PERIMETER AIR MONITORING PLAN

Former South Warren Street Gas Works Site

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1.0 INTRODUCTION

On behalf of Public Service Electric and Gas Company (PSE&G), this Perimeter Air Monitoring Plan (PAMP) was prepared by Paulus, Sokolowski and Sartor, LLC (PS&S) and Triumvirate Environmental (TEI) for use during the remediation of a former Manufactured Gas Plant (MGP) Site identified as the Former South Warren Street Gas Works (Site). This PAMP establishes guidelines and requirements for the perimeter air monitoring activities in support of the proposed intrusive activities at the Site located in Trenton, Mercer County, New Jersey. This PAMP was prepared to support the remedial activities presented in the Remedial Action Workplan Addendum (RAWPA) for the Site.

This PAMP has been prepared in accordance with the current NJDEP Perimeter Air Monitoring Technical Guidance, issued 12/2023, posted 12/4/2023. The PAMP action levels identified herein were determined using the current United States Environmental Protection Agency (USEPA) Risk Based Screening Levels: "*Regional Screening Levels for Chemical Contaminants at Superfund Sites*", Calculator for Site-specific Residential Risk-Based Screening Levels for Ambient Air[1].

1.1 Site Location, History and Current Conditions

1.1.1 Site Location

The Site is a contiguous irregular-shaped parcel of land encompassing approximately one and a half acres. The Site is bounded on the east by Lincoln Highway, on the south and west by Market Street, and on the north by John Fitch Way. Located northeast of the site is the New Jersey Department of Labor (NJDOL) building, further northeast beyond the NJDOL building is the New Jersey Department of Treasury (NJDOT) building. The New Jersey Department of Justice (NJDOJ) Complex is located to the south and east of the site on the opposite side of Market Street. Remedial activities will consist of excavation of soil from an area of approximately 56,540 square feet to a depth of approximately 25 feet in the parking lot west of the helipad.

1.1.2 Site History

Trenton Gas Plant, a predecessor to PSE&G operated the Trenton manufactured gas plant from 1848 through 1898 at the location between Market St. and Lincoln Highway to the east and west and John Fitch Way and Market Street to the north and south, Block 10701. Lot 2's portion contained gas holders for the former Trenton Gas Plant. Currently the portion to be remediated is approximately 294 feet by 330 feet of Block 10701, Lot 2 and a partial section of Lot 3.

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[1] Refer to the USEPA calculator website at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

For purposes of evaluating potential health effects on nearby receptors, the Full-Time Resident receptor category was utilized, due to residential units to the west of the remediation area, and on the other sides of the surrounding streets.

1.1.3 Receptors

The proposed remedial activities will take place in the parking area supporting the NJDOL Building and a portion of a pedestrian walkway west of the state helipad. Occupants of the NJDOL Building and other surrounding buildings will be present during operating hours. A building assessment and survey was conducted at the NJDOL and NJDOT buildings on 11/21/23 and at the NJJC on 12/07/23. The Heating, Ventilation, and Air Conditioning (HVAC) Engineering Survey Reports are included in Appendix D and provide an HVAC evaluation with recommendations for adjacent remedial work. The building and HVAC survey was conducted to understand possible pathways for both vapors and dust to enter each of the buildings during remedial activities. The NJDOL building is located approximately 200 feet north from the remedial boundary, and its main entrance is located at the center of the southern side with another entrance opposite, facing the NJDOT Building. Mechanical room doors and unused ventilation intakes are present on the first floor at the east and west sides of the building. Additional grates located in the sidewalk connect to mechanical spaces in the basement. The NJDOT Building is located 500 feet north from the remedial boundaries and behind the NJDOL Building and would not see impacts due to its distance from the remediation boundary and location. Both buildings contain inoperable windows and have air intakes and HVAC systems on the roof of their respective buildings. The HVAC systems are at least 13 floors high and approximately 130 feet from the ground surface. Possible wind-blown contaminants that encounter obstructions, such as a building, travel around the obstruction and do not migrate vertically. The NJDOJ Complex is located approximately 800 feet southeast of the remedial boundary with an air intake at ground level for the west atrium. During the survey, building management described additional carbon filters to be installed at the ground level intake. This building also contains inoperable windows and rooftop air intakes for the HVAC system.

1.2 Proposed Remedial Activities

Based on an evaluation of the Site history, the primary contaminants of concern are residual MGP process residuals including coal tar and oil material. A nominal level of metals, and polyaromatic hydrocarbons (PAHs) were found in soil samples. As documented in the RAWP, to address soils impacted with coal tar/oil material, the planned remedial actions involve the removal, by excavation, of soil within the upper 25 feet. The planned remedial excavation will occur within a temporary enclosure under negative pressure with an air scrubbing carbon unit in accordance with the Remediation Agreement between PSE&G and the State of New Jersey. This temporary enclosure is proposed to minimize exposure of contaminants of concern to the local community.

1.3 Key Personnel

The following are the key personnel for the Site soil remediation activities. PS&S is the construction oversight engineer (COE) and PAMP implementation consultant for PSE&G. The Remedial Action (RA) Contractor is TBD. Triumvirate Environmental, Inc (TEI) is PS&S's PAMP Program consultant.

PSE&G Personnel

Ron Meloskie, PSE&G Project Manager
Lionel Montanez, Remediation Specialist

PS&S Personnel

James Boyer, P.E., Project Manager
Brian Kelley, Construction Oversight Engineer
Rich Andes, Assistant Construction Oversight Engineer
TBD, Perimeter Air Monitoring Technician (PAMT)
David Tomsey, TEI PAM Program Operations Manager

RA Contractor Personnel

TBD, Project Manager (PM)
TBD, General Manager (GM)
TBD, Project Superintendent
TBD, Site Safety and Health Officer (SHSO)

1.3.1 Responsibilities

The PSE&G Project Manager has the overall responsibility for the implementation of the PAMP.

TEI, contracted by PS&S, on behalf of PSE&G, has prepared this PAMP and will be responsible for the day-to-day perimeter air monitoring activities. The PAMT will be responsible for the operation of the air monitoring equipment, collection of air samples and submission of the samples to the laboratory and compiling the results of the air monitoring data. The COE is responsible for immediately notifying the RA Contractor of any exceedances of the action levels so that the appropriate control measures can be taken.

The RA Contractor has the responsibility for the implementation of the odor, emission, and dust control measures to reduce levels of organic vapors and dusts below the action levels specified herein. The RA Contractor's SHSO will work with the PAMT, ACOE, and COE throughout the Site remediation activities to monitor worker exposure and manage the RA Contractor operations in compliance with this PAMP.

The RA Contractor, and two of the PAMT, ACOE, or the COE will be members of the Odor Assessment Team (OAT).

2.0 PROJECT OBJECTIVES

2.1 Perimeter Air Monitoring Objectives

The purpose of this PAMP is to ensure that members of the general public are not exposed to hazardous airborne contaminants originating from the Site RA as determined by measured concentrations above the health-based action levels provided in this PAMP.

This PAMP was designed to accomplish the following objectives:

1. Protect human health from exposure to unacceptable risk levels of contaminants resulting from fugitive emissions of former MGP process residuals, based on application of the USEPA risk-based calculator (cited above);
2. Minimize risk of community exposure to contaminants resulting from remediation work performed at the Site;
3. Determine the need for, and evaluate the effectiveness of, vapor and/or dust emission controls;
4. Monitor and document ambient air quality at project perimeter locations during remediation activities to prevent elevated off-Site exposures;
5. Establish/foster community confidence;
6. Evaluate the monitoring data to evaluate exposure risks at the project perimeter;
7. Verify real-time air monitoring data through the collection of confirmatory samples; and,
8. Complete a summary of the PAM Program for inclusion into a Remedial Action Report (RAR) to document the results and evaluate the exposure risk.

The following assumptions and variables were used as input parameters into the USEPA calculator:

Sensitive Receptor:	Full-Time Resident
Project Duration:	260 work-days
Work Shifts:	5 days/week, 10 hours/day of intrusive work

The calculator was run for all analytes having detected concentrations in soil samples.

2.2 Data Quality Objectives

The Data Quality Objectives (DQOs) for this PAMP are established to define the data gathered in relation to the methods used to collect the data and the data's anticipated end use. The DQOs apply to the equipment that is being used, their calibration and maintenance, and other factors that may impact sample integrity and the quality of the data collected.

Both real-time screening level and confirmatory data will be collected to evaluate contaminant levels in the air at the perimeter of the Site RA (refer to Figure 2). The DQOs are directed at confirming the integrity of the PAMP procedures for real-time monitoring and for collection, custody, transportation, and analysis of confirmatory samples. The following DQO levels will be utilized during the performance of Site RA.

1. **Real-time screening data**: Field screening will be performed using PAMP field stations equipped with a photo-ionization detector (PID) for organic vapors and an aerosol dust monitor for particulates. Real-time instrumentation will serve as surrogates for each contaminant of concern (COC) identified in Appendix A. Calculated action levels are based on individual COCs with action levels representing Total Volatile Organic Compounds (TVOC) or particulates measured with real-time equipment. The quality assurance/quality control (QA/QC) for this equipment includes routine calibration in accordance with the manufacturer's specifications. The data collection QA/QC control is limited to basic calibration checks. The real-time data will be used to document airborne concentrations measured during Site RA activities and assist Site personnel with determining the effectiveness of particulate and vapor controls or the possible need for additional vapor and/or dust suppression activities or alteration of work activities. The real-time data will be used to show compliance with the acute action levels for perimeter air quality.

2. **Confirmatory data**: This DQO level applies to analyses performed off-site at an analytical laboratory. The analyses will be conducted in accordance with the appropriate USEPA, Occupational Safety and Health Administration (OSHA), and/or National Institute of Occupational Safety and Health (NIOSH) air sampling methods. The data will include QA/QC elements specified by the appropriate analytical method. The data will be used to show compliance with the analytical action levels for specific target compounds. Periodic confirmatory samples will be collected once every work week for metals, PAHs, and VOCs during intrusive activities to monitor average perimeter air concentrations over the duration of the Site RAs. VOC Action level exceedance confirmatory samples will be collected whenever there is a TVOC action level trigger condition on the real-time PAMP PID to provide definitive data for evaluation of the alarm condition (refer to Section 4.0).

