floor contains two condensate tanks in the solvent collection room that receive solvent condensate from the equipment located above on the second and third floors. Waste solvents are transferred from the tanks into 55-gallon drums for offsite disposal or reclamation. The second floor contains the condenser control units (environmental controls). The third floor contains more condensers.

Process vapors from the Chemical Development Plant are directed to the vent condensers in Building 31. The emission streams are cooled to change the organic vapors into liquid. The condensed water-soluble organic compounds are recovered and reused. The vent condenser discharge is directed to a scrubber system in Building 31A to neutralize acids prior to discharge through a GEP stack. There are approximately 27 solvent vent condensers, two interior solvent condensate ASTs, and a waste solvent drumming area in Building 31.

2.12.1 Previous Investigation Results

In 2007, a VI was conducted as documented in the 2010 Engineering Evaluation Report for this SWMU. Room 3104-1 contained minor cracks in the concrete floors. Room 3103-2 contained concrete joint sealant that was peeling up in places. Room 3103-3 contained peeling paint on the floor. No evidence of historic or ongoing releases was observed.

2.12.2 Proposed Investigation Activities

Following removal of the concrete slab and underground utilities at SWMU-24 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that 3 soil samples will be collected from beneath the building with at least one (1) soil sample targeted in the solvent drumming room (see **Figure 18**) and will be

submitted for laboratory analyses listed in **Table 1**. The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

2.13 SWMU-26: CHEMICAL DEVELOPMENT REACTOR BAY DRUMMING AREAS (MULTIPLE LOCATIONS)

Waste drumming/storage areas for the reactor bays within Chemical Development Plant existed in multiple locations within the following rooms within Building 16 (constructed in 1967) and Building 23 (constructed in 1985) prior to storage in SWMU-1, SWMU-4, and/or SWMU-5 Container Storage Area (Building 17C) depending on the time period as summarized below (see **Figure 4** and **Figure 19**):

- Reactor Room 1615
- Centrifuge Room 1616
- Reactor Rooms 2322C, 2322D, and 2325

2.13.1 Previous Investigation Results

In 2007, a VI was conducted as documented in the 2010 Engineering Evaluation Report for this SWMU. Minor cracking was observed in floor tiles and grout lines, specifically in rooms 1615 and 1616 and throughout Building 23. No evidence of historic or ongoing releases was observed.

2.13.2 Proposed Investigation Activities

Following removal of the concrete slab and underground utilities at SWMU-26 associated with the demolition of the Chemical Development Pilot Plant, field screening of soil will initially be conducted using a combination of visual/olfactory observations and a PID. It is anticipated that at least 8 soil samples will be collected and submitted for laboratory analyses listed in (**Table 1**). The methods and procedures for completing the investigation (e.g., soil screening, sampling, laboratory analyses, etc.) are summarized in **Section 3**.

3. INVESTIGATION TASK METHODS AND PROCEDURES

As described in **Section 2.0**, various investigation activities will be utilized to further evaluate the potential for releases to the environment from SWMUs during and following the demolition of the Chemical Development Pilot Plant. The various investigation tasks, methods, and procedures are described in the following sections and in the September 2006 QAPP.

3.1 FIELD SCREENING AND SOIL SAMPLE COLLECTION METHODS

Soil samples will be field screened for volatile organic vapors using a photoionization detector (PID) equipped with an 11.7 eV lamp to provide an initial assessment of potential presence of VOCs. PID readings will be collected from soil at a minimum frequency of 1 PID reading per 1000 square feet of SWMU-area and 1 PID reading per 50 linear feet of process sewer piping (SWMU-7) and over 1 to 2 foot depth increments and biased towards visual/olfactory indications of soil releases. Soil samples selected for field screening will be placed in a container and sealed. Following sealing, the container will be shaken and left undisturbed for several minutes, and then shaken again prior to opening. Once the container is opened, the tip of the PID will be inserted into the container and the highest reading will be recorded as the headspace measurement.

At selected SWMUs and based partially on field screening results, soil sampling will be conducted in order to determine if a release occurred to soil from a SWMU through laboratory analyses. Soil sampling will be conducted utilizing hand tools (i.e., scoops, shovels, trowels, augers) and/or EnCore sampling devices (for VOC analysis). All soil samples selected for VOC analysis will be discrete and will not be composited and will be collected using EnCore sampling devices prior to mixing the sample. The soils for non-volatile analyses will be homogenized using a stainless steel trowel or spoon and the appropriate laboratory sample jars will be filled. To homogenize, all rock, twigs, and debris will be removed; the sample will be mixed thoroughly, quartered, mixed again, and then rolled to the center of the pan. The entire sample will then be mixed again and transferred into the sample jars. The soil samples will be visually characterized for moisture content, color and grain size distribution based on the modified Burmister soil classification system. The SOPs for soil sampling are included in the QAPP.

The horizontal location of each soil sample submitted for laboratory analysis and other site features as determined during the SAP implementation will be measured in the field from existing site features and may be located using a Global Positioning System (GPS) unit.

3.1.1 Field QA/QC Samples

This section includes the procedures on the equipment blank/field blank, duplicate, and trip blank sample collection methods.

3.1.1.1 Equipment Blank Collection

Equipment blanks will be collected to determine whether the decontamination procedures are effectively cleaning the sampling equipment. Non-dedicated sampling equipment will be decontaminated between sampling locations. Following decontamination, organic free distilled water will be placed in contact with the sampling equipment, then transferred into the appropriate sample containers and submitted to the laboratory for analysis. For the purposes of this scope of work, one equipment blank will be collected, per day, per type of sampling equipment.

3.1.1.2 Duplicate Sample Collection

Field duplicate samples will be collected to provide an evaluation of the laboratory's performance by comparing analytical results of two samples from the same location. For the purposes of this scope of work, one duplicate sample will be collected for every 20 samples analyzed per each parameter analyzed. Duplicate samples will be submitted to the laboratory as "blind" samples.

3.1.1.3 Matrix Spike/Matrix Spike Duplicate Sample Collection

Matrix Spike/Matrix Spike Duplicates (MS/MSDs) for soil samples will be collected at a rate of one (1) for every 20 primary soil samples.

3.1.1.4 Trip Blank Sample Collection

Trip blanks will be supplied by the laboratory and placed within the cooler which is used to contain and ship samples for VOC analyses. One trip blank will be placed in each cooler containing samples collected for VOC analyses. The sealed trip blank will accompany the sample bottles through collection, shipment to the laboratory and storage.

3.2 DECONTAMINATION PROCEDURES

3.2.1 Sampling Equipment

Decontamination of sampling equipment is necessary to ensure the quality of samples by preventing cross-contamination. In addition, decontamination reduces health hazards and prevents the spread of contaminants off-site.

Equipment needed:

- Non-phosphate detergent (Alconox);
- Polyethylene sheeting;
- Wash bottles;
- Methanol;
- 10% Nitric Acid (HNO_3) solution;
- Distilled or deionized water;
- Tap water; and
- Paper towels.

Procedure:

The following steps will be followed when decontaminating sampling equipment. All expendable equipment (e.g., sample tubing, probe sleeves, etc.) will be replaced prior to collection of each sample. Reusable equipment (e.g., pumps, hand augers, probing equipment, etc.) that comes in direct contact with the sample will be decontaminated according to the procedures below. The following procedure will be used prior to collecting the first sample, between samples, and after the final sample:

- Flush and rinse the equipment/pump with potable water;

- Flush and rinse equipment with an Alconox solution. If this solution is recycled, change periodically (and document in logbook);
- Flush and rinse with tap water. If this solution is recycled, change periodically (and document in logbook);
- Flush and rinse with distilled or deionized water;
- Flush and rinse with methanol;
- Flush and rinse with distilled or deoinized water; and
- Dry/wrap with paper towels; OR
- Flush and rinse with 10% HNO_3 solution when sampling for metals; and
- Flush and rinse with distilled or deionized water, then dry.

3.3 HEALTH AND SAFETY

A site-specific health and safety plan (HASP) has been prepared (see Exhibit C of SWMU/AOC Assessment Report dated September 1, 2006) and will be followed during the implementation of SAP field activities. The HASP includes but is not limited to the following information: emergency contact information, site organization structure, site safety, site control, risk analyses, decontamination, medical care, emergency response, spill containment, and procedures for managing other specific hazards. The HASP will remain on-site during all field activities.

3.4 LABORATORY ANALYTICAL METHODS AND DATA VALIDATION

Soil samples will be submitted to TestAmerica of Amherst, NY, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for Contract Laboratory Protocol (CLP) and Analytical Services Protocol (ASP) administered by the NYSDEC or another ELAP/ASP certified laboratory. The laboratory will follow the 2005 NYSDEC ASP Target Compound Lists (TCLs) and associated low level Contract Required Quantitation Limits (CRQLs) outlined in Part I and II in Exhibit C of the ASP document.

The proposed soil analyses include one or more of the following:

- VOCs by USEPA Method 8260C (TCL including Tetrahydrofuran);
- SVOCs by USEPA Method 8270D (TCL including Dimethylformamide);
- RCRA 8 Metals by USEPA Method 6010B/7471A;
- Alcohols (ethanol, isobutyl alcohol, methanol, n-butanol, propanol, 2-butanol, isopropyl alcohol, t-butyl alcohol, and 2-hexanone) by USEPA Method 8015D; and
- PCBs by Method 8082.

The laboratory will also provide a Category B Data Package per the 2005 NYSDEC ASP including the narrative and end results plus all the associated laboratory QA/QC (calibration curves, chromatograms, sample prep forms, etc.) for all analytical services.

The laboratory analytical data will be reviewed by a third party independent data validation contractor (Data Check, Inc. of New Durham, New Hampshire) in general accordance with the NYSDEC Data Usability Summary Report (DUSR) guidelines and USEPA Contract Laboratory Program National Functional Data Validation Standard Operating Procedures for Data Evaluation and Validation. Data validation criteria that will be reviewed for

representative samples will include: sampling and analysis date, sample custody, holding times, sample handling and preservation procedures, field blank results, field and laboratory duplicate sample results, surrogate recoveries, matrix spike/matrix spike duplicate results, laboratory control standards, laboratory method blanks, lot assignment reports, and miscellaneous observations. Based on these results, data that do not meet performance criteria will be flagged with qualifiers describing the data's usability for decisions.

4. SCHEDULE AND REPORTING

The schedule for implementation of the SAP will be dependent on demolition schedule and the issuance of authorization to proceed by the NYSDEC. At this time, we anticipate implementation of the SAP in 2014. NYSDEC will be notified of the start of field activities.

During and following implementation of the SAP and receipt of all validated analytical data, quarterly progress reports will be submitted to NYSDEC outlining the investigative findings. The reports may also provide recommendations for further investigative activities as warranted, and/or a request for no further action where appropriate. Due to the site constraints and dynamic variables of the demolition process, additional subsurface investigation techniques (e.g., soil borings, test pits, and groundwater monitoring well installations as applicable) may be proposed and as applicable to be implemented following conclusion of the demolition activities at ChemD and evaluation of results. Subsequent, targeted investigations will be based in part on the findings made during/following demolition. Additional specifics regarding the proposed additional scopes of work (e.g., investigation types, number of samples, depths, locations, etc.) will be provided in either quarterly progress reports or in a supplemental SAP and/or ICM Work Plan (if necessary) to be submitted to NYSDEC for review and approval in accordance with the Part 373 Permit.

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TABLE 1
Summary of Proposed Investigation Activities
Chemical Development Pilot Plant SWMU Sampling Analysis Plan
Pfizer, Inc.
Rouses Point, New York

Area Description	Stage I Investigation Activity	Approximate Square Feet (sf) or Linear Feet (lf)	Approximate Number of Samples	Approximate Sample Depth (ft bgs)[1]	Media Sampled	Laboratory Analytical Parameters[2]	Rationale/Objective
SWMU-1 - Interim Drum Storage Area – historic storage of drums/containers of solvents including toluene, methanol, isopropyl alcohol, and other D001, D002, F002, F003, and F005 wastes.	Field observations/screening during/following demolition and collect shallow soil samples	26,800 sf	6 - 12	0-2	S	VOCs, SVOCs, RCRA 8 Metals, Alcohols, PCBs	Determine the presence/absence of a release to soil.
SWMU-4 - Former Container Storage Area – stored drums of solvents including toluene, methanol, isopropyl alcohol, and other D001, D002, F002, F003, and F005 wastes.	Field observations/screening during/following demolition and collect shallow soil samples	12,800 sf	6	0-2	S	VOCs, SVOCs, RCRA 8 Metals, Alcohols, PCBs	Determine the presence/absence of a release to soil.
SWMU-5 - Container Storage Area – storage of numerous drums of wastes including toluene, methanol, isopropyl alcohol, and other D001, D002, F002, F003, and F005 wastes.	Field observations/screening during/following demolition and collect shallow soil samples	11,800 sf	5	0-2	S	VOCs, SVOCs, RCRA 8 Metals, Alcohols, PCBs	Determine the presence/absence of a release to soil.
SWMU-6 - Tank Farm - bulk storage of waste solvents including toluene, methanol, and isopropyl alcohol.	Field observations/screening during/following demolition and collect shallow soil samples	4,650 sf	3	0-2	S	VOCs, SVOCs, RCRA 8 Metals, Alcohols, PCBs	Determine the presence/absence of a release to soil.

