2020 Annual Vapor Intrusion Mitigation Status Report

Pacific Food Systems, Inc. North Building
5815 Fourth Avenue South, Seattle, Washington

Natus Medical Building
5900 First Avenue South, Seattle, Washington

Agreed Order No. DE10402

February 12, 2021

Prepared for

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Vapor Intrusion Mitigation Status Report
Pacific Foods System, Inc and Natus Medical Building
Seattle, Washington

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LIST OF ABBREVIATIONS AND ACRONYMS

Agreed Order	Agreed Order No. DE 5348
Capital	Capital Industries, Inc.
CEF	cancer exceedance factors
COC	Constituent of concern
Ecology	Washington State Department of Ecology
Farallon	Farallon Consulting, LLC
HVOC	halogenated volatile organic compound
IOW	inches of water
IPIMAL	Inhalation Pathway Interim Measures Action Limit
LAI	Landau Associates, Inc.
µg/m^3	micrograms per cubic meter
Natus	Natus Medical Building
NCEF	non-cancer exceedance factor
PCE	tetrachloroethene
PFE	pressure field extension
PFS-N	Pacific Food Systems, Inc. North Building
PSC	Philip Services Corporation
SCFM	standard cubic feet per minute
Site	Capital property
SSDS	subslab depressurization system
TCE	trichloroethene
VI	vapor intrusion
VIRL	vapor intrusion remediation levels
VOC	volatile organic compound
West 4th Group	West of 4th Group

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1.0 INTRODUCTION

Landau Associates, Inc. (LAI) has prepared this 2020 Annual Vapor Intrusion Mitigation Status Report on behalf of Capital Industries, Inc. (Capital) to provide an update on ongoing vapor intrusion (VI) mitigation measures, which include subslab depressurization systems (SSDSs) at the Pacific Food Systems, Inc. North Building located at 5815 4th Avenue South in Seattle, Washington (PFS-N) and the Natus Medical Building (former Olympic Medical Building) located at 5900 1st Avenue South in Seattle, Washington (Natus), which operated during the 2020 period. The general site location is shown on Figure 1 and the locations of PFS-N and Natus relative to the Capital property are shown on Figure 2.

Mitigation of VI from volatile constituents of concern (COCs) at PFS-N and Natus is required by the Washington State Department of Ecology (Ecology) in accordance with Exhibits B and D of Agreed Order No. DE 5348 entered into by Ecology and Capital on January 24, 2008 (Agreed Order) and with the *Revised Vapor Intrusion Assessment, Monitoring, and Mitigation Plan*, prepared by Farallon Consulting, L.L.C. (Farallon 2015a) under Agreed Order No. DE 10402 entered into by Ecology and the West of 4th Group (West 4th Group).

1.1 Purpose of Report

The purpose of this report is to provide a summary of the performance and monitoring results for the VI mitigation measures and details relating to the SSDS's ongoing operations at the PFS-N and Natus buildings in the 2020 period.

1.2 Report Organization

The report is organized as follows:

- **Section 1 Introduction**: Presents the report's purpose
- **Section 2 Site Description and Background**: Provides a description of the Capital Area of Investigation and a summary of the PFS-N and Natus buildings backgrounds
- **Section 3 VI Mitigation Measures**: Provides reference details of SSDS's installation and operations
- **Section 4 Inspection, Monitoring, and Maintenance Procedures**: Discusses the procedures used for SSDS's inspection, monitoring, and maintenance
- **Section 5 Inspection, Monitoring, and Maintenance Results**: Discusses the results from the SSDS's inspection, monitoring, and maintenance activities conducted at the PFS-N and Natus buildings
- **Section 6 Conclusions**: Presents LAI's conclusions regarding the SSDS's monitoring and performance air sampling results for the PFS-N and Natus buildings
- **Section 7 Planned Work**: Discusses work planned for the 2021
- **Section 8 References**: Provides a list of the documents used in preparation of this report.

2.0 SITE DESCRIPTION AND BACKGROUND

This section provides a description of the Capital Area of Investigation within which the PFS-N and Natus buildings are located and a summary of each building's background, including a discussion of the basis for each VI mitigation plan and SSDSs operation.