3.0 TARGET PAMP PARAMETERS AND ACTIONLEVELS

The following PAMP Action Levels will be tracked and implemented:

A. Acute Air Monitoring Action Levels
B. One Hour Short-Term Air Monitoring Action Levels
C. Chronic Air Monitoring Action Levels

3.1 Development of PAMP Action Levels

The PAMP Program presented herein is based on a review of the data from recent waste classification samples collected from the planned remedial action area. The conceptual site exposure model identifies the processes by which COCs could be transported to receptors outside the remedial area, i.e. volatilization (VOCs) and adherence to respirable particulate matter PM_{10} (particles with a diameter of 10 micrometers or less). These particles are small enough to pass through the throat and nose and enter the lungs.

The inhalation pathway is the key exposure pathway for this remedial action, and it follows that the objective of the PAMP is to focus and control emissions from the remedial area and confirm the protectiveness of public health through real time and confirmatory sampling. To accomplish this objective, health-based action levels were derived. The acute or short-term or action levels will be continuously monitored in real time and serve as an internal threshold to alert personnel to take measures to mitigate respirable dust (150 micrograms per cubic meter [ug/m^3]) and/or volatile emissions (1.15 parts per million [ppm] TVOCs).

The chronic action levels for VOCs, PAHs, and metals included in Appendix A were derived using the USEPA "*Regional Screening Levels for Chemical Contaminants at Superfund Sites*" which is a calculator that produces risk-based screening levels based on USEPA inhalation toxicity factors. The basis for the USEPA toxicity factors is provided in the calculator. For example, the source of benzene toxicity factors is USEPA's Integrated Information System (IRIS) and the USEPA's IRIS risk assessments can be located at https://iris.epa.gov/AtoZ/?list_type=alpha.

For those COCs transported on soil particulates (PAHs and metals), the concentrations were extrapolated to a respirable dust concentration for comparison to the National Ambient Air Quality Standards (NAAQS) PM_{10} standard of 150 $\mu g/m^3$. If a particulate transported COCs exceeded that standard, the standard was selected as a surrogate for all dust borne COCs. For VOCs the most stringent criterion was for benzene (13.8 parts per billion [ppb]). Periodic confirmation sampling will be performed for VOCs, PAHs, and metals to demonstrate compliance with the risk-based toxicity criteria that was based on the project duration.

In summary, the COCs are benzene, benzo(a)pyrene, dibenzo(a,h)anthracene, and cobalt which are reportedly present in concentrations, as would be expected at a former MGP site. Detectable VOCs, PAHs, and metals indicated in soil sample results and evaluated in action level calculations are included in Appendix A.

Calculations for deriving these action levels are provided in Appendix A in multiple tables, three for particulates (PM_{10}) and the other for VOCs. Constituents that had detected

concentrations in the waste class data are listed in Appendix A. Please note that not all these constituents were available in the USEPA calculator database, e.g., zinc. Constituents without an EPA screening level are included in Appendix A's Action Level Calculation Tables and

3.1.1 Acute Air Monitoring Action Levels

Among the VOC constituents, the most stringent is benzene, with a site-specific screening level of 13.3 ppb and a calculated 15-minute time weighted average real-time TVOC action level of 1. 15 ppm (refer to Appendix A).

The acute PM_{10} action level criteria were determined based on evaluating calculated screening levels for the various metals and PAHs detected in the soil results. Cobalt is the most stringent metal with a site-specific screening level of 0.0202 $\mu g/m^3$ based on EPA's Risk Based Screening Levels. As a result, Cobalt was used to determine the particulate action level that factors in duration of daily intrusive work and project duration. Benzo(a)pyrene and dibenzo(a,h)anthracene are the most stringent PAHs both with a site-specific screening level of 0.0554 $\mu g/m^3$. For these parameters, the calculated real-time chronic action levels are greater than any particulate levels that would realistically be encountered in typical field operations (refer to Appendix A). By comparison, the acute action level for PM_{10} from the National Ambient Air Quality Standard (NAAQS) for PM_{10} is 150 $\mu g/m^3$ as specified in USEPA per OSHA Title 40 Code of Federal regulation (CFR) Part 50. This value will be used as the PM_{10} action level for this PAMP.

3.1.2 One Hour Short-Term Air Monitoring Action Levels

The One Hour Short-Term Air Monitoring Action Levels will be utilized for the TVOC Site primary COC, benzene, which is 106.4 ppb (0.1 ppm). This is derived from the ratio of the 8-hour intrusive work shift to a 1-hour duration for comparison with a SUMMA canister for analytical exceedance sampling.

3.1.3 Chronic Air Monitoring Action Levels

Among the VOC constituents, the most stringent is benzene, with a site-specific screening level of 13.3 ppb based on the EPA's Risk Based Screening Levels used to determine the acute TVOC action level.

The exposure parameters used in the calculation of the real-time action levels were selected to match the Site RA plans for remediation. Soil disturbance or intrusion is projected to take place over a period of approximately 260 working days (5 days per week, over a nominal 10-hour workday with anticipated 10 hours of intrusive activities). During these periods, it is assumed that the Site RA soil excavation and other Site RA disturbance activities could lead to fugitive airborne vapors and/or particulates that could be transported off-site. As such, the analytical action levels are tailored to be protective and reflective of the Site RA and the RAWP. The critical receptor category used in the calculations is a Full-Time Resident, based on the proximity of nearby office buildings.

In summary, the real-time PAMP action levels are summarized in the following Table 1.

Table 1 – PAMP Action Levels		
Action Level	**PM_{10}**	**TVOC**
Acute Air Monitoring Action Level	150 µg/m^3	1.15 ppm (TVOC)[2]
One Hour Short-Term Air Monitoring Action Level	N/A	106.4 ppb[1]
Chronic Air Monitoring Action Level	150 µg/m^3	13.3 ppb[1]

1) Values are specific to benzene, additional chronic air monitoring action levels are included in Appendix A.
2) TVOC – total volatile organic compounds as measured by a PID.

3.2 Analytical Sampling – Confirmatory and Alarm Condition

A program of analytical sampling is recommended for confirmatory purposes and exceedance sampling for VOCs. For this PAMP, the sampling program will include VOCs, PAHs and metals. The following table summarizes the sampling methods to be used.

Table 2 – Analytical Sampling – Confirmatory and Alarm Condition		
Constituent	**Method**	**Sampling Media**
VOCs: Benzene	EPA TO-15	Summa Canister
PAHs: Benzo(a)pyrene, Dibenzo(a,h)anthracene	NIOSH 5506	37PTFE 2.0/Treated Amberlite XAD-2
Metals: Cobalt	Mod. NIOSH 7303; ICP/MS	Mixed Cellulose Ester

4.0 INSTRUMENTATION

The following monitoring and sampling instruments will be utilized by PAMT to implement the PAMP.

PIDs with data-logging capabilities will be used to monitor the levels of TVOC.

A. PIDs can measure the concentration of TVOC within ambient air but are unable to distinguish specific compounds. The PID to be used will be a RAE Systems MiniRAE- 3000 or equivalent.
B. Particulate monitors with data-logging capabilities will be used to detect concentrations of PM_{10}. The monitor to be used will be a TSI model DustTrak-II, 8530, or equivalent.
C. An automated weather station will be used to monitor wind direction, wind speed, temperature, relative humidity, and barometric pressure.
D. These monitoring devices will be part of an integrated air-monitoring system transmitting data from the devices to a secure off-site database cloud server through cellular telemetry. The server will maintain the master database and will generate alerts and alarms, which will be communicated to the PAMT at the base-station console and by cell phone or another web enabled device. Each PAMP station will contain a PID and PM_{10} dust monitor and will also maintain a local database of environmental measurements for redundancy. The PAMP server will correlate wind-speed and direction to the environmental measurements in real-time. If telemetry failure occurs during operations, the Standard Operation Procedures for Managing Telemetry Failure will be followed as provided in Appendix E.

Confirmatory air sampling equipment (CSE)

A. 6-liter Summa canisters with air intake regulators will be used for confirmatory and exceedance (alarm condition) sampling of benzene. One and eight-hour regulators will be available onsite to account for varying sampling needs.
B. A 2 liter per minute sampling pump will collect confirmatory samples of benzo(a)pyrene and dibenzo(a,h)anthracene.
C. A 2 liter per minute sampling pump will collect confirmatory samples of cobalt through an MCE filter for laboratory analysis.

5.0 PERIMETER AIR MONITORING PLAN

5.1 Number and Placement of PAMP Station Locations

At a minimum, four PAMP stations (AMS-1 through AMS-4) will be used for real-time monitoring during the remedial action. The PAMP stations will be located at the north, east, south, and west of the remedial area around the active RA operations. Specific locations of the PAMP stations will be evaluated based on the location of soil excavation activities and Site RA operations, temporary enclosure location, wind direction, and location of receptors. An additional fifth PAMP station (AMS-5) will be positioned between the Site and the NJDOL building for the duration of the project. A station will be located southeast of the remediation area to monitor winds out of the northwest, towards the NJJC building. Figure 2 provides the proposed PAMP stations for the initial scope of RA activities. PSE&G may opt to increase the number of stations.

Each PAMP station will be configured with air intake ports at a height of 4 feet to 5 feet above grade surface to represent the breathing zone. The PAMP stations will be housed in a tripod mounted weatherproof enclosure to allow for movement based on Site RA activities. The PAMT will have an extra set of real-time monitoring equipment available as a backup and to verify the proper operation of the instruments at the PAMP stations. Should more than one PAMP stations fail, then Site RA operations may continue for the remainder of the day with only 3 PAMP stations in service. In this instance the PAMT, in consultation with the COE, will modify the established perimeter air monitoring configuration until the system can be restored to the full minimum set of four PAMP stations. Work will not be permitted continue the next work day until a minimum of 4 stations have been restored. The implementation of the modified configuration will be recorded on the Site map, and the reasons for the equipment outage will be noted in the perimeter air monitoring field report.