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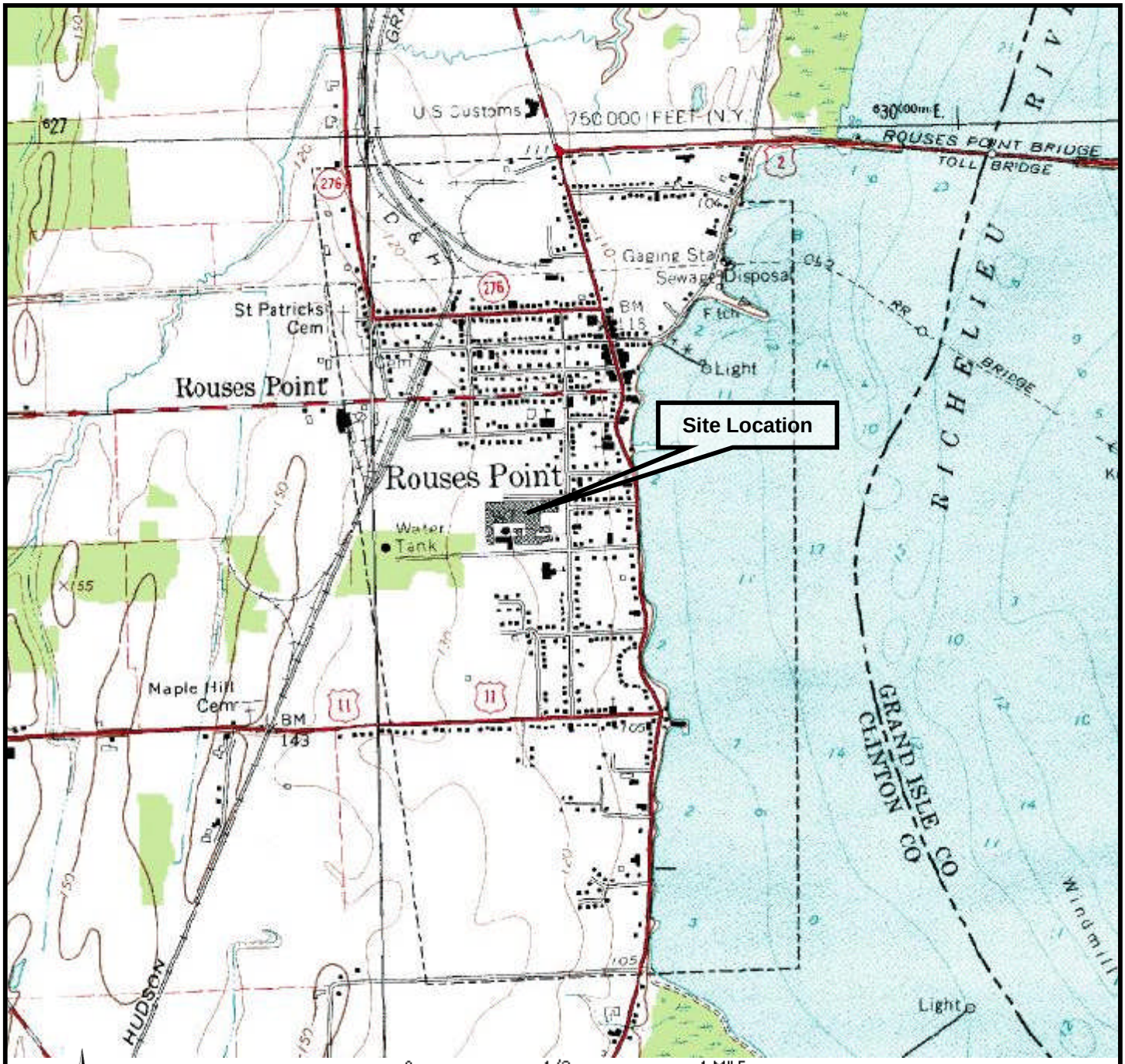
Chemical Development Pilot Plant SWMU Sampling Analysis Plan
Pfizer, Inc.
Rouses Point, New York

Area Description	Stage I Investigation Activity	Approximate Square Feet (sf) or Linear Feet (lf)	Approximate Number of Samples	Approximate Sample Depth (ft bgs)[1]	Media Sampled	Laboratory Analytical Parameters[2]	Rationale/Objective
SWMU-7 - Process Sewer – handled process wastewater containing hazardous constituents (includes exterior "yard" piping and catchment sumps)	Exterior sewer piping on north & west sides - field observations/screening during/following demolition with soil samples collected as necessary based on field screening	900 lf	TBD	TBD	S	VOCs	Exterior process sewers to the north and west were replaced between 2008-2009 with double-walled stainless steel containment piping with soil excavated under an ICM (See Figures 5 and 14) with no further action approved for soil.
	Exterior conveyance piping from Building 17C and Building 34 - field observations/screening during/following demolition and collect soil samples underneath at a rate of 1 per 50 linear feet	450 lf	9	TBD	S	VOCs	Exterior process sewers were not included in the 2008-2009 ICM process sewer replacement program. Determine presence/absence of release to soil.
	Exterior sewer piping on east side of Building 23 - field observations/screening during/following demolition and collect soil samples underneath at a rate of 1 per 50 linear feet (including at previously identified integrity issues)	500 lf	10	TBD	S	VOCs	Exterior process sewers to the east of Building 23 were not included in the 2008-2009 ICM process sewer replacement program. Determine presence/absence of release to soil.
	Interior sewer piping in Buildings 16, 23, 24, 26, 31, 34, and 40 - field observations/screening during/following demolition and collect soil samples underneath (1 per 50 linear feet)	2,000 lf	30 - 40	TBD	S	VOCs	Determine the presence/absence of a release to soil.

TABLE 1
Summary of Proposed Investigation Activities
Chemical Development Pilot Plant SWMU Sampling Analysis Plan
Pfizer, Inc.
Rouses Point, New York

Area Description	Stage I Investigation Activity	Approximate Square Feet (sf) or Linear Feet (lf)	Approximate Number of Samples	Approximate Sample Depth (ft bgs)[1]	Media Sampled	Laboratory Analytical Parameters[2]	Rationale/Objective
SWMU-12 - Building 16 Former Drywell – accepted waste from Building 16. Excavated in 1980s.	Field observations/screening during/following demolition and collect shallow soil samples	TBD	4	0-2	S	VOCs, SVOCs, RCRA 8 Metals, Alcohols, PCBs	Determine the presence/absence of a release to soil.
SWMU-13 - Building 16 Former Sanitary Sewer Holding Tanks – accepted sanitary and process wastewater from Building 16 prior to 1985. Removed in 2004.	Field observations/screening during/following demolition and collect shallow soil samples of fill material placed during construction of Building 43	Less than 1,000 sf	1	0-2	S	VOCs	Determine the presence/absence of a release to soil.
SWMU-14 - Waste Toluene Management East of Tank Farm – two releases of toluene documented in 1992	None						
SWMU-15 - Building 24 Wastewater Treatment Plant – handled process wastewater from Chemical Development Plant prior to discharge to steam stripper.	Field observations/screening during/following demolition and collect shallow soil samples	2,500 sf	3	0-2	S	VOCs	Determine the presence/absence of a release to soil.
SWMU-17 - Building 40 Wastewater Steam Stripper Building	Field observations/screening during/following demolition and collect shallow soil samples	4,000 sf	4	0-2	S	VOCs	Determine the presence/absence of a release to soil.
SWMU-23 - Building 16 Former Waste Storage Area in Northwest Corner	Field observations/screening during/following demolition and collect shallow soil samples	Less than 1,000 sf	1	0-2	S	VOCs	Determine the presence/absence of a release to soil.
SWMU-24 - Building 31 Solvent Condensate System	Field observations/screening during/following demolition and collect shallow soil samples	3,000 sf	3	0-2	S	VOCs	Determine the presence/absence of a release to soil.
SWMU-26 - Chemical Development Reactor Bay Drumming Areas	Field observations/screening during/following demolition and collect shallow soil samples	7,000 sf	8	0-2	S	VOCs, SVOCs, RCRA 8 Metals, Alcohols, PCBs	Determine the presence/absence of a release to soil.

Notes:
Stage I results will be used to develop Stage II subsurface investigation program where applicable to further characterize releases at SWMUs
1 Depth in feet (ft) below ground surface (bgs). Depth indicated is the bottom of the boring.
2 VOCs = Volatile Organic Compounds via EPA Methods 8260C (Target Compound List plus Tetrahydrofuran)
RCRA 8 Metals = Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver via EPA Methods 6010B/7471A
SVOCs = Semi-Volatile Organic Compounds via EPA Method 8270D (Target Compound List including Dimethylformamide)
Alcohols = ethanol, isobutyl alcohol, methanol, n-butanol, propanol, 2-butanol, isopropyl alcohol, t-butyl alcohol, and 2-hexanone via EPA Method 8015D
PCBs = Polychlorinated biphenyls via EPA Method 8082
TBD = To be determined; based on field observations
NA = Not applicable
S = Soil
Duplicate soil samples to be collected at a rate of 1 per 20 primary soil samples
VOC samples to be collected discretely using EnCores and will not be homogenized prior to collection
Equipment blanks to be collected at a rate of 1 per day for all analyses (excluding VOCs as new Encores will be used for each primary sample)
Trip blanks will accompany all VOC samples
MS/MSD samples will be collected at a rate of 1 per 20 primary soil samples
All laboratory analyses will be conducted via NYSDEC 2005 Analytical Services Protocol (ASP) with Category B data deliverables



QUADRANGLE LOCATION

Figure 1 SITE LOCATION MAP

Pfizer, Inc.

Rouses Point, NY

WOODARD &CURRAN

COMMITMENT & INTEGRITY DRIVE RESULTS

APPROXIMATE CHEMICAL DEVELOPMENT PLANT PROPERTY BOUNDARY AND SAP IMPLEMENTATION WORK AREA

Clinton Street

Clinton Street

White Avenue

Street

Pearl Street

Maple

Academy Street

ACADEMY STREET

EMPLOYEE PARKING

ACADEMY STREET EXTENSION

RECEIVING

BUILDING 25

BUILDING 21

BUILDING 37

BLDG 21A

CONSTRUCTION TRAILERS

BLDG 17C

BLDG 34

BLDG 17A

BLDG 40

BLDG 26

BLDG 24

BLDG 31A

BLDG 31

BLDG 23A

TANK FARM

BLDG 23

BLDG 16

BLDG 43

WATER TANK

WATER TANK

BUTLER BLDG. 1987

BUTLER BLDG. 1992

BUTLER BUILDING 1976

existing building

concrete slab

BUILDING 35

BLDG 41

BUILDING 19

BUILDING 13

BUILDING 9

BUILDING 11

BUILDING 15

SHIPPING

BUILDING 10

BUILDING 8

BUILDING 3A2

BUILDING 4A

BUILDING 32

BLDG 27

BUILDING 18

BUILDING 14

BLDG 38

BUILDING 6

BUILDING 7

BUILDING 3A1

BUILDING 20

BUILDING 12

BUILDING 5

BUILDING 2

BUILDING 1A

BLDG 20B

BUILDING 22

BLDG 28

BLDG 33

LEGEND:

APPROXIMATE SITE BOUNDARIES

0 100 200

SCALE IN FEET

Woodard & Curran Engineering PA PC
709 Westchester Avenue, Suite L2
White Plains, New York 10604
800.807.4080 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:

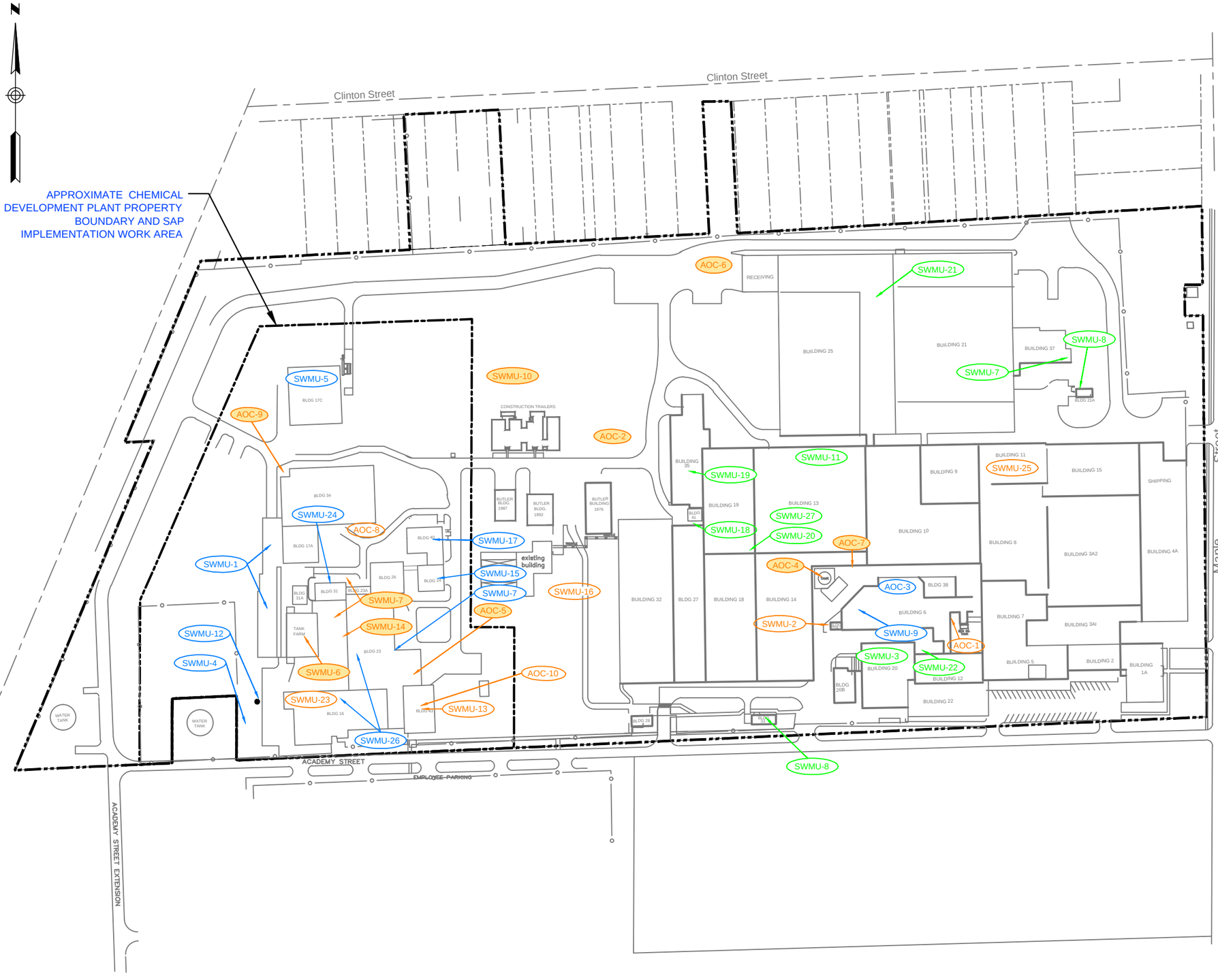
SITE PLAN

PFIZER INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT
PILOT PLANT SWMU
SAMPLING AND ANALYSIS
PLAN

JOB NO.: 209610
DATE: JUNE 2014
SCALE: AS NOTED
SHEET: OF

FIGURE 2



LEGEND

- APPROXIMATE SITE BOUNDARIES
- AOC-7 NO FURTHER ACTION STATUS APPROVED
- SWMU-2 NO FURTHER ACTION STATUS IN PROGRESS
- SWMU-1 INACTIVE SWMU
- SWMU-3 ACTIVE SWMU

SOLID WASTE MANAGEMENT UNITS (SWMUs)

SWMU-1	INTERIM DRUM STORAGE AREA
SWMU-2	BUILDING 20A ACCUMULATION AREA
SWMU-3	BUILDING 20 ACCUMULATION AREA
SWMU-4	FORMER CONTAINER STORAGE AREA
SWMU-5	CONTAINER STORAGE AREA
SWMU-6	TANK FARM
SWMU-7	PROCESS SEWER
SWMU-8	WASTE NEUTRALIZATION USTs
SWMU-9	LABORATORY WASTE MANAGEMENT AREA
SWMU-10	NORTH FIELD
SWMU-11	SUMPS AND CATCHMENTS IN SOLVENT USE AREAS (MULTIPLE LOCATIONS)
SWMU-12	BUILDING 16 FORMER DRYWELL
SWMU-13	BUILDING 16 FORMER SANITARY SEWER HOLDING TANKS
SWMU-14	WASTE TOLUENE MANAGEMENT EAST OF TANK FARM
SWMU-15	BUILDING 24 WASTEWATER TREATMENT PLANT
SWMU-16	FORMER FIRE FIGHTING TRAINING AREAS 3 AND 4
SWMU-17	BUILDING 40 WASTEWATER STEAM STRIPPER BUILDING
SWMU-18	BUILDING 41 PROCESS WASTEWATER AST
SWMU-19	PROCESS EQUIPMENT SOLVENT RECOVERY UNITS (MULTIPLE LOCATIONS)
SWMU-20	PROCESS DUST COLLECTION DRUM-OUTS (MULTIPLE LOCATIONS)
SWMU-21	BUILDING 25 ACTIVE PHARMACEUTICAL INGREDIENT WASTE STORAGE AREA
SWMU-22	BUILDING 20 COURT YARD WASTE OIL STORAGE SHED
SWMU-23	BUILDING 16 FORMER WASTE STORAGE AREA IN NORTHWEST CORNER
SWMU-24	BUILDING 31 SOLVENT CONDENSATE SYSTEM
SWMU-25	BUILDING 11 INACTIVE SPRAY PAINT BOOTH
SWMU-26	CHEMICAL DEVELOPMENT REACTOR BAY DRUMMING AREAS (MULTIPLE LOCATIONS)
SWMU-27	BUILDING 13 ACCUMULATION AREA

AREAS OF CONCERN (AOCs)

AOC-1	FORMER PCB-CONTAINING TRANSFORMER, STAINING ON CONCRETE PAD
AOC-2	STAINED SOIL NEAR CONTRACTOR AST
AOC-3	PETROLEUM STAINED SOIL – BUILDING 6 FORMER 30,000 GALLON UST
AOC-4	PETROLEUM AST WITHOUT BASE CONTAINMENT – BUILDING 6
AOC-5	ETHYLENE DICHLORIDE RELEASE NEAR BUILDING 23 LOADING DOCK
AOC-6	PETROLEUM AND DICHLOROMETHANE RELEASE FROM BUILDING 25 LOADING DOCK
AOC-7	NO. 6 FUEL OIL RELEASES TO CONCRETE TRENCH NORTH OF BUILDING 6
AOC-8	RELEASE OF ACETONITRILE TO THE CONCRETE AT CHEMICAL DEVELOPMENT
AOC-9	BUILDING 34 LOADING DOCK MIXED ALCOHOL WASTE RELEASE
AOC-10	BUILDING 23 THERMINOL RELEASE TO SOIL

NOTES:

1. SWMU 7 (MAIN PLANT), 11, 19, 20 AND 26 NOT SHOWN DUE TO MULTIPLE LOCATIONS.
2. SWMU 6 HAS RECEIVED NO FURTHER ACTION FOR TRUCK CONTAINMENT PAD.