2.1 Site Description

The Capital property (Site) is located at 5801 Third Avenue South between South Mead Street to the north and South Fidalgo Street to the south, and between Fourth Avenue South to the east and First Avenue South to the west in Section 39, Township 24 South, Range 4 East in Seattle, King County, Washington (Figure 2). Capital is a source of halogenated volatile organic compounds (HVOCs) in the subsurface with impacted groundwater extending downgradient from the property. Capital is part of the West of 4th remediation site. The Capital Area of Investigation is defined as the area south of South Mead Street, east of 1st Avenue South, north of South Front Street, and west of 4th Avenue South, and includes the property on the northwest corner of 4th Avenue South and South Mead Street (Farallon 2009b) (Figure 2). The Capital Area of Investigation is within Seattle city limits in King County, Washington (King County) in an area zoned for industrial light manufacturing. Properties within the Capital Area of Investigation include a mixture of light industrial, commercial, and residential properties.

The PFS-N Building is located adjacent to the east end of Capital Plant 4 (Figure 2), and is used by Pacific Food Systems, Inc. for warehouse storage and equipment maintenance.

The Natus Medical Building is located within the Capital Area of Investigation, south (downgradient) of Capital Plant 2 (Figure 2) and was used by Natus Medical Inc. for the distribution and manufacture of medical equipment. The Natus Medical Building has been referred to as the Olympic Medical Building in prior Site documents. Natus Medical, who was a tenant, vacated the building between October and December 2020. The building is owned by CenterPoint Properties.

2.2 PFS-N Building Background

According to prior Site documents prepared by others, the volatile HVOCs tetrachloroethene (PCE) and trichloroethene (TCE) were detected in soil gas, at concentrations exceeding the screening levels used to evaluate VI risk (75 micrograms per cubic meter [µg/m^3] and 3.9 µg/m^3, respectively), in two subslab soil gas samples collected at the PFS-N Building in April 2011. The standards used to evaluate VI risk were set forth in the following documents:

- *Revised Inhalation Pathway Interim Measures Work Plan* prepared by Philip Services Corporation (PSC 2002)
- *Draft Interim Vapor Intrusion Plan* prepared by Arrow Environmental et al. (Arrow Environmental 2007), which is Exhibit D of the Agreed Order

- *Updated Air and Groundwater Inhalation Pathway Interim Measures Action Levels (IPIMALs)/ Vapor Intrusion Remediation Levels (VIRLs) for Residential and Commercial Scenarios for the Georgetown Site* prepared by Pioneer Technologies Corporation (Pioneer 2012).

During the initial VI investigation, screening levels for soil gas were based on historical Ecology guidance using an attenuation factor from soil gas to indoor air of 0.1; Ecology guidance has been updated and current guidance uses an attenuation factor of 0.03. This report will use the updated guidance to evaluate subslab soil gas samples from 2020; see Table 1 for updated screening levels.

The initial subslab sample results indicated the potential for VI into the PFS-N Building and warranted indoor air analysis to further evaluate whether a VI risk was present (Farallon 2017). The results from the assessment of indoor and outdoor ambient air, conducted between 2012 and 2014, indicated that a source of volatile COCs in the subsurface was potentially contributing to a VI condition for the PFS-N Building.

Tier 4 mitigation measures were implemented in 2015, which consisted of a subslab depressurization system (SSDS). Adjustments were made to optimize and confirm the extent of the negative pressure field exerted by the mitigation system (extension of the discharge stack, and additional differential pressure monitoring points) in 2017 and 2018. Despite implementation and optimization of the mitigation system, results from indoor air sampling events have remained relatively consistent indicating a background source, not VI, is the cause of VOCs in indoor air at PFS-N.

VI mitigation design specifications for PFS-N Building were developed in accordance with the *Vapor Intrusion Mitigation Design Plan* (Farallon 2014b). The need for VI mitigation at the PFS-N Building was based on results from Farallon's *Tier 3 Vapor Intrusion Assessment* (Farallon 2014a, b). The As-built plans of the SSDS installed and in operation at PFS-N Building are contained in Appendix A.