5.2 Baseline Air Monitoring

Prior to the disturbance of soil at the Site, air monitoring will be conducted at the project perimeter to establish baseline air quality levels for the primary COCs. Real-time air monitoring will be performed for a period of 5 days for approximately 8 hours a day to establish baseline conditions prior to the start of the intrusive Site RA activities. In addition, one set of confirmatory air samples for VOCs (benzene), PAHs (benzo(a)pyrene and dibenzo(a,h)anthracene) and metals (cobalt) will be collected each day at the prevailing downwind station location. Additional baseline samples will be collected at the exterior of the main entrance lobby of the NJDOL and NJJC buildings to establish baseline conditions. The baseline conditions observed in the NJDOL building will be used to establish baseline conditions at the NJDOT, which is further downwind of the Site than the NJDOL location.

Sampling of interior portions of adjacent buildings is not planned due to interior sources of PAHs and VOCs inside the occupied building and in mechanical rooms supporting the building.

The results of the baseline monitoring will be used for comparison to the perimeter air quality readings obtained during intrusive activities, and specifically to establish background threshold levels of TVOC and PM_{10} for application in triggering alarm and action-level

notifications.

5.3 Real-Time Air Monitoring During Intrusive Activities

TVOC and PM_{10} concentrations and meteorological measurements will be recorded by the air monitoring system along the Site RA perimeter and in front of the NJDOL building entrance during intrusive activities (as defined above). These data measurements will be transmitted continuously in real-time to the database server. The server will maintain the master database and will generate notification of alarm and action levels, which will be communicated to the PAMT by any internet-enabled device such as a PC, tablet, or smartphone. The air monitoring system will also correlate wind-speed and direction to the environmental measurements in real-time, so that the PAMT will be aware of airflow patterns across the Site RA footprint when responding to alarms or other incidents of interest. The air monitoring system will also present real-time information about its own performance and status, eliminating the need for the PAMT to traverse the jobsite to verify operation of the stations. The PAMT will have a dedicated set of hand-held devices (PID and dust monitor, such as a personal data ram) to confirm the readings of the PAMP stations in the event of an alarm condition.

The PAMT, in conjunction with the COE and SHSO, will review the daily weather conditions and if adverse weather conditions are present, the necessity of daily PAMP operations will be determined.

5.4 Confirmatory Air Sampling

Periodic confirmatory air samples for metals: cobalt, PAHs: benzo(a)pyrene and dibenzo(a,h)anthracene, and VOCs: benzene will be collected during baseline air monitoring and then once every five working days during intrusive activities, at a minimum. The baseline survey program and the sampling methods are described above. The day of the week the confirmatory sample is collected will vary each week. The confirmatory sample will be collected from the downwind location or the location that is likely to have the highest concentration of airborne contaminants. The confirmatory samples will be collected for a duration of 10 hours, to approximate the length of the typical work shift.

5.5 Alarm Condition Response Plan

For action level exceedances, the notification of an alarm condition will be based on actual real-time measured values. If an alarm condition occurs, and the resulting alarm can be attributed to activities not associated with soil excavation and Site RA activities (wind blowing dust, idling trucks, etc.), no alarm sampling or response will occur. The procedure for notification of an exceedance of an action level is attached as Appendix C.

Action level exceedance air samples will be collected if an alarm condition occurs as described in the alarm condition response plan below.

5.5.1 TVOC Emission Response Plan for Acute Air Monitoring Action Levels

The real-time PAMP monitoring action level of 1.15 ppm was calculated for

TVOC, as cited above.

1. If instantaneous TVOC readings exceed 1.15 ppm outside the temporary enclosure (as monitored by the Site Health and Safety Officer (SHSO) for the RA contractor), the SSO shall notify the PAMT that VOC emissions are present.

   If instantaneous TVOC readings exceed 1.15 ppm at the project perimeter, the PAMT will immediately notify the SHSO. The PAMT will observe TVOC concentrations for one minute at the location of the exceedance. The PAMT and SSO will attempt to identify the source of the VOC emissions, and the SHSO will also prepare to address the source.

2. If the time weighted average (TWA) perimeter TVOC concentration is sustained above 1.15 ppm for 5 minutes, the PAMT or SHSO will use an instantaneous Draeger tube to determine if benzene is present. If benzene is not present, no action is required by the COE or PAMT. If benzene is present, the PAMT will notify the SHSO to implement the use of emission control measures (i.e., foam, water) and prepare to collect an exceedance sample. The PAMT will continue to observe TVOC concentrations on the real-time monitoring equipment at that location for 15 minutes.

3. If the perimeter TWA TVOC concentration is sustained above 1.15 ppm for an additional 10 minutes (15 minutes total), intrusive activities shall cease. Real-time monitoring and VOC emissions control will continue until the alarm condition is no longer present, per Item 4, below. The PAMT will collect an action level exceedance confirmatory sample at the location of the exceedance for analysis of VOCs. If the NJDOL or NJJC are located downwind of the current work, an additional action level exceedance confirmatory sample will be collected near the entrance to the building. Work procedures will be re-evaluated to lessen emissions, and if applicable, Site RA activities will be updated.

4. When the perimeter TWA TVOC concentration falls below a TWA of 1.15 ppm over 15 minutes, the alarm condition will be deemed to be no longer present, and Site RA intrusive work may resume.

5.5.2 Particulate Monitoring Response Plan for Acute Risk

1. If the instantaneous PM concentration exceeds 150 $\mu g/m^3$ at any of the PAMP stations along the project perimeter, the PAMT will immediately notify the SHSO. The PAMT will observe PM_{10} concentrations for 1 minute at the location of the exceedance. The PAMT, COE and SHSO will attempt to identify the source of the PM_{10} emissions. The SHSO will also begin preparations to address the source. If the source is determined to be caused by activities not related to Site intrusive activities, no further action is needed.

2. Sustained TWA readings over the action level of 150 µg/m^3 for 5 minutes at a PAMP Station requires the RA Contractor to implement measures to control the emissions (i.e. application of water, tarps, plastic sheeting, and clean fill cover). PAMT will continue to monitor the real-time readings for a total of 15 minutes and prepare to collect an exceedance sample.

3. Sustained TWA readings over the action level for 15 minutes at a perimeter monitoring station requires the emission generating activity to cease and engineering controls to continue. The PAMT will collect an action level exceedance confirmatory sample at the location of the exceedance for laboratory analysis of Modified NIOSH 7303 for cobalt and NIOSH Method 5506 for PAHs (benzo(a)pyrene & dibenzo(a,h)anthracene). If the NJDOL or NJJC are located downwind of the current work, an additional action level exceedance confirmatory sample will be collected near the entrance to the building. The project team will confirm that all applicable dust best management practices (BMPs) are being employed. Work activity should focus on lessening fugitive dust emissions being generated. Real-time monitoring and dust control BMPs will continue until the alarm condition is no longer present, per Item 4, below.

4. When the perimeter TWA PM concentration falls below 150 µg/m^3 over a 15-minute TWA, the alarm condition will be deemed to be no longer present, and Site RA intrusive work may resume.

5.5.3 VOC Emission Monitoring for Chronic Risk

Benzene will be monitored for chronic risk by the collection of one confirmatory sample in a SUMMA canister over one 10-hour workday every five days. These confirmatory samples will be analyzed for VOCs by USEPA Method TO-15. The sample will be collected from a prevailing downwind perimeter location, based on daily remedial activities. The results will be compared to the benzene chronic action level (Table 1). Should the respective chronic action levels be exceeded in a confirmatory sample, the Site RA activities and the operation of the temporary enclosure will be re-evaluated to lessen VOC emissions at the project perimeter. Actions taken by the SHSO to maintain the perimeter TVOC levels below the respective chronic action levels may include use of vapor-controlling foam, adjustments to the temporary enclosure negative pressure, or the use of wind screens. The goal is to have average concentrations for these parameters over the course of the Site RA implementation, based on the confirmatory samples, less than the chronic action levels for benzene.

5.5.4 PAH and Metals Emission Monitoring for Chronic Risk

Particulates will be monitored for chronic risk through collection of confirmatory samples over one 10-hour workday every five days. Samples will be laboratory analyzed by Modified NIOSH 7303 for cobalt and NIOSH Method 5506 for PAHs (benzo(a)pyrene & dibenzo(a,h)anthracene). The samples will be collected from a prevailing downwind perimeter location, based on daily remedial activities. The

results will be compared to the cobalt chronic action levels (Table 1). Should the respective chronic action levels be exceeded in a confirmatory sample, the Site RA activities and the operation of the temporary enclosure will be re-evaluated to lessen particulate emissions to the project perimeter. Actions taken by the SHSO to maintain the particulate levels below the respective chronic action levels may include use of water mists, adjustments to the temporary enclosure negative pressure, or the use of wind screens. The goal is to have average concentrations for cobalt over the course of the Site RA implementation, based on the confirmatory samples, less than the chronic action levels for cobalt.

5.6 Odor Evaluation

Control of odors and odor suppression is a key issue during soil excavation operations with the handling of contaminated material at MGP remediation sites. Although several methods are available to help control and suppress odors, it is difficult to completely prevent odors from leaving the Site RA perimeter and potentially impacting the surrounding community. The community at this location consists of primarily office space with heavy pedestrian traffic. Odors generated during Site RA activities have the potential to impact these receptors. To mitigate possible odors from impacting the surrounding community a temporary enclosure, under negative pressure and an air scrubbing carbon unit will be installed and utilized during intrusive activities and for soil stockpiling purposes.

The RA Contractor performing the soil excavation activities has been directed to aggressively control odors. Odor suppression measures will include the use of a temporary enclosure with additional controls from foam suppressant, drip neutralizer, misting, plastic or tarps, or applying a clean fill cover. The RA Contractor has been directed by PSE&G to utilize any or all of these measures when odors are present, being more aware when excavating at or near the Site perimeter. In the event that these measures fail to adequately control odors, Site RA activities will be suspended, and the situation will be re-evaluated.