100' 0 100' 200'

BAR SCALE
1" = 100'
CHECK GRAPHIC SCALE BEFORE USING

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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE	DESIGNED BY:	DRAWN BY:	CHECKED BY:

SWMU AND AOC LOCATIONS AND STATUS

PFIZER INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

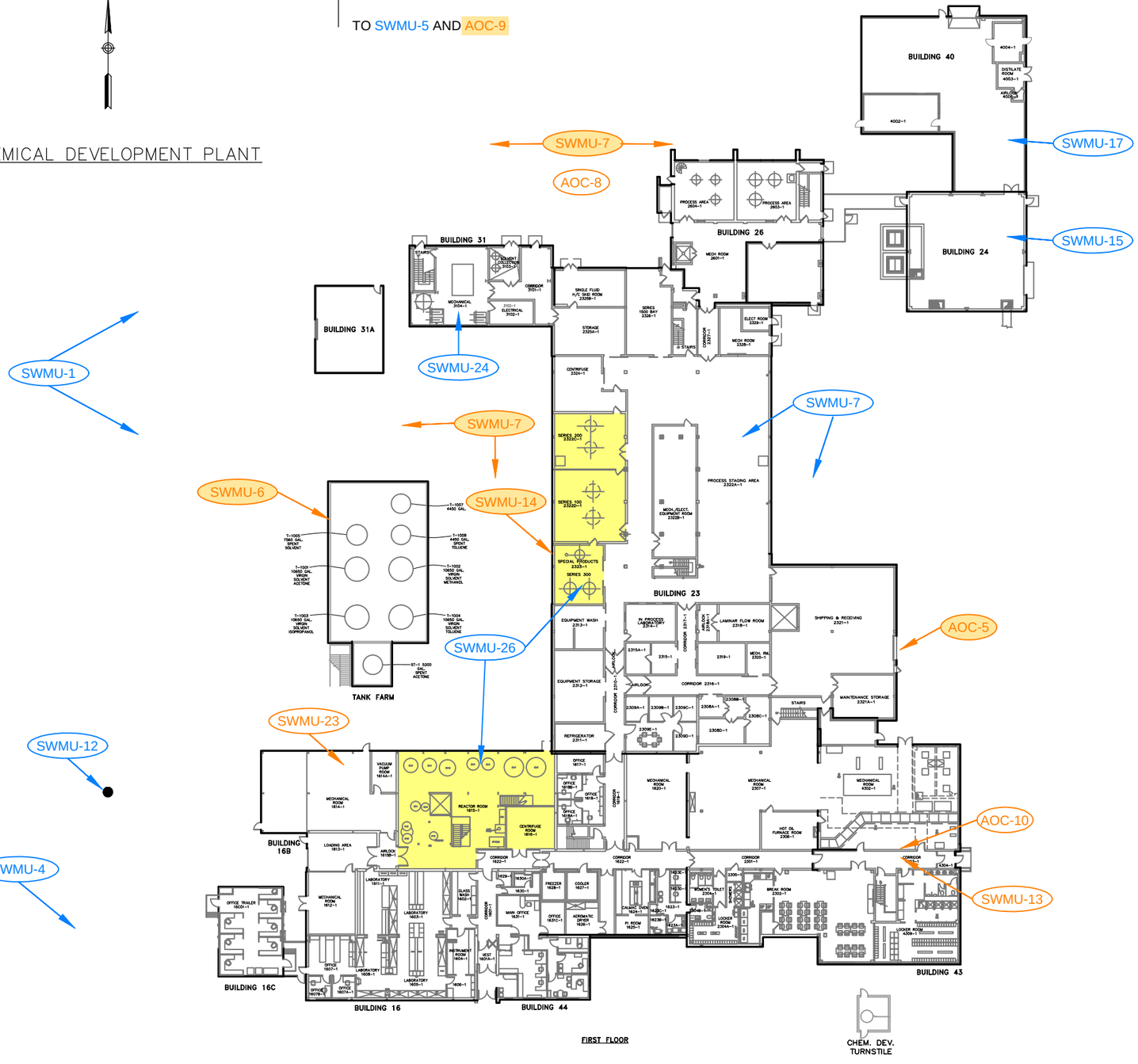
JOB NO.: 209610
DATE: JUNE 2014
SCALE: AS NOTED
SHEET: OF

FIGURE 3

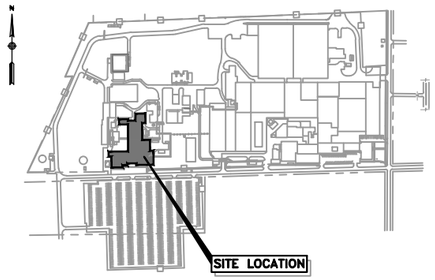
N

TO SWMU-5 AND AOC-9

CHEMICAL DEVELOPMENT PLANT



FIRST FLOOR



LEGEND

SWMU-26: CHEMICAL DEVELOPMENT REACTOR BAY DRUMMING AREAS

AOC-5 NO FURTHER ACTION STATUS APPROVED

SWMU-2 NO FURTHER ACTION STATUS RECOMMENDED

SWMU-1 INACTIVE SWMU

SOLID WASTE MANAGEMENT UNITS (SWMUs)

SWMU-1	INTERIM DRUM STORAGE AREA
SWMU-4	FORMER CONTAINER STORAGE AREA
SWMU-5	CONTAINER STORAGE AREA
SWMU-6	TANK FARM
SWMU-7	PROCESS SEWER
SWMU-12	BUILDING 16 FORMER DRYWELL
SWMU-13	BUILDING 16 FORMER SANITARY SEWER HOLDING TANKS
SWMU-14	WASTE TOLUENE MANAGEMENT EAST OF TANK FARM
SWMU-15	BUILDING 24 WASTEWATER TREATMENT PLANT
SWMU-17	BUILDING 40 WASTEWATER STEAM STRIPPER BUILDING
SWMU-23	BUILDING 16 FORMER WASTE STORAGE AREA IN NORTHWEST CORNER
SWMU-24	BUILDING 31 SOLVENT CONDENSATE SYSTEM
SWMU-26	CHEMICAL DEVELOPMENT REACTOR BAY DRUMMING AREAS (MULTIPLE LOCATIONS)

AREAS OF CONCERN (AOCs)

AOC-5	ETHYLENE DICHLORIDE RELEASE NEAR BUILDING 23 LOADING DOCK
AOC-8	RELEASE OF ACETONITRILE TO THE CONCRETE AT CHEMICAL DEVELOPMENT
AOC-9	BUILDING 34 LOADING DOCK MIXED ALCOHOL WASTE RELEASE
AOC-10	BUILDING 23 THERMINOL RELEASE TO SOIL

0 50 100

SCALE IN FEET

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

LOCATIONS OF SWMUS/AOCS AT CHEMICAL DEVELOPMENT PLANT

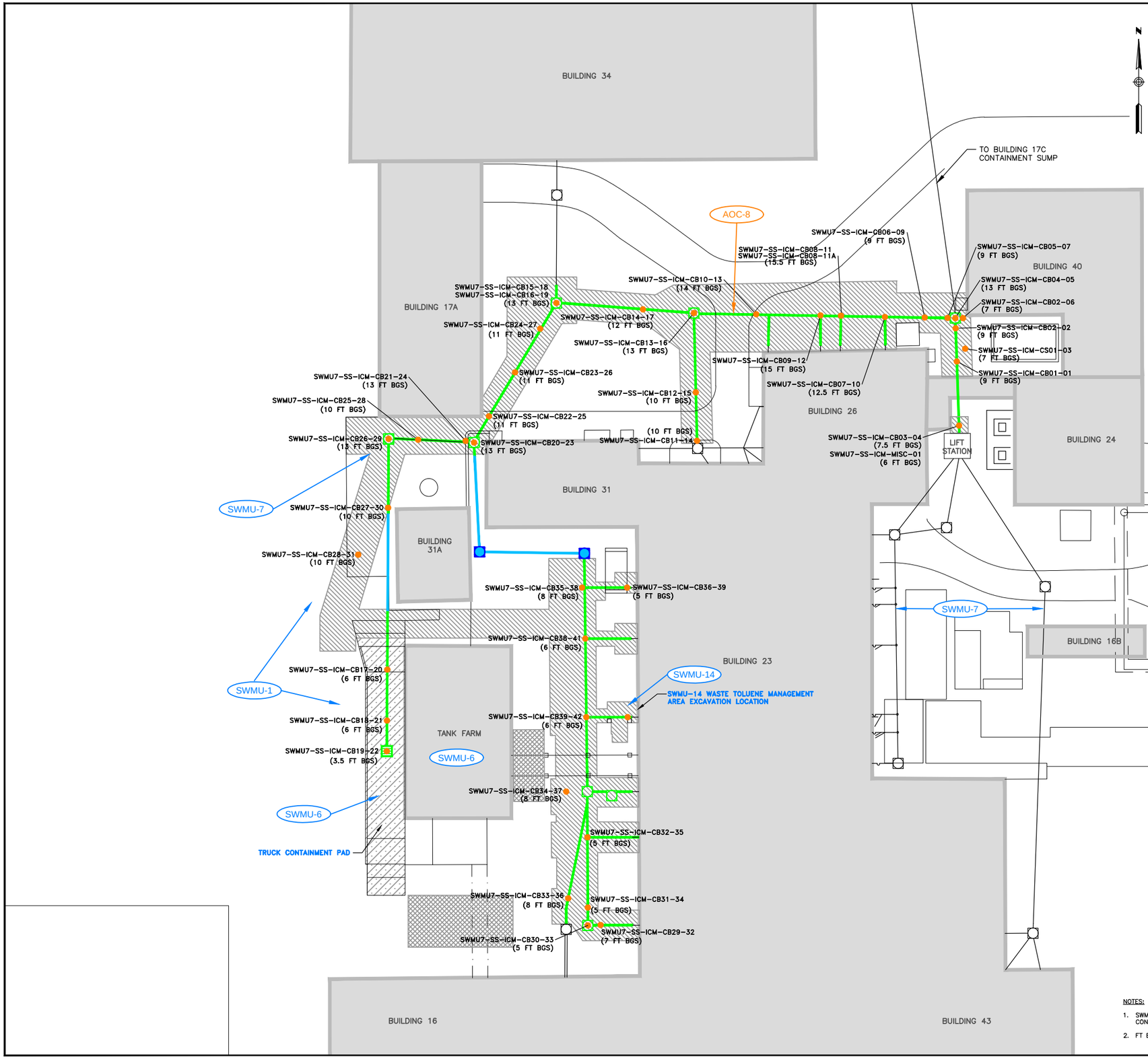
DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 4_Locations SWMUS_AOCS.dwg

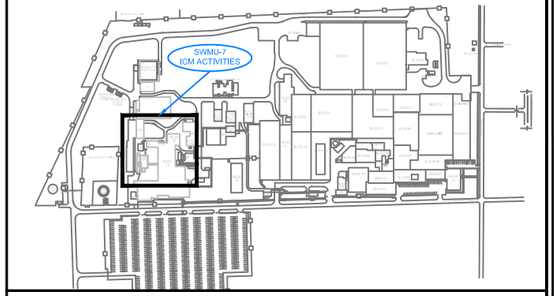
PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 4





KEY MAP

LEGEND:

- APPROXIMATE SITE BOUNDARIES
- SWMU-8 — NO FURTHER ACTION STATUS RECOMMENDED
- SWMU-1 — INACTIVE SWMU

SOLID WASTE MANAGEMENT UNITS (SWMUs)

SWMU-1	INTERIM DRUM STORAGE AREA
SWMU-6	TANK FARM
SWMU-7	PROCESS SEWER
SWMU-14	WASTE TOLUENE MANAGEMENT EAST OF TANK FARM

AREAS OF CONCERN (AOCs)

AOC-8	RELEASE OF ACETONITRILE TO THE CONCRETE AT CHEMICAL DEVELOPMENT

- EXISTING PROCESS SEWER PIPING (SWMU-7)
- FORMER PROCESS SEWER PIPING – REMOVED (SWMU-7)
- FORMER PROCESS SEWER PIPING – ABANDONED IN-PLACE (SWMU-7)
- EXISTING PROCESS SEWER MANHOLE (SWMU-7)
- FORMER PROCESS SEWER MANHOLE – REMOVED (SWMU-7)
- FORMER PROCESS SEWER MANHOLE – ABANDONED IN-PLACE (SWMU-7)
- TANK FARM DRAIN IN TRUCK CONTAINMENT PAD – REMOVED/REPLACED (SWMU-7)
- APPROXIMATE EXCAVATION AREA FOR PROCESS SEWER SYSTEM REMOVAL AND REPLACEMENT (SWMU-7)
- TANK FARM TRUCK CONTAINMENT PAD – REMOVED/REPLACED (SWMU-6)
- APPROXIMATE EXCAVATION AREA FOR MACHINERY ACCESS
- SWMU7-SS-ICM-CB17-20 (6 FT BGS) — SOIL SAMPLE IDENTIFIER (DEPTH)

NOTES:

1. SWMU-6 HAS RECEIVED NO FURTHER ACTION FOR TRUCK CONTAINMENT PAD.
2. FT BGS = FEET BELOW GROUND SURFACE

0 20 40
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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE
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DRAWN BY:		