2.3 Natus Medical (Former Olympic Medical) Building Background

The Natus Medical Building, located at 5900 1st Avenue South, is downgradient of the Capital property. According to prior Site documents prepared by others (Farallon 2009a), Phillips Services Corporation (PSC) initially conducted a Tier 3 VI assessment at the Natus Medical (Former Olympic Medical) Building; subsequently, Capital was identified as the lead business responsible for VI mitigation.

The Tier 3 VI assessment was conducted in 2005 and included sampling indoor air to determine whether commercial indoor air cancer exceedance factors (CEFs) and non-cancer exceedance factors (NCEFs) exceeded their respective ratio benchmarks. The warehouse and manufacturing area results exceeded CEFs and NCEFs in the Natus Medical (Former Olympic Medical) Building, and a VI mitigation system was proposed by PSC for those areas based on the concentrations of TCE detected in indoor air (Farallon 2009a). Subsequent additional indoor air sampling by GeoEngineers Inc. in 2006 confirmed exceedances of TCE Indoor Pathway Interim Measures Action Levels (IPIMALs) in indoor air

within the warehouse area. In January of 2009, Farallon implemented mitigation in the form of a SSDS within the Natus Building (Farallon 2009a). The VI mitigation system was designed according to specifications defined in the *Vapor Intrusion Mitigation Work Plan, Olympic Medical Facility, Seattle, Washington* (Farallon 2008). The As-built plans of the SSDS installed and in operation at Natus Medical Building are contained in Appendix A.

3.0 VAPOR INTUSION MITIGATION MEASURES

SSDSs in the PFS-N and Natus buildings were designed in accordance with the specifications defined in each facility's VI mitigation work plan or VI mitigation design plan, and ASTM International 2121-13. Installation of the SSDS in the PFS-N Building was completed in March 2015 and installation of the Natus SSDS took place in January 2009. As-built schematics for the SSDSs installed and in operation at the Natus and PFS-N buildings are provided in Appendix A.

The basis for the SSDS design, installation details, inspection, monitoring, and maintenance procedures are discussed in detail for the Natus Building in the following:

- *Vapor Intrusion Mitigation Report*, Olympic Medical Facility, prepared by Farallon, September 10, 2009 (Farallon 2009d)
- *Vapor Intrusion, Inspection, Monitoring, and Maintenance Work Plan*, Olympic Medical, prepared by Farallon, November 2, 2009 (Farallon 2009c).

The basis for the SSDS design, installation details, inspection, monitoring, and maintenance procedures are discussed in detail for the PFS-N Building in the following:

- *Vapor Intrusion, Inspection, Monitoring, and Maintenance Work Plan*, Pacific Seafoods North Building (Farallon 2015b)
- *Vapor Intrusion Mitigation Measures Status Report*, Pacific Food Systems, Inc. North Building (Farallon 2017).

4.0 INSPECTION, MONITORING, AND MAINTENANCE PROCEDURES

This section presents the inspection and monitoring procedures conducted at the Natus and PFS-N buildings during the 2020 period. The basis for the SSDS design, installation details, inspection, monitoring, and maintenance procedures are discussed in detail for the Natus and PFS-N buildings in the Site documents referenced in Section 3.

4.1 Inspections and Monitoring

Periodic inspection and monitoring is conducted to confirm that each building's SSDS is operating effectively. Inspection and monitoring of the SSDSs includes the following:

- General system component inspection
- Negative pressure field extension (PFE) monitoring
- Reviewing the onsite SSDS onsite operations documentation maintained by the trained tenant contact (PFS-N)
- Periodic air quality monitoring.

4.1.1 Tenant Inspections

Inspections by each of the building tenants are conducted monthly, at a minimum, to ensure that the SSDSs are operating properly.

Each building tenant contacts the designated consultant and/or Capital personnel if the SSDSs are not operating properly. Contact information for Pacific Food Systems, Inc., Natus Medical Inc. (2020), Capital, and LAI is provided below. Natus Medical vacated their building in late 2020 and Capital is actively working with the property owner to designate a new contact for that building.