5.6.1 Odor Assessment Team

Three individuals comprise the Odor Assessment Team (OAT) and will be responsible for assessing the effectiveness of odor control measures being implemented at the Site – the PAMT, ACOE, or the COE and the RA Contractor's Project Manager. Odor assessments will be performed by these individuals or their designees. Odor assessments will be performed by a minimum of three personnel and documented on the Odor Assessment Form provided in Appendix B.

5.6.2 Odor Assessment Locations

The odor assessments will be conducted, along the perimeter of the Site footprint as further discussed in Section 5.6.5.

Should odors be detected at these locations, the odor assessment area may be expanded, at the discretion of the OAT. Any additional locations surveyed by the team will be noted on the Odor Assessment Form provided in Appendix B.

5.6.3 Odor Assessment Classifications

Odors will be classified by the OAT using the following classifications during Site odor assessments.

a. "0" – There are odor-generating activities on the Site, but there is no impact to the community. Odor is not detectable off-site, or very minimal and very infrequent.

b. "1" – Off-site odors are present, but the odors are not strong, not steady, and there is minimal impact to the community, or the odors are not noticed by the community. This is an indication that odor control measures at the Site are adequate and activities may proceed.

c. "2" – Odors are stronger than a "1" and relatively steady. The community is not necessarily aware of the odors, but it is agreed by the odor assessment team that community recognition is inevitable and additional odor control measures must be implemented. A follow-up tour must be conducted after implementation of additional odor control measures.

d. "3" – A "2" condition still exists after increased odor control measures, odors are very strong and the community is aware of and reacting to the odors. Odor-generating activities must cease, and full odor control measures be implemented. The situation must be re-evaluated prior to re- initiating odor-generating activities.

5.6.4 Baseline Odor Assessment

A baseline odor assessment will be performed by the OAT to familiarize themselves with the odor assessment locations and protocol, and to generate an agreed upon odor profile. The baseline assessment will consist of a tour of the odor assessment locations identified above, and completion of the Odor Assessment Form. Several baseline assessments may be performed, both prior to and during odor-generating activities on the Site, for the OAT to create an agreed upon odor profile.

5.6.5 Ongoing Odor Assessments

The PAMT will be responsible for determining if an odor assessment is necessary during odor-generating activities, in addition, odor assessments will be conducted daily at the beginning of remedial work, and the frequency may be altered based on observations. If site-related odors are detected at the Site RA perimeter by the PAMT, an odor assessment will immediately be conducted by the OAT. The odor assessment will be documented on the Odor Assessment Form provided in Appendix B. If the odor classification is a "0" or "1", activities will continue. If the odor classification is a "2", odor control measures will be implemented, and a follow-up odor assessment performed. If the odor classification is a "3", activities will cease

immediately, and full odor control measures implemented.

Additional odor assessments may be conducted at the discretion of any member of the OAT.

6.0 QUALITY ASSURANCE

6.1 Calibration

Monitoring instruments will be calibrated on a routine basis in accordance with the manufacturer's specifications. Instrument calibration will be documented on calibration sheets. Monitoring instruments will be calibrated or zeroed before each shift. Calibration checks may be used during the day to confirm instrument accuracy.

6.2 Operations

PAMP instruments will be operated in accordance with the manufacturer's specifications. The PAMT will maintain manufacturer's literature, including an operation manual, for each piece of monitoring equipment on Site.

6.3 Laboratory Quality Control

Laboratory QA/QC will be in accordance with the method requirements. Sample collection, holding times, calibration procedures, and handling times will be in accordance with "The Compendium of Methods for the Determination of Toxic Organic Compounds in the Ambient Air," USEPA Document No. EPA/600/4-89/017 and the requirements of the appropriate method.

6.4 Documentation

Each real-time monitoring PAMP station will be inspected by the PAMT at the beginning and end of each work shift at a minimum, and when and if the integrated air monitoring system reports any problems with, or lack of data transmission from, the PAMP stations. In addition, alarms and subsequent source evaluations and corrective measures will be documented. In addition to the above, the PAMT will maintain a daily air monitoring log that will include a general description of the Site activities, a detailed description of Site RA activities during an alarm condition, and potential sources of emissions causing such alarms. The environmental and meteorological data will be downloaded from the database server by the PAMT at the end of each work week. The laboratory reports for confirmatory samples from the analytical laboratory will be maintained on Site by the PAMT and COE. Following completion of the PAMP Program, a Final Perimeter Air Monitoring Report will be prepared to document the monitoring and sampling activities, results, and field and laboratory QA/QC procedures that were implemented during the Site RA.

FIGURE 1

Remediation Area Plan

Figure 1 - Remediation Area Map

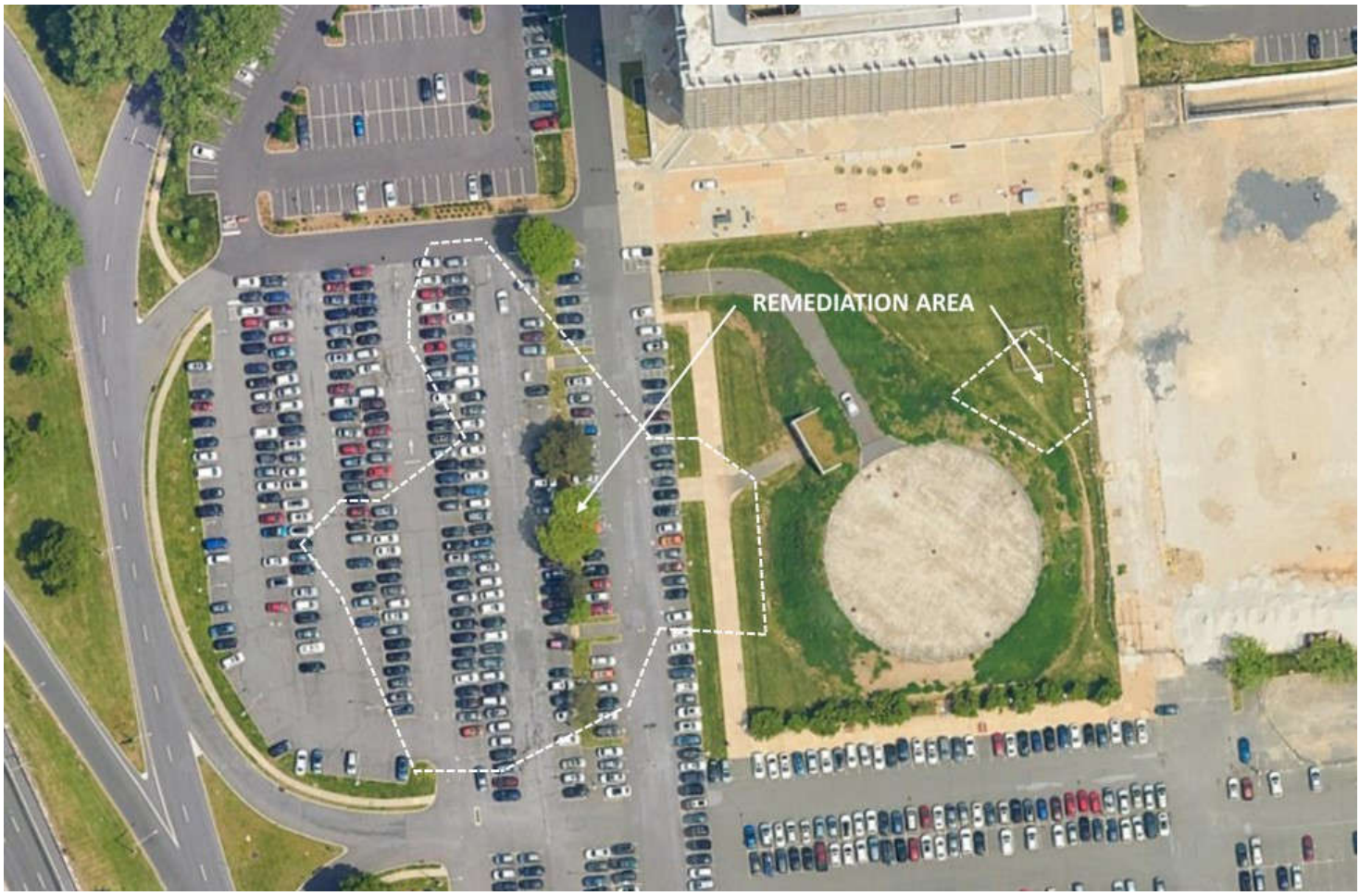
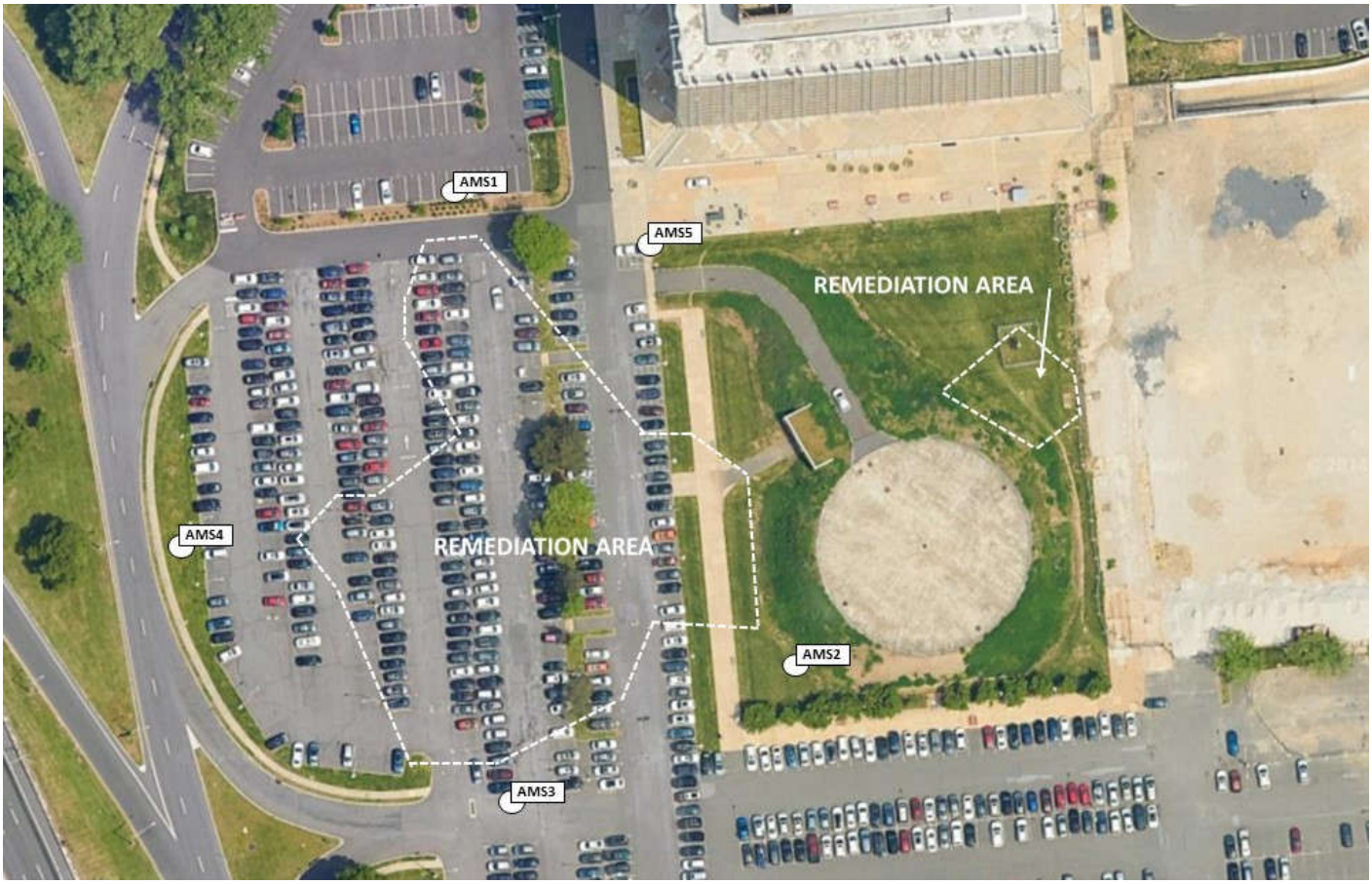