INTERIM CORRECTIVE MEASURE LOCATIONS

PFIZER INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT
PILOT PLANT SWMU
SAMPLING AND ANALYSIS
PLAN

JOB NO.: 209610
DATE: JUNE 2014
SCALE: AS NOTED
SHEET: OF

FIGURE 5

N

APPROXIMATE CHEMICAL DEVELOPMENT PLANT PROPERTY BOUNDARY

Clinton Street

White Avenue

Pearl Street

Maple Street

Lake Street

Academy Street

ACADEMY STREET

ACADEMY STREET EXTENSION

EMPLOYEE PARKING

MW-1 MW-1S
MW-2 (DECOMMISSIONED)
MW-3 MW-3S (DECOMMISSIONED)
MW-4 (DECOMMISSIONED)
MW-5 MW-5S
MW-6
MW-7
MW-8S MW-8
MW-9 MW-9S
MW-10
MW-11
MW-12
MW-13
MW-14
MW-15
MW-16 MW-16S
MW-17 MW-17S
MW-18 MW-18S
MW-19 MW-19S
MW-20 MW-20S
MW-21 MW-21S (DECOMMISSIONED)
MW-22 MW-22S
MW-23 MW-23S
MW-24 MW-24S
MW-25 MW-25S
MW-26 MW-26S
MW-27 MW-27S
MW-28 MW-28S
MW-29 MW-29S
MW-30 MW-30S
MW-31 MW-31S
MW-32 MW-32S
MW-33 MW-33S
MW-34 MW-34S
MW-35 MW-35S
MW-36 MW-36S
MW-37 MW-37S (DECOMMISSIONED)
MW-38 MW-38S
MW-39 MW-39S

BUILDING 1A, 2, 3A1, 3A2, 4A, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 25, 27, 32, 35, 37, 38
BLDG 16, 17A, 17C, 20B, 21A, 23, 23A, 24, 26, 28, 31, 31A, 33, 34, 40, 41, 43
RECEIVING
SHIPPING
CONSTRUCTION TRAILERS
BUTLER BLDG 1987
BUTLER BLDG 1992
BUTLER BUILDING 1976
existing building
concrete slab
TANK FARM
WATER TANK

LEGEND

- APPROXIMATE SITE BOUNDARIES
- MONITORING WELL (LOWER TILL)
- MONITORING WELL (UPPER TILL)

0 100 200
SCALE IN FEET

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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

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DRAWN BY:
CHECKED BY:

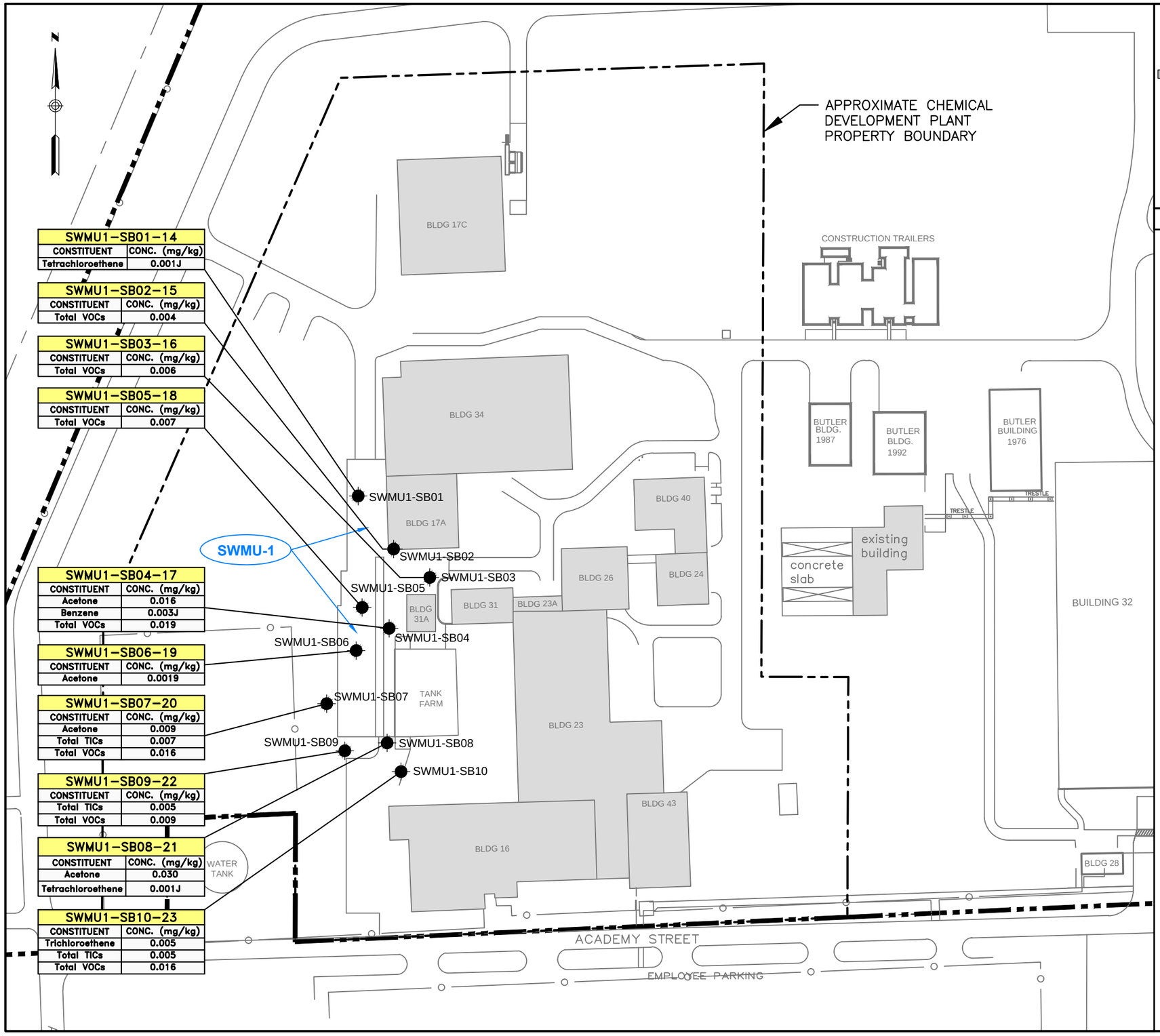
GROUNDWATER MONITORING WELL LOCATIONS

PFIZER INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT
PILOT PLANT SWMU
SAMPLING AND ANALYSIS
PLAN

JOB NO.: 209610
DATE: JUNE 2014
SCALE: AS NOTED
SHEET: OF

FIGURE 6



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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

SWMU–1: INTERIM DRUM STORAGE AREA 2006 SOIL SAMPLE LOCATIONS & ANALYTICAL RESULTS

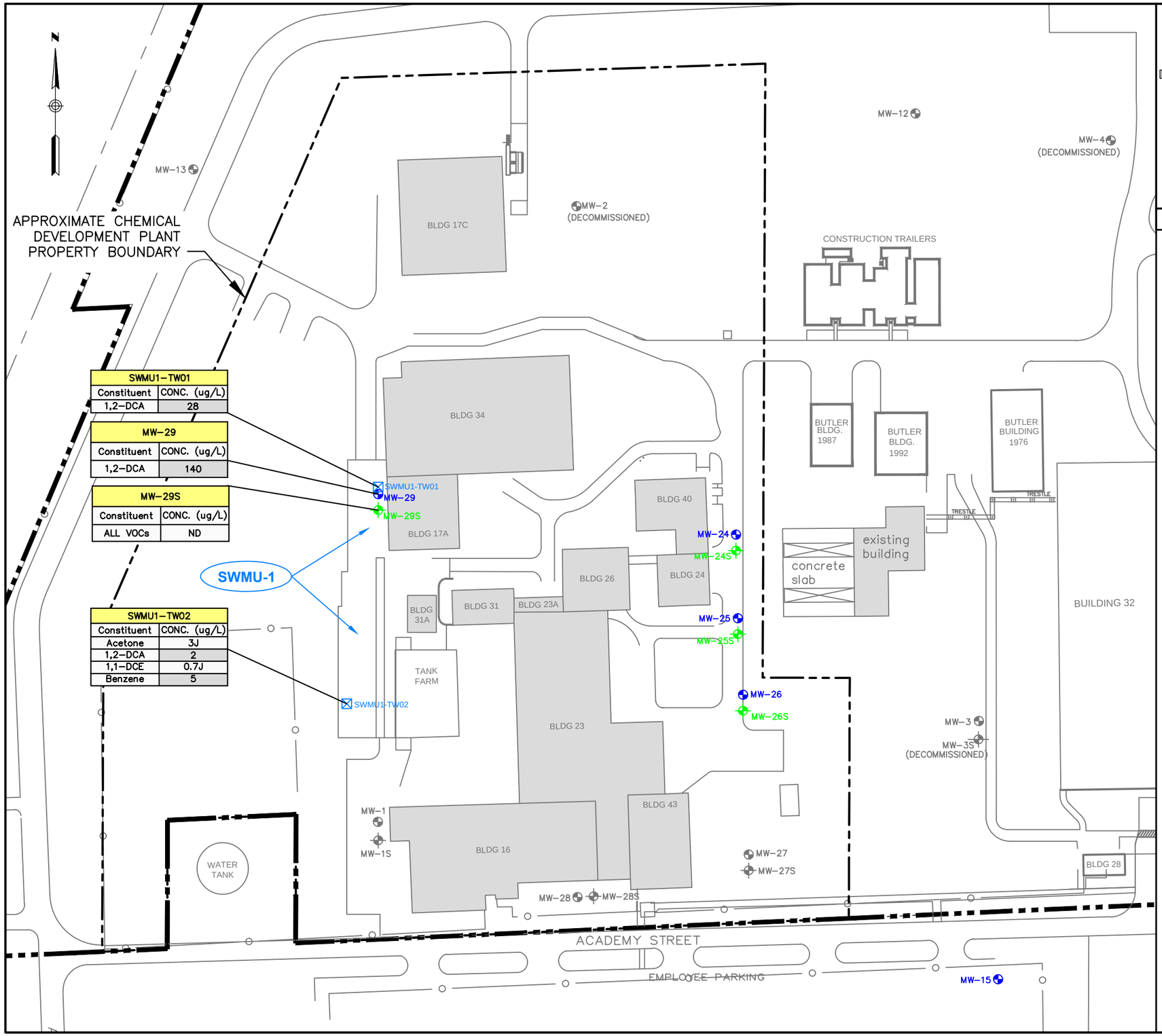
DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 7 SWMU–1 2006 results.dwg

PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 7

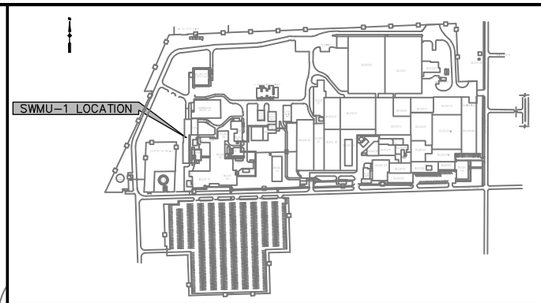


SWMU1–TW01	
Constituent	CONC. (ug/L)
1,2–DCA	28

MW–29	
Constituent	CONC. (ug/L)
1,2–DCA	140

MW–29S	
Constituent	CONC. (ug/L)
ALL VOCs	ND

SWMU1–TW02	
Constituent	CONC. (ug/L)
Acetone	3J
1,2–DCA	2
1,1–DCE	0.7J
Benzene	5



KEY MAP

LEGEND

- APPROXIMATE SITE BOUNDARIES
- MONITORING WELL (LOWER TILL)
- MONITORING WELL (UPPER TILL)
- TEMPORARY GROUNDWATER SAMPLE POINT
- CONCENTRATION EXCEEDS NYSDEC GA GROUNDWATER STANDARD/GUIDANCE VALUE

NOTES:

1. GROUNDWATER SAMPLES FROM TEMPORARY SAMPLE POINTS COLLECTED IN 2006.
2. GROUNDWATER SAMPLES FROM MONITORING WELLS COLLECTED IN DECEMBER 2012.
3. ONLY CONSTITUENT DETECTIONS ARE SHOWN. NO CONSTITUENTS DETECTED IN MONITORING WELLS MW–24/24S THROUGH MW–26/26S ABOVE NYSDEC GROUNDWATER QUALITY STANDARDS IN 2012, EXCEPT FOR DICHLORODIFLUOROMETHANE AT 19 ug/L IN MW–24.

0 100 200

SCALE IN FEET

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COMMITMENT & INTEGRITY DRIVE RESULTS

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SWMU–1 GROUNDWATER SAMPLE LOCATIONS & ANALYTICAL RESLUTS

DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 8 SWMU–1 GW results.dwg

PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 8

N

APPROXIMATE CHEMICAL DEVELOPMENT PLANT PROPERTY BOUNDARY

BLDG 17C

CONSTRUCTION TRAILERS

BLDG 34

BLDG 17A

BLDG 40

BLDG 26

BLDG 24

BLDG 31

BLDG 23A

BLDG 31A

TANK FARM

BLDG 23

BLDG 16

BLDG 43

BUTLER BLDG. 1987

BUTLER BLDG. 1992

BUTLER BUILDING 1976

TRESTLE

TRESTLE

TRESTLE

existing building

concrete slab

BUILDING 32

BLDG 28

ACADEMY STREET

EMPLOYEE PARKING

WATER TANK

SWMU-12

SWMU-4

SWMU12-SB01

SWMU12-SB02

SWMU4-SB01

SWMU4-SB02

SWMU12-SB01-27

CONSTITUENT	CONC. (mg/kg)
1,1-Dichloroethene	0.007
1,2-Dichloroethane	0.003J
Acetone	0.010
Benzene	0.005
cis-1,2-Dichloroethene	0.002J
Vinyl chloride	0.024
Total TICs	0.091
Total VOCs	0.148

SWMU12-SB01-26

CONSTITUENT	CONC. (mg/kg)
Acetone	0.016

SWMU12-SS-SB02-01

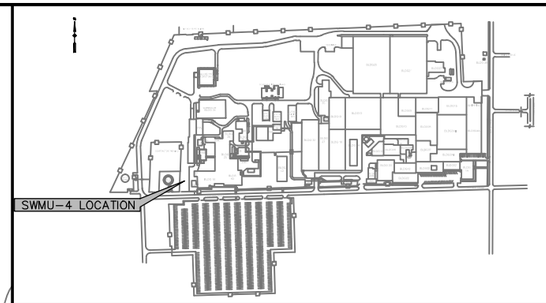
CONSTITUENT	CONC. (mg/kg)
Methylene chloride	0.032B
Total TICs	0.0068

SWMU12-SS-SB02-02

CONSTITUENT	CONC. (mg/kg)
2-Butanone	0.0033J
Acetone	0.026B
Total TICs	0.0038

SWMU4-SB01-24

CONSTITUENT	CONC. (mg/kg)
Total VOCs	0.006



KEY MAP

LEGEND

APPROXIMATE SITE BOUNDARIES

GEOPROBE SOIL BORING (2006)

SOIL BORING (2010)