JSI Pacific, Inc. dba Pacific Food Systems, Inc.
Ms. Inna Guryevsky, Operations Manager
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Seattle, Washington 98108
(206) 658-0382

Natus Medical Building
Mr. Carlos Quintanilla
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(206) 268-5166

Capital Industries, Inc.
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(206) 762-8585

Landau Associates, Inc.
Mr. David Johnson, Project Engineer, or Ms. Jennifer Wynkoop, Project Principal
2107 South C Street
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(253) 926-2493

4.1.2 Annual Inspections

Annual inspections are conducted to observe and document the condition of each SSDS and to record changes to each building and surrounding area that could affect the performance of each SSDS. The annual inspection consists of observing and documenting the condition of the components for each SSDS, as well as any structural changes or modifications to each building, and adjacent buildings or structures, and recording each SSDS's current pressure gauge measurements. Previously documented pressure gauge measurements are used for comparison during the inspections. Photographs are taken during the inspection, as necessary, to document any deterioration of materials (e.g., cracks in piping, mounting damage) or other pertinent changes in the condition of each SSDS, each building structure, or other factors that could impact each system's operation or effectiveness.

4.1.3 Pressure Field Extension Monitoring

Pressure Field Extension (PFE) monitoring is conducted at each building on a biannual basis (typically in March and September) to measure the pressure differential across each building slab while the SSDS is operating. The results from PFE monitoring are used to confirm that the negative pressure field extends across the designated mitigation area.

Five permanent subslab monitoring ports were installed in the building slab at the PFS-N Building for PFE monitoring. The subslab monitoring ports are flush-mounted to the building slab, and have a tamper-resistant cap. The subslab monitoring ports are used for PFE monitoring to verify the negative pressure field extends across the slab under the entire building. A negative pressure of 0.025 inches of water (IOW) column or more at each of the subslab monitoring ports is more than sufficient to demonstrate depressurization. The tamper-resistant cap secures the subslab monitoring port closed between PFE monitoring events to maintain the integrity of the depressurization applied by the SSDS. The location and details of the subslab monitoring ports are shown on Sheet Nos. 3 and 4 in Appendix A.

There are seven manometer pressure gauges at the Natus Building located at each SSDS extraction sump that are currently used for ongoing PFE monitoring. The pressure readings of each extraction sump location should be within a 25 percent reading of the currently applied SSDS overall system vacuum, which has historically been between 5-15 IOW vacuum.

4.1.4 Air Quality Monitoring

Air quality monitoring is performed at the Natus and PFS-N buildings to provide air quality data that can be:

- Directly compared with previous VI Assessment data to evaluate the reduction in volatile COCs due to operation of the SSDSs;
- Used to adjust SSDSs operation parameters, if needed (Farallon 2015a); and
- Used to evaluate whether further action is necessary to protect human health.

Air quality monitoring is typically conducted semiannually in accordance with the VIIMM Work Plan (Farallon 2015b). Air samples collected during this reporting period were collected at the approximate sampling locations used during previous investigations/sampling events using 6-liter Summa canisters with flow controllers set to collect a sample over an 8-hour duration (see Figures 3 and 4). The indoor and outdoor air samples were analyzed for volatile COCs by U.S. Environmental Protection Agency Method TO-15 Selected Ion Monitoring. All sampling was performed in accordance with the standard operating procedures established during completion of the Tier 3 VI Assessments (Farallon 2013) and the VIAMM Plan (Farallon 2015a).

4.2 System Evaluation and Optimization

Results from the air quality, PFE monitoring, groundwater monitoring, and/or annual inspections are evaluated to determine whether modifications to each SSDS are necessary. The SSDSs are re-evaluated or modified to meet performance standards as warranted based on inspection and monitoring results. The following criteria are used to determine whether re-evaluation of each SSDS is warranted:

- Inspection results indicate a significant structural change in each building (e.g., remodeling that could introduce additional pathways for vapor intrusion);
- Inspection indicates the system is not meeting performance standards;
- Air quality monitoring results indicate an indoor air IPIMAL exceedance; and/or
- Groundwater sampling analytical results indicate a minimum tenfold increase in cumulative VI risk/hazard in the vicinity of each building, as defined in the VIAMM Plan (Farallon 2015a).

4.3 Subslab Depressurization System Maintenance

SSDS maintenance will be performed as needed based on conditions observed during system monitoring and/or optimization visits. Typical target maintenance items are described below.