FIGURE 2

PAM Station Location Plan

Figure 2 - PAM Station Location Plan



AMS1 Example Station Location and Designation

APPENDIX A

Perimeter Air Monitoring Action Level Calculations

Perimeter Air Monitoring Action Level Calculations

TRIUMVIRATE ENVIRONMENTAL

Table 3a. PSEG Former South Warren Street MGP PM_{10} Action Levels (Metals & PAHs)

Based on the available data for screening levels for the specified Metals & PAHs , the indicated allowable particulate action levels are significantly greater than typical generic standards or guidelines for particulates.

Parameter	Measured Concentration in Soil[a]		Site Specific Screening Level[bc]	Calculated PM_{10} to reach Individual AL[d]
	mg/kg	µg/µg	µg/m³	µg/m³
Metals				
Aluminum	1.17E+04	1.17E-02	1.68E+01	1.44E+03
Antimony	9.37E+00	9.37E-06	1.01E+00	1.08E+05
Arsenic	1.12E+01	1.12E-05	5.05E-02	4.51E+03
Barium	2.88E+02	2.88E-04	1.68E+00	5.82E+03
Beryllium	9.00E-01	9.00E-07	6.74E-02	7.48E+04
Cadmium	3.19E+00	3.19E-06	3.37E-02	1.06E+04
Calcium	3.03E+04	3.03E-02	N/A	N/A
Chromium (VI)	1.37E+00	1.37E-06	3.37E-01	2.46E+05
Chromium	2.59E+01	2.59E-05	N/A	N/A
Cobalt	1.18E+01	1.18E-05	2.02E-02	1.71E+03
Copper	1.76E+02	1.76E-04	N/A	N/A
Iron	5.23E+04	5.23E-02	N/A	N/A
Lead	6.64E+02	6.64E-04	3.00E-01	4.52E+02
Magnesium	5.22E+03	5.22E-03	N/A	N/A
Manganese	4.70E+02	4.70E-04	1.68E-01	3.58E+02
Mercury	3.12E+00	3.12E-06	1.01E+00	3.24E+05
Nickel	2.16E+01	2.16E-05	3.03E-01	1.40E+04
Potassium	5.81E+03	5.81E-03	N/A	N/A
Selenium	3.27E+00	3.27E-06	6.74E+01	2.06E+07
Silver	1.53E+00	1.53E-06	N/A	N/A
Sodium	2.14E+03	2.14E-03	N/A	N/A
Sulfur	3.94E+03	3.94E-03	N/A	N/A
Vanadium	5.78E+01	5.78E-05	3.37E-01	5.84E+03
Zinc	5.28E+02	5.28E-04	N/A	N/A
Cyanide	6.35E+01	6.35E-05	2.70E+00	4.25E+04

Notes:

(a) Based on soil sampling data provided by PS&S. Values used here for each parameter are the 95th Percentile of samples collected.

(b) EPA Risk Based Screening Levels: "Regional Screening Levels for Chemical Contaminants at Superfund Sites", Calculator for Site-specific Resident/Worker Risk-Based Screening Levels for Ambient Air. https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search

(c) Exposure Basis for this project: 10 hours/day, 5 days per week, 260 work days per year

(d) Ratio of individual action level to soil concentration is used to calculate the PM_{10} concentration needed to reach the individual action levels of the parameters.

(e) An EPA RSL is not available for lead. Instead, the National Ambient Air Quality Standard for lead is used, per the EPA's recommendation.

N/A - No screening level is available for this parameter.

Perimeter Air Monitoring Action Level Calculations

TRIUMVIRATE ENVIRONMENTAL

Table 3a. PSEG Former South Warren Street MGP PM_{10} Action Levels (Metals & PAHs)

Based on the available data for screening levels for the specified Metals & PAHs , the indicated allowable particulate action levels are significantly greater than typical generic standards or guidelines for particulates.

Parameter	Measured Concentration in Soil[a]		Site Specific Screening Level[bc]	Calculated PM_{10} to reach Individual AL[d]
	mg/kg	µg/µg	µg/m³	µg/m³
PAHs				
1,1'-Biphenyl	4.69E+01	4.69E-05	1.35E+00	2.88E+04
1,2,4,5-Tetrachlorobenzene	9.90E-03	9.90E-09	N/A	N/A
2,4-Dimethylphenol	6.45E+00	6.45E-06	N/A	N/A
2,4-Dinitrotoluene	1.82E-02	1.82E-08	3.73E+00	2.05E+08
2-Chloronaphthalene	1.38E-02	1.38E-08	N/A	N/A
2-Methylnaphthalene	7.77E+01	7.77E-05	N/A	N/A
2-Methylphenol (o-Cresol)	2.12E+00	2.12E-06	2.02E+03	9.52E+08
3&4-Methylphenol (m, p - Cresol)	5.26E+00	5.26E-06	2.02E+03	3.84E+08
4-Chloroaniline	7.73E-02	7.73E-08	N/A	N/A
4-Nitroaniline	1.25E-01	1.25E-07	2.02E+01	1.62E+08
Acenaphthene	1.01E+02	1.01E-04	N/A	N/A
Acenaphthylene	7.08E+01	7.08E-05	N/A	N/A
Acetophenone	6.77E-02	6.77E-08	N/A	N/A
Anthracene	3.05E+02	3.05E-04	N/A	N/A
Benzaldehyde	8.86E-02	8.86E-08	N/A	N/A
Benzo(a)anthracene	2.04E+02	2.04E-04	5.54E-01	2.72E+03
Benzo(a)pyrene	2.14E+02	2.14E-04	5.54E-02	2.58E+02
Benzo(b)fluoranthene	1.96E+02	1.96E-04	5.54E-01	2.82E+03
Benzo(g,h,i)perylene	1.10E+02	1.10E-04	N/A	N/A
Benzo(k)fluoranthene	9.15E+01	9.15E-05	5.54E+00	6.06E+04
bis(2-Ethylhexyl)phthalate	1.27E+00	1.27E-06	1.38E+02	1.09E+08
Butyl benzyl phthalate	5.88E-02	5.88E-08	N/A	N/A
Carbazole	6.76E+01	6.76E-05	N/A	N/A
Chrysene	2.03E+02	2.03E-04	5.54E+01	2.74E+05
Dibenzo(a,h)anthracene	3.25E+01	3.25E-05	5.54E-02	1.70E+03
Dibenzofuran	1.68E+02	1.68E-04	N/A	N/A
Di-n-butyl phthalate	7.17E-02	7.17E-08	N/A	N/A
Fluoranthene	5.81E+02	5.81E-04	N/A	N/A
Fluorene	1.86E+02	1.86E-04	N/A	N/A
Indeno(1,2,3-cd)pyrene	1.10E+02	1.10E-04	5.54E-01	5.05E+03
Isophorone	3.88E-01	3.88E-07	6.74E+03	1.74E+10
Naphthalene	4.75E+02	4.75E-04	9.77E+00	2.06E+04
N-Nitroso-di-n-propylamine	1.43E-01	1.43E-07	1.66E-01	1.16E+06
N-Nitrosodiphenylamine	4.14E-01	4.14E-07	1.28E+02	3.09E+08
Phenanthrene	6.36E+02	6.36E-04	N/A	N/A
Phenol	4.94E+00	4.94E-06	6.74E+02	1.36E+08
Pyrene	4.81E+02	4.81E-04	N/A	N/A

Notes:

(a) Based on soil sampling data provided by PS&S. Values used here for each parameter are the 95th Percentile of samples collected.

(b) EPA Risk Based Screening Levels: "Regional Screening Levels for Chemical Contaminants at Superfund Sites", Calculator for Site-specific Resident/Worker Risk-Based Screening Levels for Ambient Air. https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search

(c) Exposure Basis for this project: 10 hours/day, 5 days per week, 260 work days per year

(d) Ratio of individual action level to soil concentration is used to calculate the PM_{10} concentration needed to reach the individual action levels of the parameters.

(e) An EPA RSL is not available for lead. Instead, the National Ambient Air Quality Standard for lead is used, per the EPA's recommendation.