0 100 200

SCALE IN FEET

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

SWMU-4 & SWMU-12 SOIL SAMPLE LOCATIONS AND VOC RESULTS

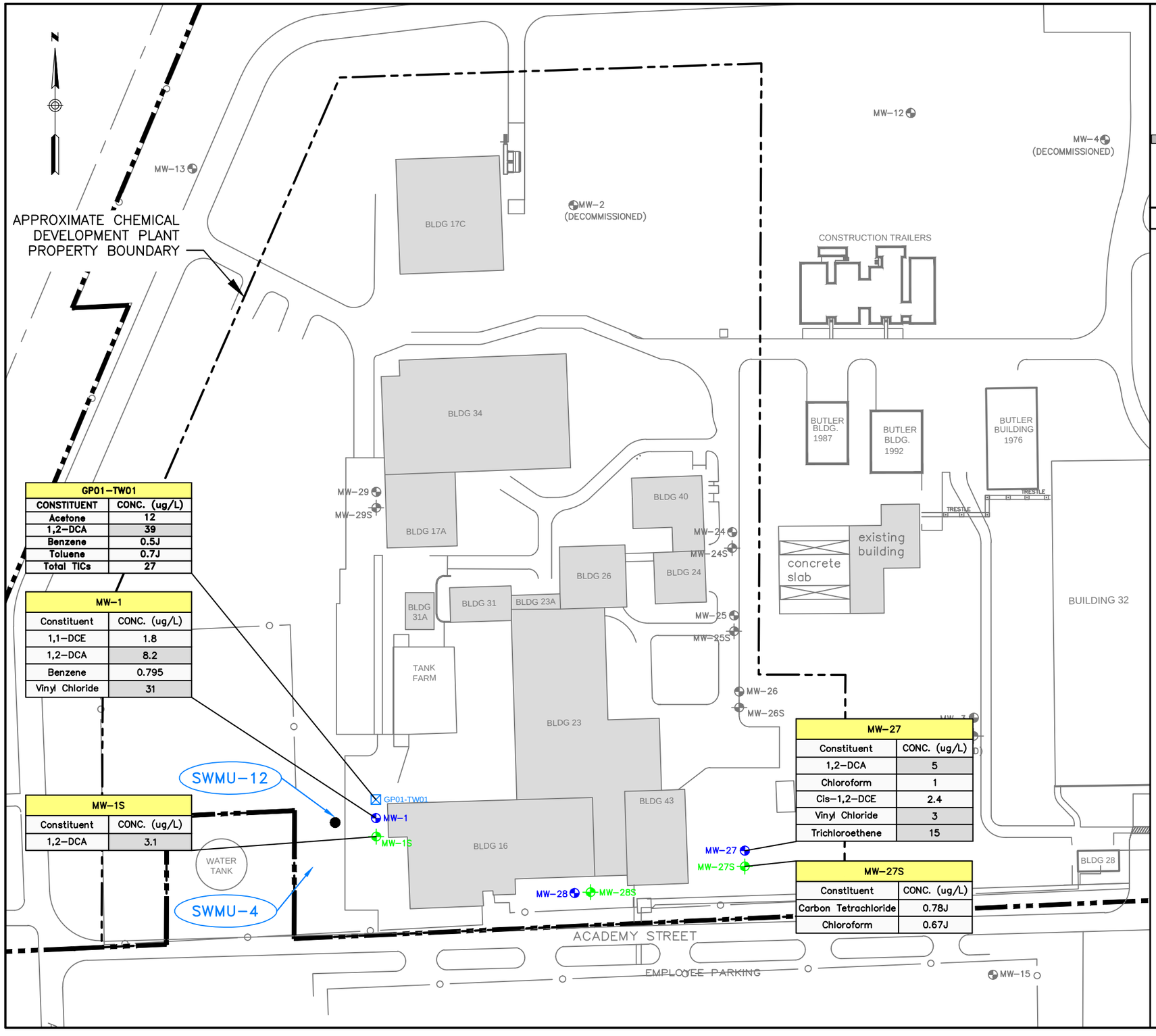
DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 9 SWMU-4 Soil.dwg

PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 9



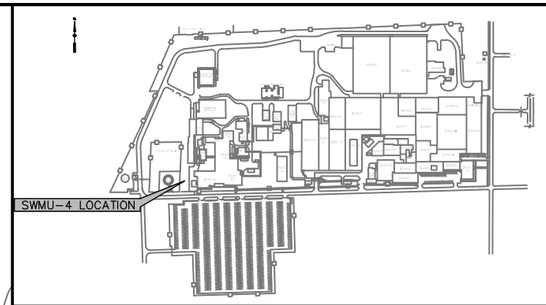
GP01-TW01	
CONSTITUENT	CONC. (ug/L)
Acetone	12
1,2-DCA	39
Benzene	0.5J
Toluene	0.7J
Total TICs	27

MW-1	
Constituent	CONC. (ug/L)
1,1-DCE	1.8
1,2-DCA	8.2
Benzene	0.795
Vinyl Chloride	31

MW-1S	
Constituent	CONC. (ug/L)
1,2-DCA	3.1

MW-27	
Constituent	CONC. (ug/L)
1,2-DCA	5
Chloroform	1
Cis-1,2-DCE	2.4
Vinyl Chloride	3
Trichloroethene	15

MW-27S	
Constituent	CONC. (ug/L)
Carbon Tetrachloride	0.78J
Chloroform	0.67J



KEY MAP

LEGEND

- APPROXIMATE SITE BOUNDARIES
- MONITORING WELL (LOWER TILL)
- MONITORING WELL (UPPER TILL)
- TEMPORARY GROUNDWATER SAMPLE POINT
- CONCENTRATION EXCEEDS NYSDEC GA GROUNDWATER STANDARD/GUIDANCE VALUE

NOTES:

1. GROUNDWATER SAMPLES FROM TEMPORARY SAMPLE POINTS COLLECTED IN 2006.
2. GROUNDWATER SAMPLES FROM MONITORING WELLS COLLECTED IN 2012 OR 2013.
3. ONLY CONSTITUENT DETECTIONS ARE SHOWN. NO CONSTITUENTS DETECTED IN MONITORING WELLS MW-24/24S THROUGH MW-26/26S AND MW-28/28S ABOVE NYSDEC GROUNDWATER QUALITY STANDARDS IN 2012, EXCEPT FOR DICHLORODIFLUOROMETHANE AT 19 ug/L IN MW-24.

0 100 200

SCALE IN FEET

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

SWMU-4 AND SWMU-12 GROUNDWATER SAMPLE LOCATIONS AND VOC RESULTS

DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 10 SWMU-4 GW.dwg

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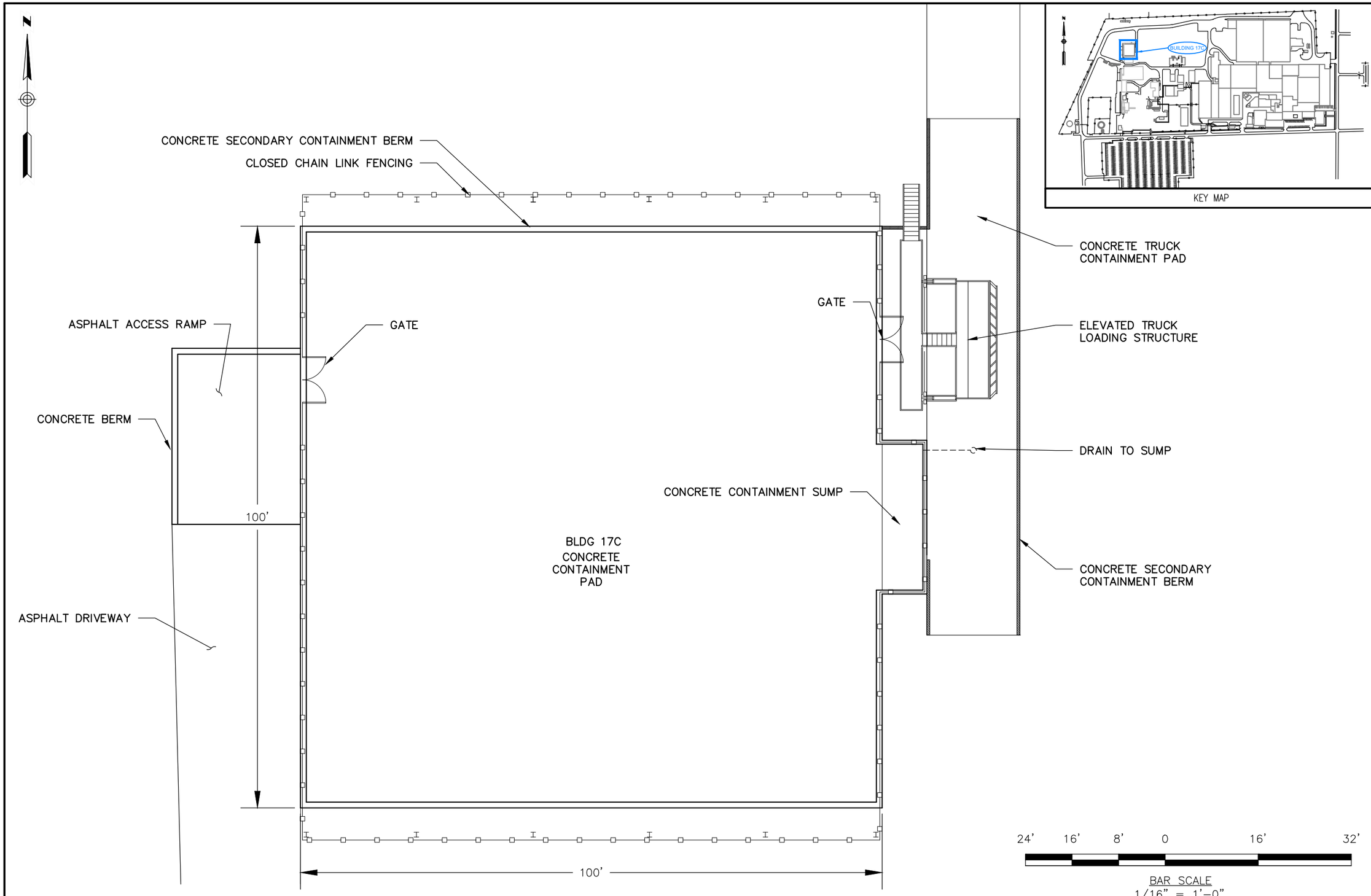
CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 10



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COMMITMENT & INTEGRITY DRIVE RESULTS

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SWMU-5: CONTAINER STORAGE AREA

DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 11 SWMU-5 Layout.dwg

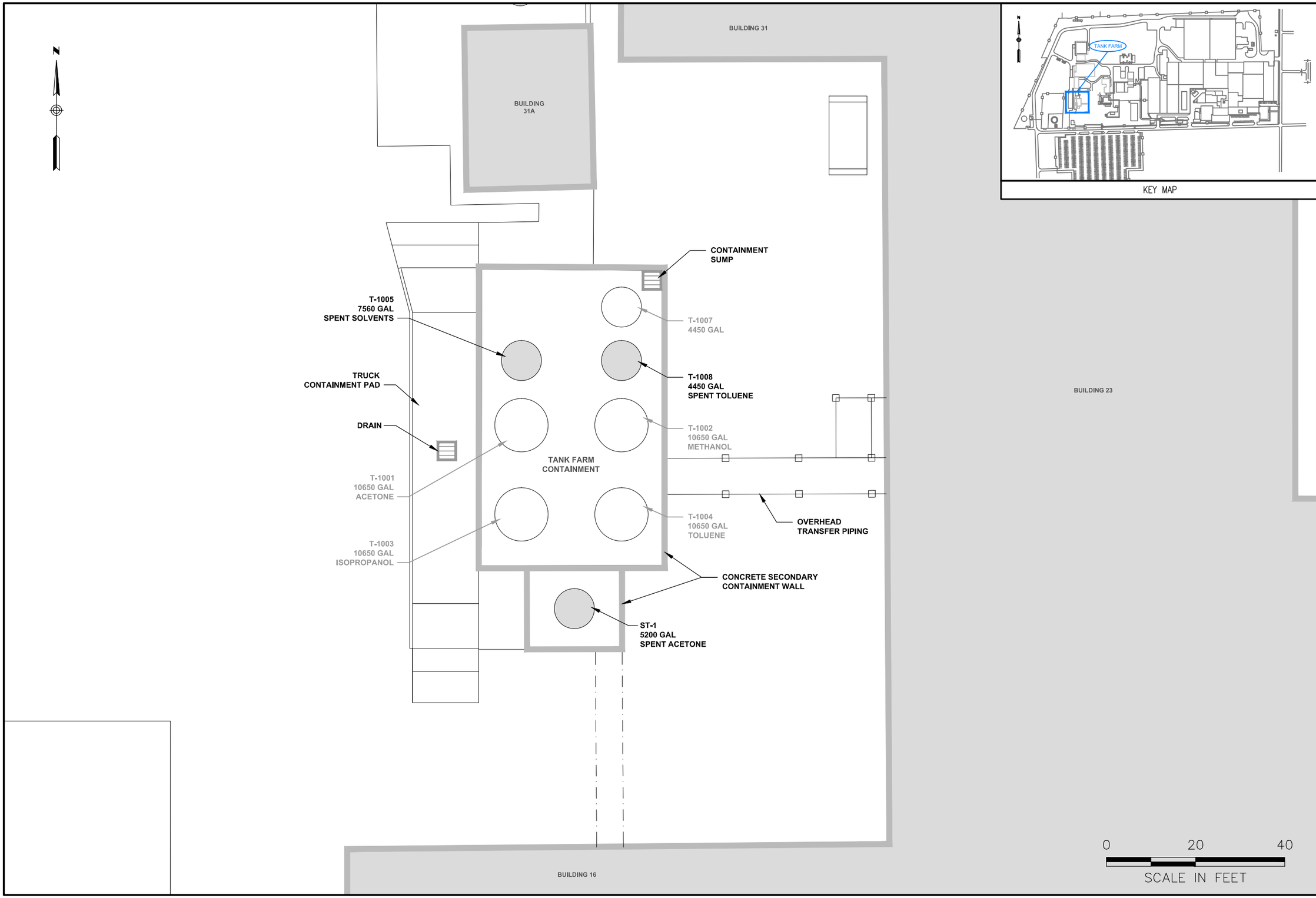
PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 11