The SSDSs components that may require maintenance include the exhaust blower, the pressure gauge, and piping. The exhaust blower is not amenable to periodic maintenance and is relatively easy to replace. Therefore, the blower will be operated until excessive noise, vibration, or significantly reduced pressure-gauge readings are noted, at which point the blower will be repaired or replaced.

An operational failure of the blower would be indicated by the pressure gauge, which is checked during monthly tenant inspections, annual inspections, and/or biannual monitoring. Pressure gauges may fail or become less accurate after prolonged use. The SSDS's pressure measurements collected during annual or biannual inspections and will be compared to the SSDSs pressure gauge readings. The SSDS's pressure gauge will be replaced when a measured reading deviates from the monitored SSDS's pressure by more than 25 percent. If pressure gauge failure is confirmed, a replacement pressure gauge will be installed and tested. Replacement of cracked or otherwise damaged system piping observed during annual inspections or identified by the building tenant may be required on an as needed basis. Ongoing regular SSDSs maintenance will be performed as needed without direct coordination or approval with Ecology. Proposed significant modifications to the SSDSs will be presented to Ecology for approval prior to proceeding with the work.

5.0 ANNUAL INSPECTION, MONITORING, AND MAINATENANCE RESULTS

The Natus SSDS start-up occurred in January 2009 and the PFS-N SSDS startup occurred in April 2015. During the 2020 operational period both SSDSs operated continuously with no significant changes from prior year operations. Operation parameters for each SSDSs are summarized in Table 2.

5.1 Inspection, Monitoring, and Maintenance Activities

Periodic inspections to monitor the SSDSs and adjust operations were conducted on:

- March 19, 2020 by Farallon personnel
- September 23, 2020 by LAI personnel.

The work elements cited in Section 4, Inspection, Monitoring, and Maintenance Procedures, were monitored and documented during each visit.

Air quality monitoring was conducted to evaluate whether the SSDSs were reducing HVOCs in indoor air. Sampling events were conducted on:

- March 19, 2020 by Farallon personnel
- September 23, 2020 by LAI personnel.

Each sampling event at each building included collecting indoor air samples and an outdoor ambient air sample. The approximate locations of the samples are depicted on Figure 3 and Figure 4. Sampling was conducted in general accordance with the procedures described in the VIIMM Work Plan (Farallon 2015b) and its supporting documents. Air quality monitoring parameters and results are summarized in Table 1. The laboratory analytical reports are provided in Appendix B.

The monitoring conducted in March and September 2020 at PFS-N and Natus also included 5-minute grab samples of the soil gas influent being extracted by each SSDS prior to discharge to the exhaust stack. The purpose of this sampling was to confirm that the discharge to outdoor ambient air would comply with Puget Sound Clean Air Agency regulations, and to compare concentrations of HVOCs in influent samples to outdoor air sampling results to evaluate whether the sources are related. Samples were collected using a 1-liter Summa canister at a sampling port located prior to entry to the SSDS blower. Samples were collected while the system was operating. A slight vacuum was maintained in the canister to mitigate potential loss of the sampled influent. Routine maintenance activities included inspection of each building's SSDS components during each 2020 Site visit.

5.2 Inspection, Monitoring, and Maintenance Results

Results from the air quality sampling and SSDSs operation monitoring results are described below. The air quality monitoring sample locations are depicted on Figure 3 and Figure 4. The sampling

parameters, IPIMALs, and results are summarized on Table 1. The IPIMALs[1] were used to evaluate sample results for both subslab soil gas[2] and indoor air. Table 2 provides a summary of SSDS operation parameters. The laboratory analytical reports are provided in Appendix B.

5.2.1 PFS-N Results

Air quality monitoring results collected in 2020 indicated that COCs persisted in indoor air at concentrations similar to prior rounds of monitoring at PFS-N (Table 1). However, pressure measurements indicate the SSDS is maintaining the pressure field across the entire building slab. The consistent detections of COCs in indoor air while the SSDS is properly functioning indicate a background source of COCs in indoor air at PFS-N.