N/A - No screening level is available for this parameter.

Perimeter Air Monitoring Action Level Calculations

TRIUMVIRATE ENVIRONMENTAL

Table 3b. PSEG Former South Warren Street MGP PM_{10} Action Levels (PCBs)

Based on the available data for screening levels for the specified contaminants. the indicated allowable particulate action levels are significantly greater than typical generic standards or guidelines for particulates.

Parameter	Measured Concentration in Soil[a]		Specific Screening Level [b,c]	Calculated PM_{10} to reach Individual AL[d]
	mg/kg	µg/µg	µg/m³	µg/m³
PCBs				
Aroclor 1248	4.09E-02	4.09E-08	4.13E-01	1.01E+07
Aroclor 1254	5.99E-01	5.99E-07	4.13E-01	6.89E+05
Aroclor 1260	2.93E-01	2.93E-07	4.13E-01	1.41E+06
Aroclor 1262	6.07E-02	6.07E-08	N/A	N/A

Notes:

(a) Based on soil sampling data provided by PS&S. Values used here for each parameter are the 95th Percentile of samples collected.

(b) EPA Risk Based Screening Levels: "Regional Screening Levels for Chemical Contaminants at Superfund Sites", Calculator for Site-specific Worker Risk-Based Screening Levels for Ambient Air
https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search

(c) Exposure Basis for this project: 5 days/week; 10 hours/day, 260 work days, 12 months

(d) Ratio of individual action level to soil concentration is used to calculate the PM_{10} concentration needed to reach the individual action levels of the parameters.

N/A - No screening level is available for this parameter.

Perimeter Air Monitoring Action Level Calculations

Table 3c. PSEG Former South Warren Street MGP VOC Action Levels

Based on normailzed proportions of the parameters and on site-specific screening levels, Benzene is the limiting parameter.

Parameter	Molec. Wt.	Measured Concentration in Soil [a]		Site Specific Screening Level [b,c]		Calculated TVOC to reach individual AL [d]
		µg/kg	Normalized % of TVOC [d]	µg/m³	ppb	ppm
1,1,1-Trichloroethane	133	3030.0	0.01%	1.68E+04	3.08E+03	2.23E+04
2-Butanone (MEK)	72	16600.0	0.08%	1.68E+04	5.70E+03	7.54E+03
2-Hexanone	100	15300.0	0.07%	1.01E+02	2.47E+01	3.54E+01
Acetone	58	25150.0	0.11%	N/A	N/A	N/A
Benzene [e]	78	255600.0	1.16%	4.26E+01	1.33E+01	1.15E+00
Carbon Disulfide	76	3880.0	0.02%	2.36E+03	7.58E+02	4.29E+03
Chlorobenzene	113	2865.0	0.01%	1.68E+02	3.65E+01	2.80E+02
cis-1,2-Dichloroethylene	97	5260.0	0.02%	1.35E+02	3.40E+01	1.42E+02
Cyclohexane	84	4095.0	0.02%	2.02E+04	5.87E+03	3.15E+04
Ethylbenzene	106	52100.0	0.24%	1.33E+02	3.06E+01	1.29E+01
Isopropylbenzene	120	14000.0	0.06%	1.35E+03	2.75E+02	4.31E+02
Methyl Acetate	74	9065.0	0.04%	N/A	N/A	N/A
Methylcyclohexane	98	6145.0	0.03%	N/A	N/A	N/A
Methylene chloride	85	16650.0	0.08%	2.02E+03	5.82E+02	7.67E+02
Styrene	104	78755.0	0.36%	3.37E+03	7.91E+02	2.21E+02
Tetrachloroethylene	166	3640.0	0.02%	1.35E+02	1.99E+01	1.20E+02
Toluene	92	309550.0	1.41%	1.68E+04	4.46E+03	3.16E+02
Xylene-Total	106	428000.0	1.95%	3.37E+02	7.76E+01	3.98E+00
Other		20721029.7	94.31%			

Notes:

(a) Based on soil sampling data provided by PS&S. Values used here for each parameter are the 95th Percentile of samples collected.

(b) EPA Risk Based Screening Levels: "Regional Screening Levels for Chemical Contaminants at Superfund Sites", Calculator for Site-specific Residential Risk-Based Screening Levels for Ambient Air

https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search

(c) Exposure Basis for this project: Outdoor worker, 5 days/week, 10 hours/day; 260 work days, 12 months

(d) Normalized percentages of soil concentrations are used to calculate the TVOC values equal to the individual action levels of each parameter.

N/A - No screening level is available for this parameter.

(e) Benzene is present in soil with the lowest calculated action level of the chemicals listed with site specific screening levels. Benzene will serve as a surrogate for other less toxic site related contaminants that may be present at lower concentrations to demonstrate compliance with health based air criteria.

APPENDIX B

Odor Assessment Form

PSE&G Odor Assessment Form

	Observer Location	Wind			Time	Rating	Odor Description/Comments
Parameter	Description of location (Use streets landmarks, addresses, etc.)	Direction (wind blows from)	Orientation (Downwind/ Upwind)	Approx. Wind Speed		(0-3 Rating)	Description of odors (e.g. strength & persistence), other source(s) of odors, variable weather, etc.
Field Observations							

Additional Notes:	**Sketch/Map**
Relevant work activities occurring on-site during odor assessment:	
Odor Assessment Team Members:	

APPENDIX C

Procedure for Notification of an Exceedance of an Action Level

TVOC Emission Response Plan for Real-Time Air Monitoring Action Levels	
1	If the instantaneous TVOC concentration exceeds 1.15 ppm at any of the PAMP stations along the project perimeter, the PAMT will attempt to identify the source of the VOC emissions. If the source is found to be caused by Site intrusive activities, the PAMT will notify the COE and SHSO so the SHSO can prepare to address the source. If the source is determined to be caused by activities not related to Site intrusive activities, no further action is needed.
2	If the time weighted average (TWA) perimeter TVOC concentration is sustained above 1.15 ppm for 5 minutes, the PAMT or SHSO will use an instantaneous Draeger tube to determine if benzene is present. If benzene is not present, no action is required by the COE or PAMT. If benzene is present, the PAMT will notify the SHSO to implement the use of emission control measures (i.e., foam, water) and prepare to collect an exceedance sample. The PAMT will continue to observe TVOC concentrations on the real-time monitoring equipment at that location for 15 minutes
3	If the perimeter TWA TVOC concentration is sustained above 1.15 ppm for an additional 10 minutes (15 minutes total), intrusive activities will cease. Real-time monitoring and VOC emissions control will continue until the alarm condition is no longer present, per Item 4, below. The PAMT will collect an action level exceedance confirmatory sample at the location of the exceedance for analysis of VOCs. Work procedures will later be re- evaluated to lessen emissions, and if applicable, Site RA activities will be updated.
4	When the perimeter TWA TVOC concentration falls below 1.15 ppm over 15 minutes TWA, the alarm condition will be deemed to be no longer present, and Site RA intrusive work may resume.

Particulate Monitoring Response Plan for Real-Time Air Monitoring Action Levels	
1	If the instantaneous PM concentration exceeds 150 µg/m^3 at any of the PAMP stations along the project perimeter, the PAMT will attempt to identify the source ofthe PM emissions. If the source is found to be caused by Site intrusive activities, the PAMT will notify the COE and SHSO so the SHSO can prepare to address the source. If the source is determined to be caused by activities not related to Site intrusive activities, no further action is needed.
2	Sustained TWA readings over the action level of 150 µg/m^3 for 5 minutes at a PAMP Station requires the RA Contractor to implement measures to control the emissions (i.e. application of water, tarps, plastic sheeting, and clean fill cover). PAMT will monitor the real-time readings.
3	Sustained TWA readings over the action level for 15 minutes at a perimeter monitoring station requires the emission generating activity to cease and engineering controls to continue. The project team will confirm that all applicable dust best management practices (BMPs) are being employed. Work activity should focus on lessening fugitive dust emissions being generated.
4	When the perimeter TWA PM concentration falls below 150 µg/m^3 over a 15 minutes TWA, the alarm condition will be deemed to be no longer present, and Site RA intrusive work may resume.

APPENDIX D

HVAC Mechanical Engineering Survey Reports

Client: PSE&G (Trenton Department Justice Complex)
Project: HVAC Assessment for Odor Elimination during Planned Remediation Project
Project #: 01315.0922
Survey: 12/07/2023

Notes:

Department of Justice Complex:

- Description:
  - 8-Story office building including open office, main atrium, and courtrooms with mechanical penthouse on roof and basement
- HVAC:
  - **AHU-27**: Located at basement mechanical room serving floors 5E and 7E Tax Court. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 120"x36" Outdoor air intake at the back of the unit, fed from a shared 416”x108” intake for all basement units located on grade. Shared intake is facing North toward Market St.
    - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (24-24x24, 4-12x24).

  - **AHU-28**: Located at basement mechanical room serving P1 level Atrium floor vents (window wash), P1 Level Ceiling VAV’s and North side only window wash at the 3rd floor ceiling level. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 120"x30" Outdoor air intake at the back of the unit, fed from a shared 416”x108” intake for all basement units located on grade. Shared intake is facing North toward Market St.
      Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

  - **AHU-29**: Located at basement mechanical room serving the 4th floor conference room. Variable Volume w/VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 120"x24" Outdoor air intake at the back of the unit, fed from a shared 416”x108” intake for all basement units located on grade. Shared intake is facing North toward Market St.
    - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (8-24x24, 6-12x24).

  - **AHU-30**: Located at basement mechanical room serving the P1 Atrium Ceiling VAV’s at the 3rd Floor Level and window wash, west side only, at the 3rd floor level. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 120"x36" Outdoor air intake at the back of the unit, fed from a shared 416”x108” intake for all basement units located on grade. Shared intake is facing North toward Market St.

- Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-31**: Located at basement mechanical room serving the floor 5E Supreme Court. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 24"x30" Outdoor air intake at the back of the unit, fed from a shared 416”x108” intake for all basement units located on grade. Shared intake is facing North toward Market St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (3-24x24).