wip /rcra /bld17c /dwg /wyeth



KEY MAP

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD &CURRAN

SWMU-6: TANK FARM

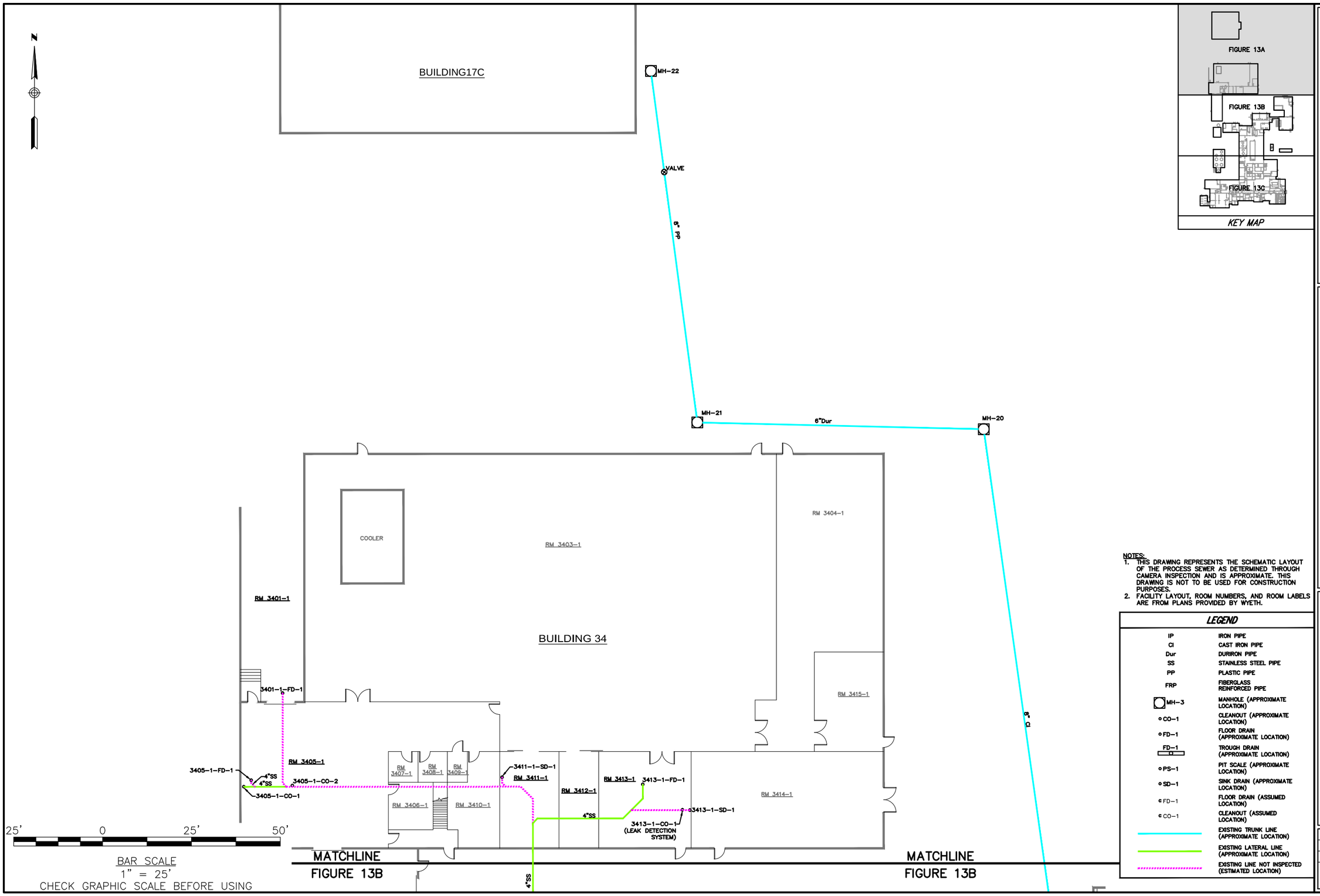
DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 12-SWMU-6 Layout.dwg

PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 12



NOTES:
1. THIS DRAWING REPRESENTS THE SCHEMATIC LAYOUT OF THE PROCESS SEWER AS DETERMINED THROUGH CAMERA INSPECTION AND IS APPROXIMATE. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
2. FACILITY LAYOUT, ROOM NUMBERS, AND ROOM LABELS ARE FROM PLANS PROVIDED BY WYETH.

LEGEND

IP	IRON PIPE
CI	CAST IRON PIPE
Dur	DURIRON PIPE
SS	STAINLESS STEEL PIPE
PP	PLASTIC PIPE
FRP	FIBERGLASS REINFORCED PIPE
MH-3	MANHOLE (APPROXIMATE LOCATION)
CO-1	CLEANOUT (APPROXIMATE LOCATION)
FD-1	FLOOR DRAIN (APPROXIMATE LOCATION)
FD-1	TROUGH DRAIN (APPROXIMATE LOCATION)
PS-1	PIT SCALE (APPROXIMATE LOCATION)
SD-1	SINK DRAIN (APPROXIMATE LOCATION)
FD-1	FLOOR DRAIN (ASSUMED LOCATION)
CO-1	CLEANOUT (ASSUMED LOCATION)
	EXISTING TRUNK LINE (APPROXIMATE LOCATION)
	EXISTING LATERAL LINE (APPROXIMATE LOCATION)
	EXISTING LINE NOT INSPECTED (ESTIMATED LOCATION)

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COMMITMENT & INTEGRITY DRIVE RESULTS

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SWMU-7
PROCESS SEWER PIPING SCHEMATIC
CHEMICAL DEVELOPMENT PLANT

DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 13abc-SWMU-7-Process.dwg

PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 13A

MATCHLINE
FIGURE 13A

MATCHLINE
FIGURE 13A

(LEAK DETECTION SYSTEM)

4"SS

MH-34

8"Dur

TO PAP-7 (SEE FIGURE 14)

BUILDING 17A

8" PIPE

TO PAP-1 (SEE FIGURE 14)

4000-1-FD-1

4001-1-FD-1

RM 4000

RM 4001

4000-1-CO-1

4000-1-FD-3

4000-1-FD-2

6"SS

4000-1-CO-2

4000-1-FD-4

ELEC. CONTROL ROOM

BUILDING 40-41

2604-1-FD-1-O

2604-1-FD-2-O

2603-1-FD-2-O

2603-1-FD-1-O

2604-1-FD-2

2603-1-FD-2

2603-1-FD-1

2604-1-FD-1

RM 2605-1

PROCESS AREA RM 2604

PROCESS AREA RM 2603

SERIES 1200

SERIES 1100

STAIRS

VENT

BUILDING 24

2601-1-FD-2

2601-1-FD-1

BUILDING 26

RM 2601-1

ELEV

4"SS

2601-1-FD-3

2601-1-FD-1-O

4"CI

2400-1-FD-2

8"Dur

2400-1-FD-1

KILO LAB RM 2602

2602-1-FD-1-O

2602-1-FD-1

CO-1

2602-1-PS-1-O

2602-1-PS-1

SERIES 1300

SERIES 1400

3103-1-FD-1

3103-1-CO-1 (LEAK DETECTION SYSTEM)

3101-1-FD-1

3104-1-FD-1

3104-1-FD-2

RM 3103-1

3103-1-FD-2

STAIRS

BUILDING 31

RM 3101-1

3104-1-FD-3

RM 3104-1

3102-1-CO-1

3104-1-FD-4

RM 3102-4

3102-1-CO-2 (LEAK DETECTION SYSTEM)

BUILDING 31A

BUILDING 23A

RM 2325B-1

2326-1-FD-1

2326-1-FD-2-O

2326-1-FD-2

2326-1-FD-3

STAIRS

2601-1-FD-4

ELECT ROOM RM 2329

2329-1-FD-1

2325A-1-FD-2

2325A-1-FD-1

RM 2326-1

RM 2325A-1

2326-1-SD-1

2326-1-CO-1

RM 2327-1

2327-1-FD-1

RM 2328-1

2322A-1-FD-1

2322A-1-FD-2

RM 2324-1

4"Dur

2324-1-FD-1

BUILDING 23

2322A-1-FD-3-O

2322A-1-FD-3

2322A-1-FD-4

2322A-1-FD-4-O

2322C-1-FD-1-O

4"Dur

2322C-1-FD-1

RM 2322C-1

RM 2322B-1

2322A-FD-5

2322C-1-PS-1

2322A-1-PS-1

2322A-1-FD-5-O

RM 2322D-1

4"Dur

2322D-1-FD-1

2322D-1-FD-1-O

2322A-1-FD-10

RM 2322A-1

2322B-1-FD-1

2322A-1-FD-6

2322A-FD-6-O

2322A-1-CO-1-O

RM 2323-1

2322B-1-CO-1

4"Dur

2323-1-FD-1

MH-6

FIGURE 13A

FIGURE 13B

FIGURE 13C

KEY MAP

BLDG. 23B TRAILER

RELOCATED SMOKING ENCLOSURE

25' 0 25' 50'

BAR SCALE
1" = 25'
CHECK GRAPHIC SCALE BEFORE USING

MATCHLINE
FIGURE 13C

MATCHLINE
FIGURE 13C

NOTES:
1. THIS DRAWING REPRESENTS THE SCHEMATIC LAYOUT OF THE PROCESS SEWER AS DETERMINED THROUGH CAMERA INSPECTION AND IS APPROXIMATE. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
2. FACILITY LAYOUT, ROOM NUMBERS, AND ROOM LABELS ARE FROM PLANS PROVIDED BY WYETH.

LEGEND

IP	IRON PIPE
CI	CAST IRON PIPE
Dur	DURIRON PIPE
SS	STAINLESS STEEL PIPE
PP	PLASTIC PIPE
FRP	FIBERGLASS REINFORCED PIPE
MH-3	MANHOLE (APPROXIMATE LOCATION)
CO-1	CLEANOUT (APPROXIMATE LOCATION)
FD-1	FLOOR DRAIN (APPROXIMATE LOCATION)
FD-1	TROUGH DRAIN (APPROXIMATE LOCATION)
PS-1	PIT SCALE (APPROXIMATE LOCATION)
SD-1	SINK DRAIN (APPROXIMATE LOCATION)
FD-1	FLOOR DRAIN (ASSUMED LOCATION)
CO-1	CLEANOUT (ASSUMED LOCATION)
	EXISTING TRUNK LINE (APPROXIMATE LOCATION)
	EXISTING LATERAL LINE (APPROXIMATE LOCATION)
	EXISTING LINE NOT INSPECTED (ESTIMATED LOCATION)

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

SWMU-7
PROCESS SEWER PIPING SCHEMATIC
CHEMICAL DEVELOPMENT PLANT

DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 13abc-SWMU-7-Process.dwg

PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 13B

MATCHLINE
FIGURE 13B

MATCHLINE
FIGURE 13B

TANK FARM

TRAILER

RELOCATED SMOKING ENCLOSURE

BUILDING 16

BUILDING 23

BUILDING 43

BLDG 16C

RM 2323-1
RM 2313-1
RM 2314-1
RM 2317
RM 2318-1
RM 2315-1
RM 2319-1
RM 2320
RM 2316-1
RM 2308B-1
RM 2308C-1
RM 2308A-1
RM 2308D
RM 2321
RM 2321A
RM 4301-1
RM 2315A-1
RM 2309A
RM 2309B
RM 2309C
RM 2309D
RM 2309E
RM 2312
RM 2311
RM 1617
RM 1614A
RM 1614
RM 1615
RM 1616
RM 1618
RM 1620
RM 1621
RM 1622A
RM 1623A
RM 1623B
RM 1624
RM 1625
RM 1626
RM 1627
RM 1628
RM 1629
RM 1630
RM 1630A
RM 1631
RM 1631A
RM 1631B
RM 1631C
RM 1602
RM 1603
RM 1604
RM 1605
RM 1601A VEST
RM 1607
RM 1607A
RM 1607B
RM 1608
RM 1610
RM 1611
RM 1613
RM 2307
RM 2306
RM 2301
RM 2302
RM 2304
RM 2304A
RM 2305
RM 4302
RM 4303
RM 4304
RM 4305
RM 4306
RM 4307
RM 4307A
RM 4308B
RM 16C01

2322D-1-FD-1-O
2322D-1-FD-1
2322A-1-FD-10
2322B-1-FD-1
2322A-1-FD-6
2322A-FD-6-O
2322A-1-CO-1-O
2322B-1-CO-1
2322A-1-CO-1
2322A-1-CO-2
2322A-1-SD-1
2322A-1-FD-9
2322A-1-FD-8
2322A-FD-7
2323-1-FD-1
2323-1-CO-1
2323-1-FD-2
2313-1-CO-1
2313-1-FD-1
2313-1-FD-2
2313-1-SD-1
2314-1-SD-1
2318A-1-SD-1
2318A-1-FD-1
2318A
2318-1-FD-1
2318-1-CO-1
2318-1-PS-1
2315A-1-FD-1
2315-1-FD+1
2315A-1-FD-2
2319-1-FD-1
2319-1-CO-1
2308B-1-SD-1
2308B-1-FD-1
2308C-1-FD-1
2308D-1-FD-1
2308C-1-CO-1
2321-1-CO-1
2321-1-CO-2
2321-1-FD-1
2321-1-FD-2
2321-1-FD-3
2321A-1-FD-1
2321A-1-CO-1
MH-6
MH-14

4"Dur
4"Cl
4"SS
4"ø
4" DIA
3" DIA
2"ø
4"ø F.D.
CO
FD
SD
PS

SHIPPING & RECEIVING
AIR LOCK
EQUIPMENT STORAGE
CORRIDOR 2310
REFRIGERATOR
COMPUTER HUB
LAB STORAGE
MECHANICAL ROOM
REACTOR ROOM
LIBRARY
LABORATORY STORAGE
STAIRS
CORRIDOR 1619
CORRIDOR 1622
CORRIDOR 1623
LOADING AREA
LABORATORY
GLASS WASH
WOMEN TOILET
MEN LOCKER ROOM
FREEZER
COOLER
ANALYTICAL LAB
CONF. AREA
WOMENS TOILET
WOMENS LOCKER
JANITOR CLOSET
SHOWERS
MAIN OFFICE
OFFICE
PROCESS LABORATORY
INSTRUMENT ROOM
STOKES DRYER VAC PUMP & TCM
DRUM HEATER
MAINTENANCE STORAGE
HOT OIL HEATER
EXISTING PIPE TRENCH
OFFICE TRAILER

25' 0 25' 50'

BAR SCALE
1" = 25'
CHECK GRAPHIC SCALE BEFORE USING

FIGURE 13A
FIGURE 13B
FIGURE 13C
KEY MAP

N

NOTES:
1. THIS DRAWING REPRESENTS THE SCHEMATIC LAYOUT OF THE PROCESS SEWER AS DETERMINED THROUGH CAMERA INSPECTION AND IS APPROXIMATE. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
2. FACILITY LAYOUT, ROOM NUMBERS, AND ROOM LABELS ARE FROM PLANS PROVIDED BY WYETH.