TCE concentrations detected at PFS-N on March 19, 2020 at two indoor sample locations (IA1 and IA8)[3] were 5.52 and 1.43 µg/m^3, respectively. The PCE concentrations were 0.475 and 0.598 µg/m^3. The March cis-1,2-DCE concentrations were 2.09 µg/m^3 and non-detect. The trans-1,2-DCE concentrations were 0.287 µg/m^3 and non-detect. The 1,1-DCE concentrations were 0.0815 µg/m^3 and non-detect. The March vinyl chloride concentrations were non-detect at both IA1 and IA8 locations. The outdoor air sample collected in March was non-detect for all COCs except for trans-1,2-DCE, which was detected at 0.0311 µg/m^3.

The September 23, 2020 TCE concentrations detected at three indoor sample locations at PFS-N ranged from 1.37 to 1.64 µg/m^3 and PCE concentrations ranged from non-detect to 0.561 µg/m^3. No other COCs were detected in indoor air during September. The outdoor air sample collected in September was non-detect for all COCs.

PCE, trans-1,2-DCE, 1,1-DCE, and vinyl chloride results in 2020 did not exceed the indoor air IPIMALs of 7.5, 12, 39, and 0.66 µg/m^3, respectively. However, TCE results exceeded the indoor air IPIMAL of 0.39 µg/m^3 in both the March and September sampling events (Table 1).

The SSDS at PFS-N was measured in September at 3.8 IOW operating vacuum and 24.7 standard cubic feet per minute (SCFM) flowrate, resulting in a measured differential pressure vacuum range of 0.032 to 0.063 IOW at subslab monitoring ports SSMP-1 through SSMP-5. Table 2 provides a summary of SSDS operation parameters.

The SSDS soil gas influent samples were collected to evaluate the discharge from the system. PCE was detected at a concentration of 94.6 µg/m^3 (Table 1), and TCE at a concentration of 168 µg/m^3. The commercial subslab soil gas IPIMALs for PCE and TCE are 250 µg/m^3 and 13 µg/m^3, respectively. The SSDS soil gas influent samples for both March and September 2020 did not exceed the soil gas

[1] The lower of the cancer and non-cancer IPIMALs were used for evaluation purposes.
[2] Subslab soil gas IPIMALs are calculated from the indoor air IPIMAL using an attenuation factor of 0.03.
[3] IA9 was not sampled in March of 2019.

IPIMALs for PCE but did for TCE. PCE and TCE SSDS influent samples have been consistent since the SSDS startup with a detected steady-state rate of removal from approximately 2016 to date.

5.2.2 Natus Results

Air quality monitoring results collected in 2020 indicated that COCs were below their respective indoor air IPIMALs (Table 1) for TCE and PCE at the Natus Building. The outdoor ambient air sample collected in March did exceed the non-cancer IPIMALs for PCE but was non-detect for TCE. The September ambient outdoor air sample contained detectable concentrations of PCE but was below the IPIMALs, and TCE was non-detect.

The March 19, 2020 TCE concentrations detected at two indoor sample locations at Natus ranged from 0.176 to 0.213 µg/m^3 and PCE concentrations ranged from 0.411 to 0.734 µg/m^3; both were below their respective indoor air IPIMALs (Table 1). All other COCs during the March sampling period were non-detect except for trans-1,2-DCE, which was detected at a concentration of 0.0268 µg/m^3 at sample location 5900-IA3. The outdoor air sample collected in March was non-detect for all COCs exceptPCE, which was detected at 8.83 µg/m^3, exceeding the IPIMAL.

The September 23, 2020 TCE and PCE concentrations were non-detect at the two indoor sample locations for all COCs at Natus. The outdoor air sample collected on September 23, 2020 was non-detect for all COCs except PCE, detected at 3.45 µg/m^3, which is below the IPIMAL (Table 1).

The SSDS at Natus was measured in March and September at 9.6 IOW operating vacuum and 250 and 258 SCFM flowrates, resulting in a measured vacuum range at the extraction sumps of 8.0 to 9.0 IOW. Table 2 provides a summary of SSDS operation parameters. An SSDS soil gas influent sample was collected to evaluate discharge from the system. TCE was detected at a concentration range of 0.511 to 0.525 µg/m^3, and PCE at a concentration range of 0.596 to 1.41 µg/m^3 (Table 1). The SSDS soil gas influent samples for both March and September 2020 were below their respective commercial subslab soil gas IPIMALs for all COCs. The commercial subslab soil gas IPIMALs for PCE and TCE are 250 µg/m^3 and 13 µg/m^3, respectively. PCE and TCE SSDS influent samples at Natus have been consistent with a steady-state rate of removal from approximately 2017 to date based on available data. The SSDS vacuum blower at Natus was fully inspected during the 2020 Site visits and is still operating effectively within normal operating parameter ranges. The current vacuum blower is applying sufficient vacuum beneath the Natus Building slab resulting in ongoing effective depressurization and VI mitigation.