- **AHU-01**: Located at penthouse mechanical room serving the main atrium. Constant Volume, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 144"x108" Outdoor air intake at the back of the unit facing South toward Bridge St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (24-24x24, 4-12x24).

- **AHU-02**: Located at penthouse mechanical room serving Floors 1 & 2 section A. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 132"x72" Outdoor air intake at the back of the unit facing South toward Bridge St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-03**: Located at penthouse mechanical room serving Floors 3 & 4 section A. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 132"x66" Outdoor air intake at the back of the unit facing South toward Bridge St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-04**: Located at penthouse mechanical room serving Floors 5 & 6 section A. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 132"x66" Outdoor air intake at the back of the unit facing South toward Bridge St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-05**: Located at penthouse mechanical room serving Floors 7 & 8 section A. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 132"x72" Outdoor air intake at the back of the unit facing South toward Bridge St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-06**: Located at penthouse mechanical room serving Floors 2,3, & 4 section B. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 144"x72" Outdoor air intake at the back of the unit facing South toward Bridge St.
    - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (24-24x24, 4-12x24).

- **AHU-07**: Located at penthouse mechanical room serving Floors 5 & 6 section B. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 132"x66" Outdoor air intake at the back of the unit facing South toward Bridge St.
    - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-08**: Located at penthouse mechanical room serving Floors 7 & 8 section B. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 132"x72" Outdoor air intake at the back of the unit facing South toward Bridge St.
    - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-09**: Located at penthouse mechanical room serving P1 West End sections A & B. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 108"x86" Outdoor air intake at the back of the unit facing South toward Bridge St.
    - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (8-24x24, 2-12x24).

- **AHU-10**: Located at penthouse mechanical room serving 1st Floor Cafeteria. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 120"x96" Outdoor air intake at the back of the unit facing South toward Bridge St.
    - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (24-24x24, 4-12x24).

- **AHU-13**: Located at penthouse mechanical room serving Floors 1 & 2 section C. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 118"x64" Outdoor air intake at the back of the unit facing East toward S Broad St.
    - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (8-24x24, 6-12x24).

- **AHU-14**: Located at penthouse mechanical room serving Floors 3 & 4 section C. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 132"x66" Outdoor air intake at the back of the unit facing West toward S Broad St.
    - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-15**: Located at penthouse mechanical room serving Floors 5 & 6 section C. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 132"x66" Outdoor air intake at the back of the unit facing East toward S Broad St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-16**: Located at penthouse mechanical room serving Floors 7 & 8 section C. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 132"x72" Outdoor air intake at the back of the unit facing East toward S Broad St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-17**: Located at penthouse mechanical room serving Floors 1 & 2 section D. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 132"x72" Outdoor air intake at the back of the unit facing East toward S Broad St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-18**: Located at penthouse mechanical room serving Floors 3 & 4 section D. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 132"x72" Outdoor air intake at the back of the unit facing East toward S Broad St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-19**: Located at penthouse mechanical room serving Floors 5 & 6 section D. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 132"x72" Outdoor air intake at the back of the unit facing East toward S Broad St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-20**: Located at penthouse mechanical room serving Floors 7 & 8 section C. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 132"x72" Outdoor air intake at the back of the unit facing East toward S Broad St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (15-24x24, 3-12x24).

- **AHU-21**: Located at penthouse mechanical room serving P1 North End. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 108"x54" Outdoor air intake at the back of the unit facing east toward S Broad St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (8-24x24, 2-12x24).

- **AHU-24**: Located at penthouse mechanical room serving the Atrium North side. Constant Volume, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 96"x144" Outdoor air intake at the back of the unit facing East toward S Broad St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (24-24x24, 4-12x24).

- **AHU-25**: Located at penthouse mechanical room serving the Supreme Court Office 8M & 8B. Variable Volume w/ VAV system, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 120"x60" Outdoor air intake at the back of the unit facing South toward Bridge St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (8-24x24, 6-12x24).

- **AHU-26**: Located at penthouse mechanical room serving the Supreme Court. Constant Volume, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
  - 72"x36" Outdoor air intake at the back of the unit facing East toward S Broad St.
  - Approximate 52” Filter AHU section contains a wall of 2” disposable pleated filters and 21” bag filters (3-24x24).

- **HV-1**: Located at penthouse mechanical room serving the Kitchen make-up air hood. Constant Volume, 100% OA, Hot Water Heating only
  - 60"x60" Outdoor air intake at the back of the unit facing South toward Bridge St.
  - 2” disposable pre filter system (unable to get quantities at time of visit).

- **HV-2**: Located in the P1 Mechanical Room serving the P1 Mechanical Room. Constant Volume, 100% OA, Hot Water Heating only
  - Outdoor air intake duct (Approximate size, 56”x24”) terminating with (gooseneck) near new generator installation location facing West toward S Broad St.
  - 2” disposable pre filter system (unable to get quantities at time of visit)

- **HV-4**: Located at basement mechanical room serving the Atrium entrance. Constant Volume, 100% OA, Hot Water Heating only
  - Outdoor air intake at the back of the unit, fed from a shared 416”x108” intake for all basement units located on grade. Shared intake is facing North toward Market St.
  - 2” disposable pre filter system (unable to get quantities at time of visit)

General Building Notes:

- None of the windows within the building are operable.
- Chilled and hot water is provided from Vicinity and not produced on site, existing cooling tower and chiller installations are abandoned.
- AHU-11, AHU-12, AHU-22,& AHU-23 all serve separate internal staircases within the building, under normal operation these units do not run but have the capability to operate, all have intakes at the top floor mechanical room.
- HV-3 was recently replaced and serves the Security check at the atrium level ground floor, this unit has an OA intake, but is sealed and only operates as a recirculating system.
- All pleated filters are changed 4x per year, all bag filters changed 2x per year.

- All AHU's have a temporary purge capability to exhaust air from space to be made up with new treated OA from AHU.
- All spaces measure $C0_2$ in return ducts and have capability to modulate OA quantities via demand-controlled ventilation.
- Outside air intakes at both West and North ends of the building roof provide Make-up/ventilation air for the penthouse electrical/generator rooms only, work in conjunction with electrical room/generator room exhaust fans.
- Supply fans (4) within the penthouse mechanical room are designed/have capability to provide outside air to the elevator machine rooms. These fans have their intakes at the penthouse roof level, however fans do not normally operate, instead replaced with small split system AC units.
- New outdoor generators are in the process of being installed on grade at building west end. Generators already installed but not yet connected, existing generators in the penthouse to be removed.
- Carbon filters have been pre-purchased for all mechanical systems with fresh air intakes at ground level (AHU-26, AHU-27, AHU-28, AHU-29, AHU-30, AHU-31, HV-4). Filters intended to be installed at entrance of OA plenums (x2) 102"x96" & 82"x96".
- VFD/motor upgrades on AHU are currently ongoing, estimated 50% have been replaced with past 5-7 years.
- Building in currently in design phase of planned HVAC upgrade to include replacement of all mechanical systems, including AHU's, VAV, ductwork, piping, etc. Construction expected to begin within the next 2-4 years.

Justice Building Photos

Fresh Air Intake for all ground floor Mechanical systems

Typical Entrance into Ground Floor Outside Air Plenum (location where carbon filters plan to be installed)

Typical AHU Outside Air Intake damper (Inside of AHU)

Typical AHU pleated filter rack (pre-filter)

Typical AHU Outside Air Intake At Roof Level

Typical AHU Outside Air Intake At Roof Level (cont.)

HV-2 Fresh Air Intake

Client: PSE&G (Trenton Department of Labor & Department of Taxation buildings)
Project: HVAC Assessment for Odor Elimination during Planned Remediation Project
Project #: 01315.0922
Survey: 11/21/2023

Notes:

Department of Labor Building:

- Description:
  - 13-Story office building (floors 2-13 open office) with mechanical penthouse on roof
- HVAC:
  - **AHU-03**: Located at roof penthouse serving the Noth and East sides of floors 8-13. Constant Volume, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 210"x210" Outdoor air louver with weather hood connected directly to rear of unit. Louver is facing East toward Lincoln Hwy.
    - 88” Pre-Filter AHU section contains a wall of 4” disposable filters (35-24x24).
  - **AHU-06**: Located at roof penthouse serving the South and West sides of floors 8-13. Constant Volume, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 244"x62" Outdoor air louver connected directly to rear of unit. Louver is facing North toward the Department of Taxation building.
    - 88” Pre-Filter AHU section contains wall of 4” disposable filters (35-24x24, 7-12x24)
  - **AHU-01**: Located on the 1st floor lower-level mechanical room serving the North and East sides of floors 1-7. Constant Volume, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 216"x96" Outdoor air louver connected directly to rear of unit. Louver is facing South toward the parking lot.
    - 88” Pre-Filter AHU section contains wall of 4” disposable filters (35-24x24, 7-12x24)
  - **AHU-02**: Located on the 1st floor lower-level mechanical room serving the South and West sides of floors 1-7. Constant Volume, Recirculating with Economizing capability, Chilled Water Cooling, Hot Water Heating, and separate external utility type return fan
    - 216"x96" Outdoor air louver connected directly to rear of unit. Louver is facing South toward the parking lot.
    - Pre-Filter AHU section contains wall of 2” disposable filters (35-24x24, 7-12x24) located at the end of the unit (48” from exterior wall)
  - **AHU-16**: Located on the 1st floor lower-level mechanical room providing primary air to the East side perimeter induction units throughout the building. 100 % outside air, Constant Volume, Chilled Water Cooling, and Hot Water Heating.
    - Outdoor air is pulled from shared louver opening located within the building overhang on the first floor facing east towards Lincoln Hwy. Exact dimensions were difficult to obtain, it is estimated the entire shared louver is approximately 36” wide and the entire length of the building’s east face. It is possible there are sections of this louver

that are blocked off and not used but because of its location this was not able to be determined.
- Pre-Filter AHU section contains 4-16x20 and 16-16x25 - 2" disposable filters.