LEGEND

IP	IRON PIPE
CI	CAST IRON PIPE
Dur	DURIRON PIPE
SS	STAINLESS STEEL PIPE
PP	PLASTIC PIPE
FRP	FIBERGLASS REINFORCED PIPE
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CO-1	CLEANOUT (APPROXIMATE LOCATION)
FD-1	FLOOR DRAIN (APPROXIMATE LOCATION)
FD-1	TROUGH DRAIN (APPROXIMATE LOCATION)
PS-1	PIT SCALE (APPROXIMATE LOCATION)
SD-1	SINK DRAIN (APPROXIMATE LOCATION)
FD-1	FLOOR DRAIN (ASSUMED LOCATION)
CO-1	CLEANOUT (ASSUMED LOCATION)
	EXISTING TRUNK LINE (APPROXIMATE LOCATION)
	EXISTING LATERAL LINE (APPROXIMATE LOCATION)
	EXISTING LINE NOT INSPECTED (ESTIMATED LOCATION)
	EXISTING LINE NOT INSPECTED DOUBLE WALLED STAINLESS STEEL PIPING WITH LEAK DETECTION (ESTIMATED LOCATION)

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD &CURRAN

SWMU-7
PROCESS SEWER PIPING SCHEMATIC
CHEMICAL DEVELOPMENT PLANT

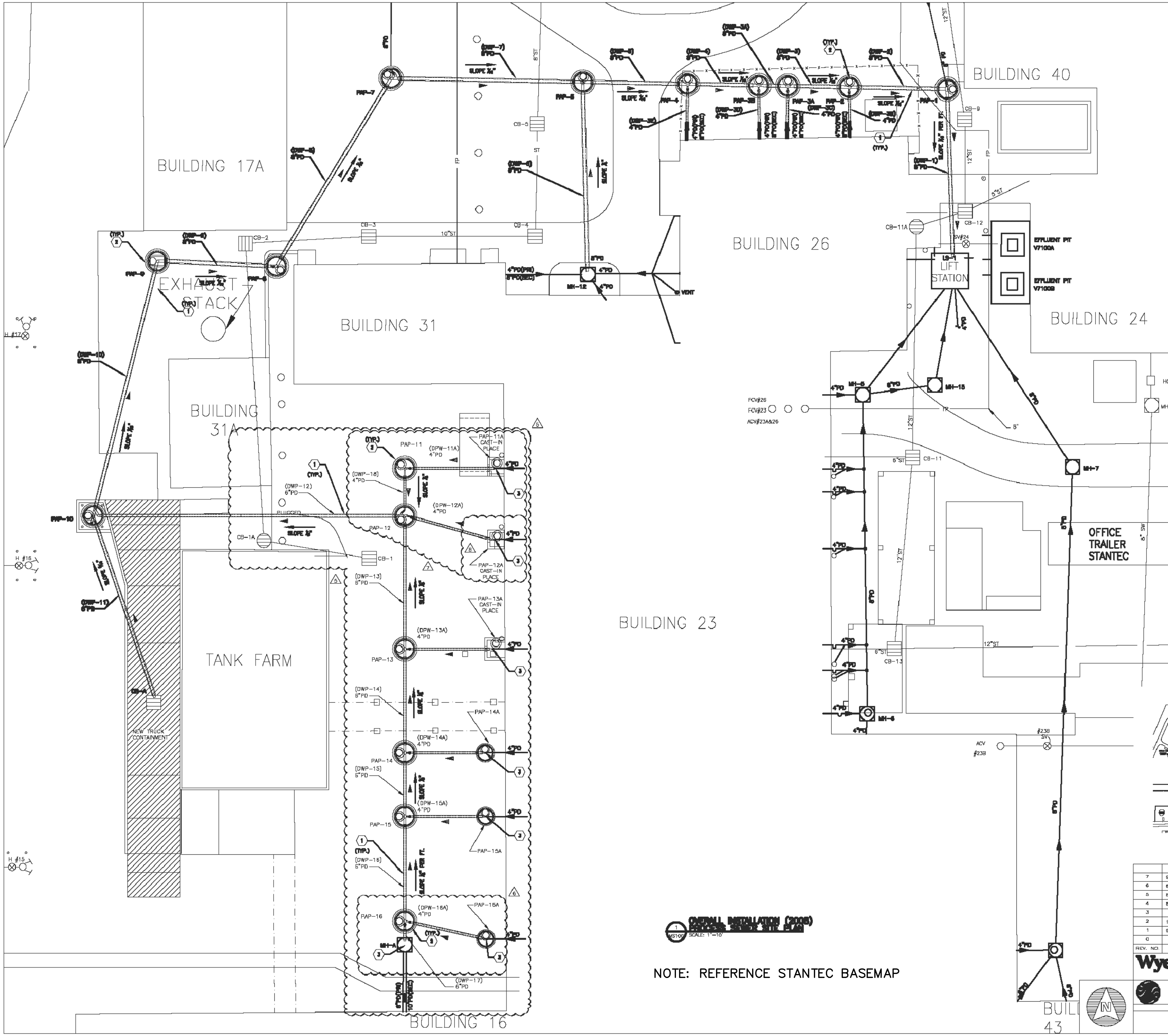
DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 13abc-SWMU-7-Process.dwg

PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 13C



NOTE: REFERENCE STANTEC BASEMAP

GENERAL NOTES

1. REFER TO SITE DRAWINGS S101 AND S102 FOR EXCAVATION, BACKFILL AND REPAIR.
2. REFER TO DRAWING P100 FOR COMPRESSED AIR PIPING.
3. REFER TO PC DRAWINGS FOR PRECAST "PAP" PRE-PURCHASE PACKAGE. REFER TO PP DRAWINGS FOR PIPING PRE-PURCHASE PACKAGE. OWNER SHALL PROVIDE. CONTRACTOR SHALL INSTALL.
4. REFER TO MS DRAWINGS FOR PHASING OF DEMOLITION, NEW AND TEMPORARY INSTALLATIONS.
5. TEMPORARY PUMPS AND HOSE SHALL BE PROVIDED BY CONSTRUCTION MANAGER AND BY THIS CONTRACT.
6. REFER TO DRAWING MS500 FOR PAP DETAILS.
7. REFER TO DRAWING MS600 FOR ISOMETRIC VIEW WITH INVERTS AND RIM ELEVATIONS.
8. SLOPE DIMENSION IS PER FOOT (EXAMPLE = ¼" PER FT.).
9. COORDINATE AND EXECUTE ALL WORK INCLUDING EXCAVATION, BACKFILL, REMOVAL AND DISPOSAL OF PIPING AND MANHOLES, AND INSTALLATION OF NEW WORK CONSISTENT WITH ENVIRONMENTAL REMEDIATION CONTRACT REQUIREMENTS.
10. SEQUENCING OF TEMPORARY, DEMOLITION AND NEW WORK SHALL BE DIRECTED BY CONSTRUCTION MANAGER.

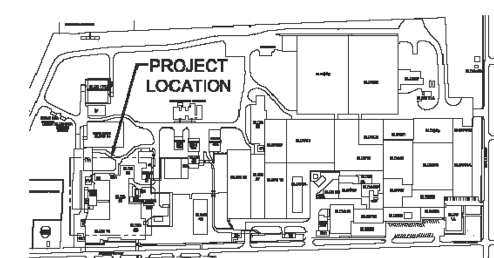
INSTALLATION KEYED NOTES

1. DOUBLE WALL PROCESS SEWER PIPE SHALL BE PROVIDED BY CONSTRUCTION MANAGER AND INSTALLATED BY THIS CONTRACT. REFER TO PRE-PURCHASE PIPING (PP) DRAWINGS FOR MORE INFORMATION.
2. PERSONNEL ACCESS POINT (PAP) SHALL BE PROVIDED BY CONSTRUCTION MANAGER AND INSTALLATED BY THIS CONTRACT. REFER TO PRE-PURCHASE PRECAST (PC) DRAWINGS FOR MORE INFORMATION.
3. VERIFY LOCATION OF JOINT IN FIELD.

LEGEND

POINT OF DISCONNECTION :
POINT OF CONNECTION :
(NEW) PIPING :
(DEMO/REMOVAL) PIPING :
(EXISTING) PIPING :
DIRECTION OF FLOW :

PD = PROCESS DRAIN
DWP = DOUBLE WALL PIPE
SWP = SINGLE WALL PIPE
TSP = TEMPORARY SUMP PUMP
FP = FIRE PROTECTION PIPING (EXISTING)
SW = SANITARY WASTE PIPING (EXISTING)
ST = STORM PIPING (EXISTING)
CB = CATCH BASIN (EXISTING)
MH = MANHOLE (EXISTING)
PAP = PERSONNEL ACCESS POINT (NEW)



WYETH ROUSES POINT SITE KEY PLAN
SCALE: NONE

REV. NO.	DATE	DESCRIPTION
7	9/28/2009	CONSTRUCTION NOTICE #3 REVISED (1X)
6	8/26/2009	CONSTRUCTION NOTICE #3 REVISED
5	8/20/2009	CONSTRUCTION NOTICE NO. 3
4	8/17/2009	CONSTRUCTION NOTICE NO. X
3	4/3/2009	ISSUED FOR CONSTRUCTION
2	11/7/2008	CONSTRUCTION NOTICE NO. 2
1	9/24/2008	CONSTRUCTION NOTICE NO. 1
0	7/8/2008	ISSUED FOR BID

Wyeth RESEARCH
ROUSES POINT, NEW YORK

Stantec
1791 North Street B40-4
Endicott, New York 13760
(607) 755-8800
www.stantec.com

CHEM D : PROCESS SEWER UPGRADE

OVERALL INSTALLATION (2008)
PROCESS SEWER SITE PLAN

DATE: 7/8/2008
SCALE: AS NOTED
DRAWING NO. MS100
MS100
191000833

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

SWMU-7 EXTERIOR PROCESS SEWER SITE PLAN

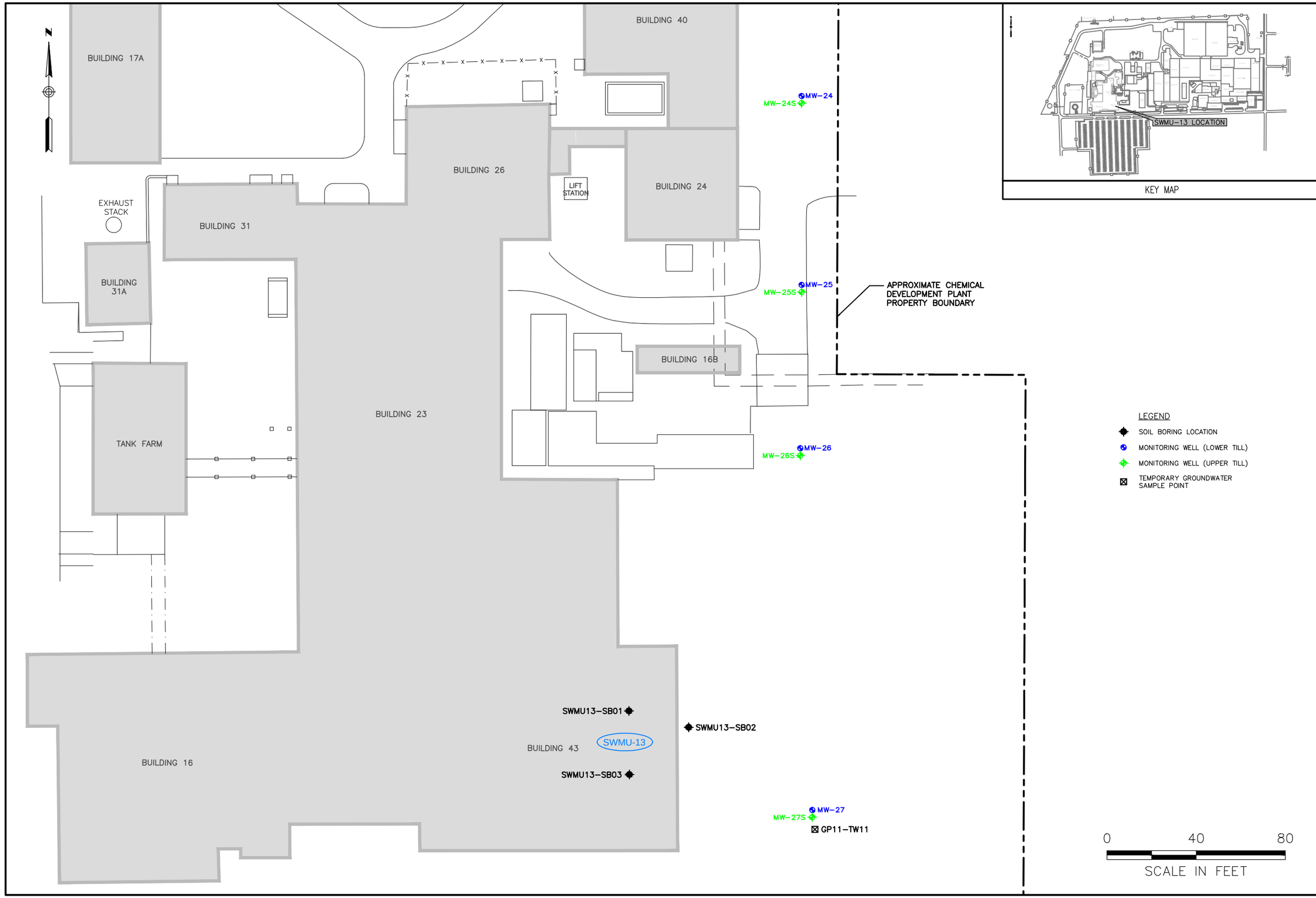
DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 14 Stantec.dwg

PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 14



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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

SWMU-13: BUILDING 16 FORMER SANITARY SEWER HOLDING TANKS

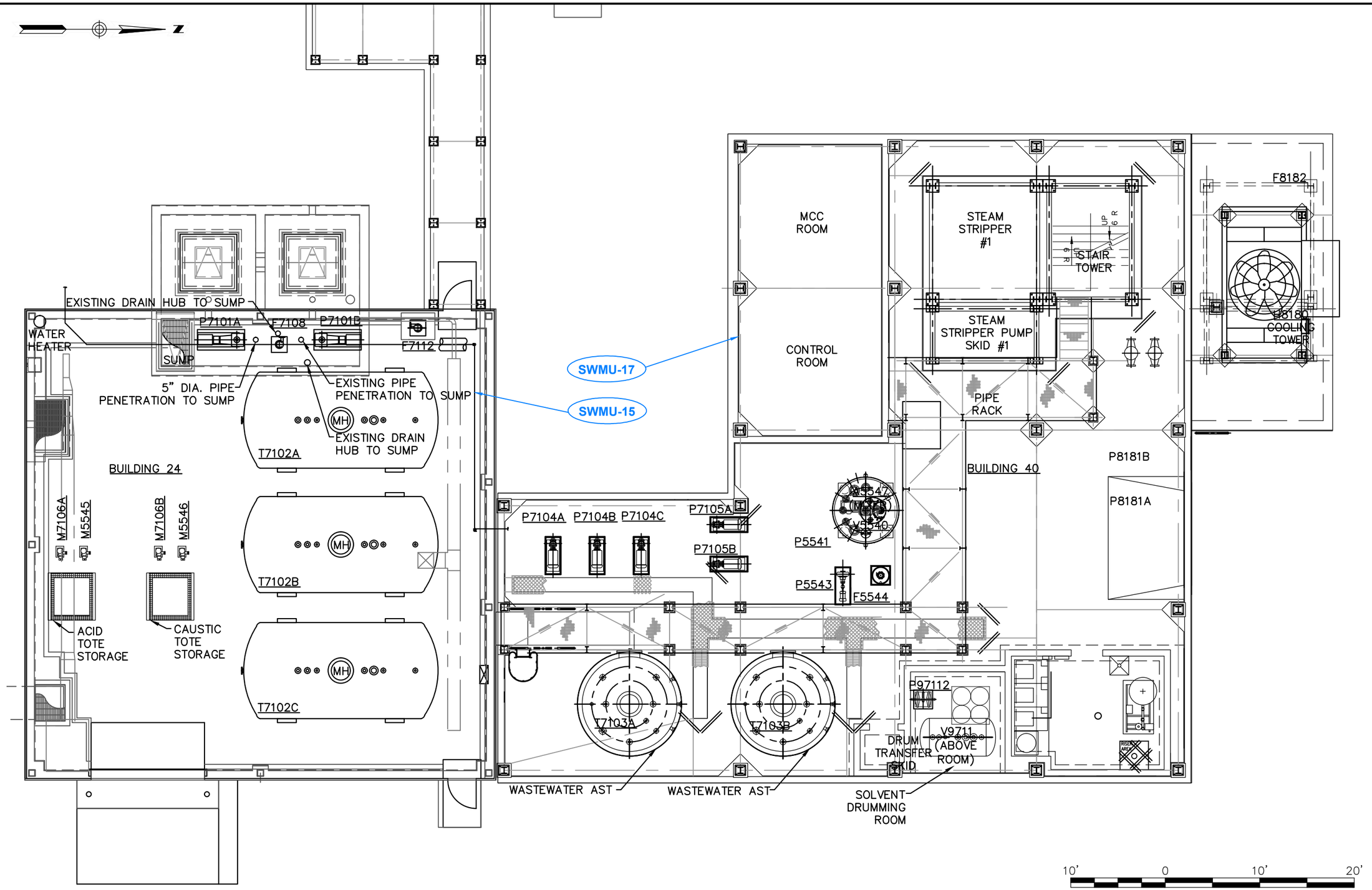
CHECKED BY: DW
Figure 15 SWMU-13.dwg
DESIGNED BY: SS
DRAWN BY: EVR/PF

PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 15



10' 0 10' 20'

BAR SCALE
1" = 10'
CHECK GRAPHIC SCALE BEFORE USING

DRAWING SOURCE: PARSONS ENGINEERING SCIENCE, INC., 290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, NY 13088 RECORD DRAWING DATED 9-30-02, DRAWING NO. M2-3

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

SWMU-15: BLDG 24 WASTEWATER TREATMENT PLANT & SWMU-17 BLDG 40 WW STEAM STRIPPER

DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Fig 16-S-15_Fig 17-S-17.dwg

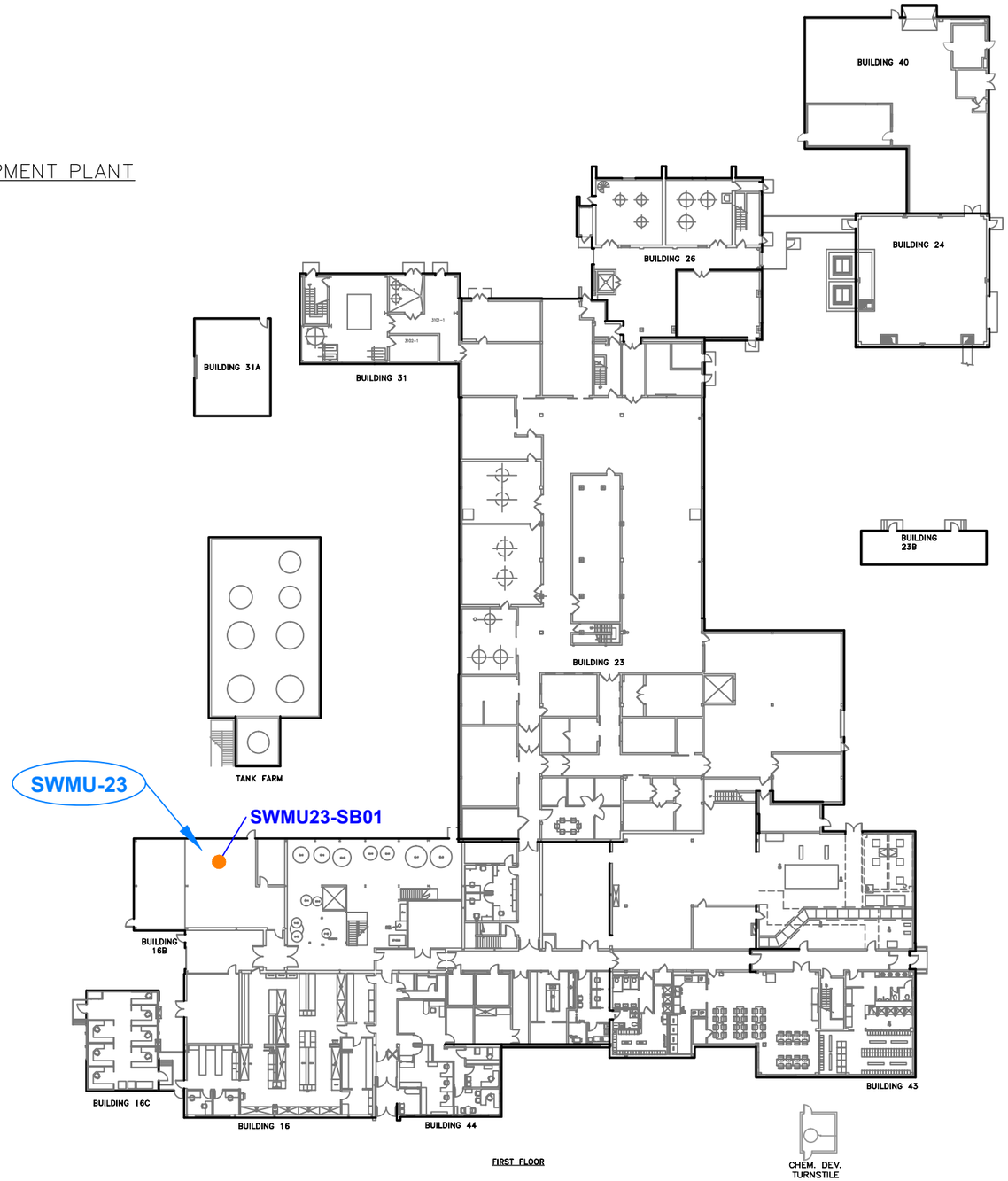
PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

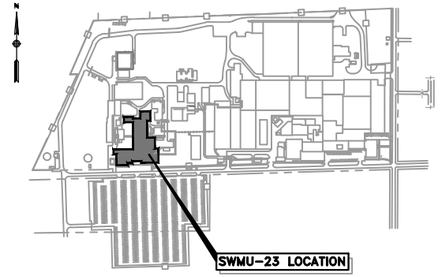
JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 16

CHEMICAL DEVELOPMENT PLANT



FIRST FLOOR



LEGEND

● SOIL BORING

0 50 100

SCALE IN FEET

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

SWMU-23: BUILDING 16
FORMER WASTE STORAGE AREA
IN NORTHWEST CORNER

DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Figure 17 SWMU-23 Bldg16.dwg

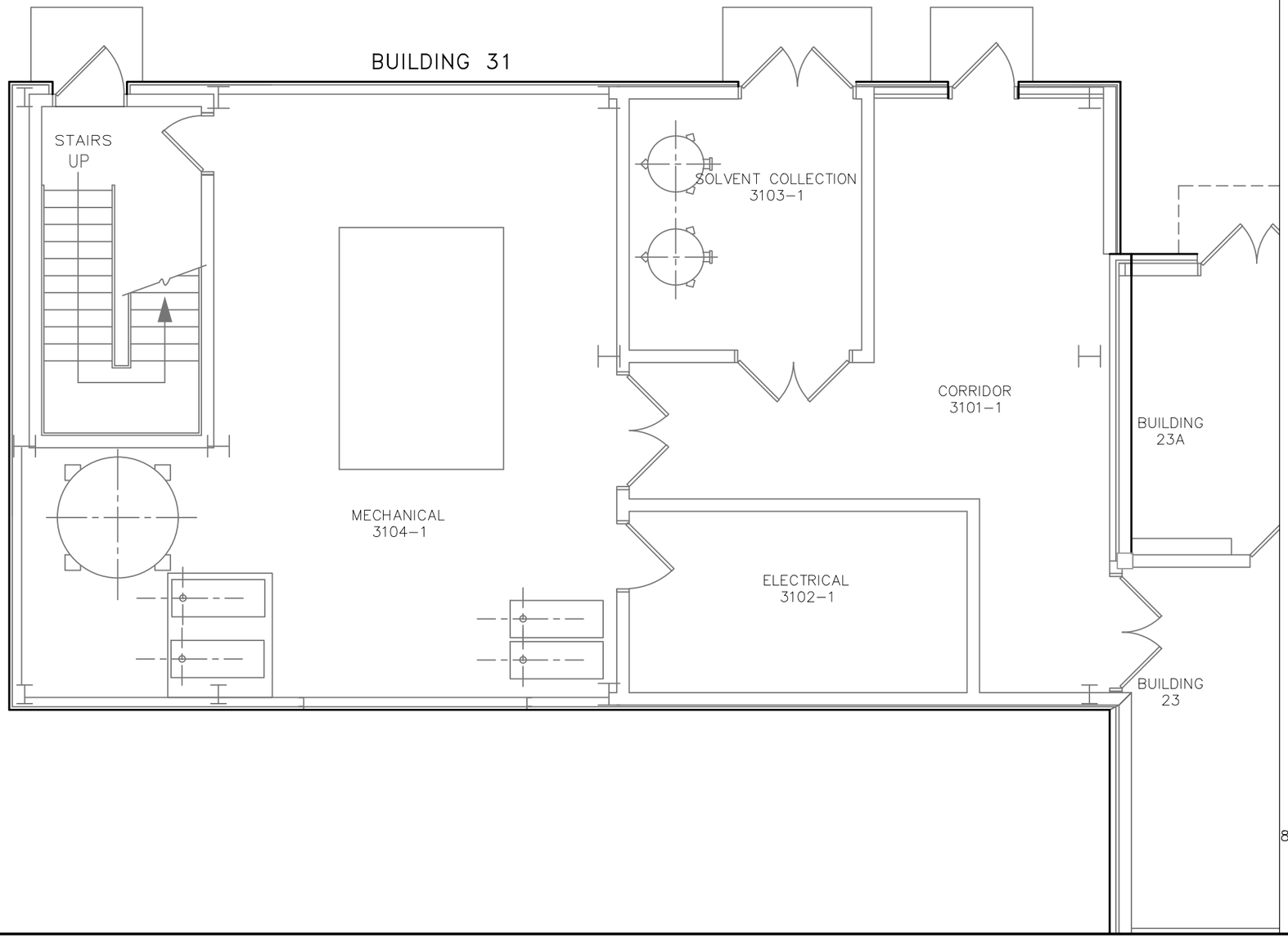
PFIZER, INC.
ROUSES POINT, NEW YORK

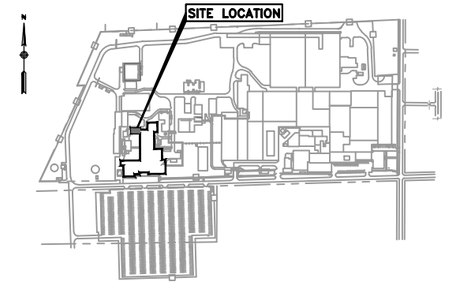
CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 17

CHEMICAL DEVELOPMENT PLANT





80' 0 80' 160'

BAR SCALE
1" = 80'
CHECK GRAPHIC SCALE BEFORE USING

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

SWMU – 24: BUILDING 31
SOLVENT CONDENSATE SYSTEM

DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Fig 18_S–24Fig 19–S–26.dwg

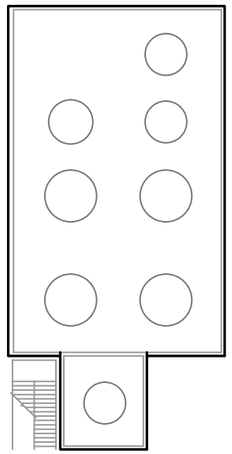
PFIZER, INC.
ROUSES POINT, NEW YORK

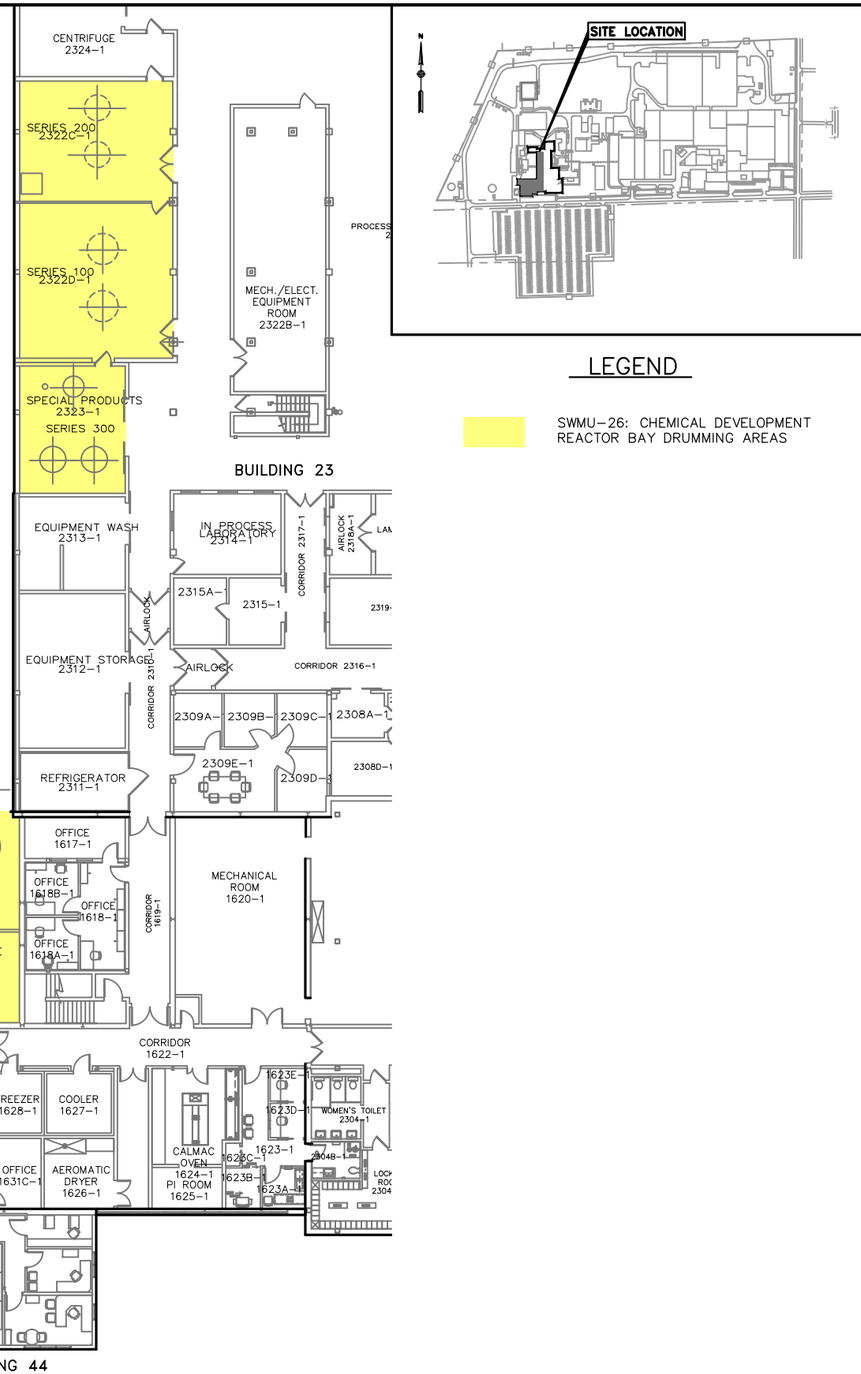
CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 18

CHEMICAL DEVELOPMENT PLANT





FIRST FLOOR

LEGEND

SWMU–26: CHEMICAL DEVELOPMENT REACTOR BAY DRUMMING AREAS

350' 0 350' 700'

BAR SCALE
1" = 350'
CHECK GRAPHIC SCALE BEFORE USING

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

SWMU – 26: CHEMICAL DEVELOPMENT REACTOR BAY DRUMMING AREAS

DESIGNED BY: SS
DRAWN BY: EVR/PF
CHECKED BY: DW
Fig 18_S–24Fig 19–S–26.dwg

PFIZER, INC.
ROUSES POINT, NEW YORK

CHEMICAL DEVELOPMENT PILOT PLANT SWMU SAMPLING AND ANALYSIS PLAN

JOB NO: 206910
DATE: JUNE 2014
SCALE: AS NOTED

FIGURE 19