6.0 CONCLUSIONS

The PFS-N Building air quality monitoring results for PCE and TCE have fluctuated over time, with TCE concentrations continuing to exceed IPIMALs despite ongoing operation of the SSDS (Table 1 and Table 2; Figures 3). PFS-N SSDS soil gas influent sampling results indicate that the SSDS is effectively capturing PCE and TCE vapors from beneath the PFS-N Building slab (Table 1). Depressurization of the area beneath the PFS-N Building slab is confirmed by pressure field monitoring data, which confirm that depressurization of the slab is occurring, and exceeding the criteria established for the SSDS in the VIIMM Work Plan (Farallon 2015b) (Table 1).

The ongoing persistent source of TCE being detected within the PFS-N Building indoor air is unknown but appears to be related to a background TCE source within the building. Ongoing PFS-N inspection and monitoring visits have not identified cracks or penetrations in the floor slab. It also is possible that the building materials within the indoor air space of PFS-N contain a source of TCE from a historical release that has not been identified. Further investigation of the source of TCE at the PFS-N Building is recommended.

The Natus Building indoor air quality monitoring results for PCE and TCE concentrations were either non-detect or did not exceed their respective IPIMALs (Table 1 and Table 2; Figures 4). SSDS soil gas influent sampling results indicate that the SSDS is effectively capturing low level PCE and TCE vapors from beneath the Natus Building slab on an ongoing basis (Table 1). Depressurization of the area beneath the Natus Building slab was confirmed by pressure field monitoring data, which indicate ongoing depressurization of the slab is occurring (Table 2). The SSDS influent concentrations indicate the subslab vapor concentrations are not a risk for vapor intrusion as they are all below the subslab soil gas IPIMALs for all constituents when the SSDS is operating. Re-evaluation of the VI potential at Natus is recommended to determine if continued operation of the SSDS system is required.

The SSDS vacuum blower in operation at Natus is beyond its standard operational lifetime period and is scheduled to be replaced in 2021. During inspection and monitoring activities conducted during 2020 the SSDS vacuum blower was fully inspected and is still operating effectively within normal operating parameter ranges. Despite its age, the current vacuum blower is applying sufficient vacuum beneath the Natus Building slab resulting in ongoing effective depressurization and VI mitigation. If additional work conducted in 2021 determines that ongoing SSDS operations at Natus are necessary beyond 2021, the vacuum blower should be replaced with a similar unit to continue operations beyond 2021 and further investigations into the VI source may be warranted.

7.0 PLANNED WORK FOR 2021

SSDS operations will continue at both PFS-N and Natus buildings during the 2021 period, pending the additional investigation work recommended above. SSDS inspections, maintenance, and monitoring, including indoor/outdoor ambient air sampling, is scheduled to be conducted by LAI personnel in March and September 2021 at both PFS-N and Natus. The results of the inspections, maintenance, and monitoring of the SSDSs will be summarized in the 2021 annual VI mitigation status report. As part of 2021 operations, further evaluation will be conducted to determine the source of persistent TCE concentrations being detected at PFS-N on an ongoing basis in exceedance of the IPIMALs. Additional work will also be conducted to determine if the SSDS system at Natus can be shut down. If ongoing SSDS operations are determined necessary beyond 2021 at the Natus Building, it is expected that the vacuum blower currently in operation will be replaced with a similar unit to continue operations beyond 2021. A work plan for the additional work will be submitted for Ecology review. Results will be summarized in a report that will also provide recommendations for any revisions to the VI mitigation program deemed necessary.