- **AHU-17**: Located on the 1st floor lower-level mechanical room providing primary air to the South side perimeter induction units throughout the building. 100 % outside air, Constant Volume, Chilled Water Cooling, and Hot Water Heating.
  - Outdoor air is pulled from shared louver opening located within the building overhang on the first floor facing east towards Lincoln Hwy. Exact dimensions were difficult to obtain, it is estimated the entire shared louver is approximately 36" wide and the entire length of the building's east face. It is possible there are sections of this louver that are blocked off and not used but because of its location this was not able to be determined.
  - Pre-Filter AHU section contains 30-20x20 – 2" disposable filters.

- **AHU-14**: Located on the 1st floor upper-level mechanical room providing primary air to the West side induction units throughout the building. 100 % outside air, Constant Volume, Chilled Water Cooling, and Hot Water Heating.
  - Outdoor air is pulled from shared louver opening located within the building overhang on the first floor facing west towards the Delaware river. Exact dimensions were difficult to obtain, it is estimated the entire shared louver is approximately 36" wide and the entire length of the building's west face. It is possible there are sections of this louver that are blocked off and not used but because of its location this was not able to be determined.
  - Pre-Filter AHU section contains 20-16x25 - 2" disposable filters.

- **AHU-15**: Located on the 1st floor upper-level mechanical room providing primary air to the South side induction units throughout the building. 100 % outside air, Constant Volume, Chilled Water Cooling, and Hot Water Heating.
  - Outdoor air is pulled from shared louver opening located within the building overhang on the first floor facing west towards the Delaware river. Exact dimensions were difficult to obtain, it is estimated the entire shared louver is approximately 36" wide and the entire length of the building's west face. It is possible there are sections of this louver that are blocked off and not used but because of its location this was not able to be determined.
  - Pre-Filter AHU section contains 20-16x25 – 2" disposable filters.

- **AHU-10**: Located at 1st floor upper-level mechanical room providing makeup air to the kitchen. 100 % outside air, Constant Volume, Chilled Water Cooling, and Hot Water Heating.
  - Outdoor air is pulled from shared louver opening located within the building overhang on the first floor facing west towards the Delaware river. Exact dimensions were difficult to obtain, it is estimated the entire shared louver is approximately 36" wide and the entire length of the building's west face. It is possible there are sections of this louver that are blocked off and not used but because of its location this was not able to be determined.
  - Pre-Filter AHU section contains 10-16x25, 5-16x20 – 2" disposable filters.

- **AHU-8**: Located on the 1st floor upper-level mechanical room serving the cafeteria area. Recirculating, Constant Volume, Chilled Water Cooling, and Hot Water Heating.
    - Outdoor air is pulled from shared louver opening located within the building overhang on the first floor facing west towards the Delaware river. Exact dimensions were difficult to obtain, it is estimated the entire shared louver is approximately 36" wide and the entire length of the building's west face. It is possible there are sections of this louver that are blocked off and not used but because of its location this was not able to be determined.
    - Pre-Filter AHU section contains 1-16x25 – 2" disposable filters.

- **HC-Lobby**: Not accessible at the time of survey. According to maintenance staff: Located on the 1st floor upper-level mechanical room serving the lobby area. 100% outside air, Constant Volume, Hot Water Heating only.
    - 80"x40" Outdoor air louver ducted to supply fan and heating coil. Utilizes similar louver to AHU-1 and AHU-2 with unused sections blanked off. Louver is facing North toward the Taxation Building.
    - Unit uses similar 2" disposable filters estimated counts based off intake size or 8 – 20x20.

General Building Notes:

- None of the windows within the building are operable.
- Chilled and hot water is provided from Vicinity and not produced on site, existing boiler and chiller installations are abandoned and intakes have been sealed.
- The louver located on ground level of the north face of building, opposite the louver for the lobby system is not in use and has been sealed.
- The louver located on ground level of south face of building next to entrance door is believed to be no longer in use and sealed. In conversations with the maintenance staff nothing to their knowledge was ever connected to the louver and was located behind a locked door that maintenance did not have access to.
- Adjacent to the AHU-3 intake on the roof, is another large louver that is sealed and no longer in use.
- A louver opening was seen in the penthouse mechanical room on the East face of the building. This louver only serves the penthouse directly for ventilation with no attached ductwork. It has an estimated size of 96" x 24".
- The Electrical/MDF room on the 4th floor of the building is conditioned from a standalone split AC system and does not include any ventilation air.

Department of Taxation Building:

- Description:
    - 8-Story office building (floors 1-8 open office)
- HVAC:
    - **AHU-01**: Located at the roof level providing primary air to all the systems on the Northwest of the building. Constant Volume, 100 % outside air, Energy Recovery Wheel, Chilled Water Cooling, Hot Water Heating
        - 176"x128" Outdoor air louver connected directly to rear of unit. Louver is facing West toward the Delaware River.
        - 66" Pre-Filter and Secondary Filter AHU section contains a wall of 2" disposable pre-filters (15-24x24).

- **AHU-02**: Located at the roof level providing primary air to all the systems on the Southwest of the building. Constant Volume, 100 % outside air, Energy Recovery Wheel, Chilled Water Cooling, Hot Water Heating
  - 176"x128" Outdoor air louver connected directly to rear of unit. Louver is facing West toward the Delaware River.
  - 66" Pre-Filter and Secondary Filter AHU section contains a wall of 2" disposable pre-filters (15-24x24).

- **AHU-03**: Located at the roof level providing primary air to all the systems on the Northeast of the building. Constant Volume, 100 % outside air, Energy Recovery Wheel, Chilled Water Cooling, Hot Water Heating
  - 176"x128" Outdoor air louver connected directly to rear of unit. Louver is facing East toward Lincoln Hwy.
  - 66" Pre-Filter and Secondary Filter AHU section contains a wall of 2" disposable pre-filters (15-24x24).

- **AHU-04**: Located at the roof level providing primary air to all the systems on the Southeast of the building. Constant Volume, 100 % outside air, Energy Recovery Wheel, Chilled Water Cooling, Hot Water Heating
  - 176"x128" Outdoor air louver connected directly to rear of unit. Louver is facing East toward Lincoln Hwy.
  - 66" Pre-Filter and Secondary Filter AHU section contains a wall of 2" disposable pre-filters (15-24x24).

- **SF-Mech Room**: Located in the 1st Floor Mechanical Room providing makeup air to both the mechanical room and electrical room on the 1st floor. Constant Volume, 100 % outside air
  - 192"x100" Outdoor air louver ducted directly to the supply fan. Louver is facing South toward the Labor Building.

General Building Notes:

- None of the windows within the building are operable.
- Chilled and hot water is provided from Vicinity and not produced on site, a supplemental air-cooled chiller is located on the roof and has the ability to produce chilled water for a small percentage of rooms in the building.
- FCU-900 located in the elevator controls / electrical room on the roof is not provided with ventilation air.
- AHU-MDF serving the 1st floor MDF room is not provided with ventilation air.
- The two louvers adjacent to the intake for the 1st floor mechanical room, located on the ground floor exterior both serve the exhaust system for the mechanical/electrical space.
- Two inline exhaust fans on the roof serve the smoke control system for the building stairwells.
- AHU 1&2 and AHU 3&4 have the ability to be ducted together to serve both sections of the building on a single air handling unit at a reduced capacity.

Labor Building Photos

AHU-6 Intake

AHU-3 Intake

Typical (4) Ground Floor Intake Louver

Typical (2) Overhang Intake Louver

Louver Adjacent to Door Believe not to be in use

Typical Interior AHU Filter Wall

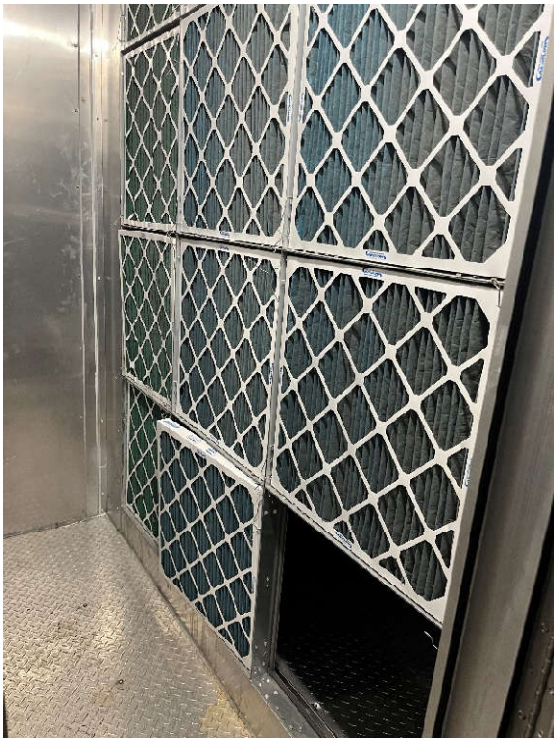
Intake into penthouse mechanical room

Inaccessible area connected to perimeter AHU and overhang louver

Taxation Building Photos

Typical (4) AHU Intake at Roof

Typical (4) AHU Filter Section



Ground Floor Mechanical Room Intake (center) & Exhaust (Left & Right)

APPENDIX E

Standard Operating Procedures for Managing Telemetry Failure

STANDARD OPERATING PROCEDURE FOR REAL-TIME AIR MONITORING IN THE EVENT OF TELEMETRY FAILURE

In the case of telemetry or internet failure for the air monitoring stations (AMS), the Perimeter Air Monitoring Technician (PAMT) will immediately inform the SHSO of the telemetry or internet failure of the AMS. The PAMT must also contact Triumvirate to inform them of the loss of telemetry or internet. The PAMT will remain in regular contact with the SHSO so that he or she can inform the PAMT if instantaneous exclusion zone readings surpass the perimeter air monitoring action levels. Once telemetry has been restored, the PAMT will ensure no loss of data has occurred during the downtime via the Greenlight site.

TELEMETRY / INTERNET FAILURE

The PAMT will perform AMS recordings every 15. If a perimeter AMS instantaneous reading is at or exceeds the action levels for PM-10 or VOCs, the PAMT will observe readings continuously for one minute. If the readings remain above action levels after one minute of continuous observation, the PAMT will follow the same action level exceedance protocol specified in Appendix C.