8.0 USE OF THIS REPORT

This report has been prepared for the exclusive use of Capital Industries and applicable regulatory agencies for specific application to the Capital Area of Investigation and Agreed Order No. DE 10402 Site. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of LAI. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by LAI, shall be at the user's sole risk. LAI warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. LAI makes no other warranty, either express or implied.

9.0 REFERENCES

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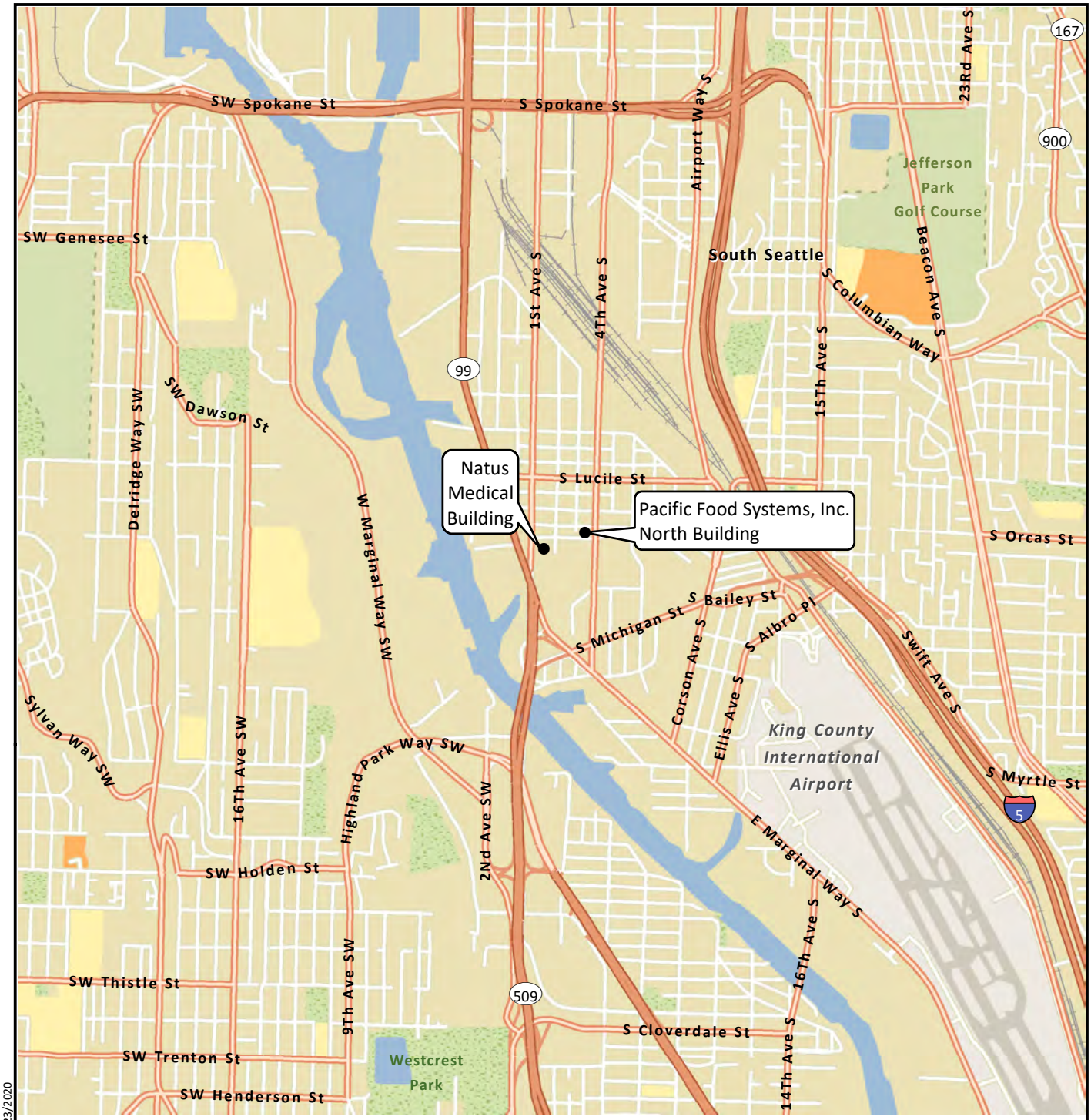

N

0 0.5 1

Miles

Data Source: Esri 2012

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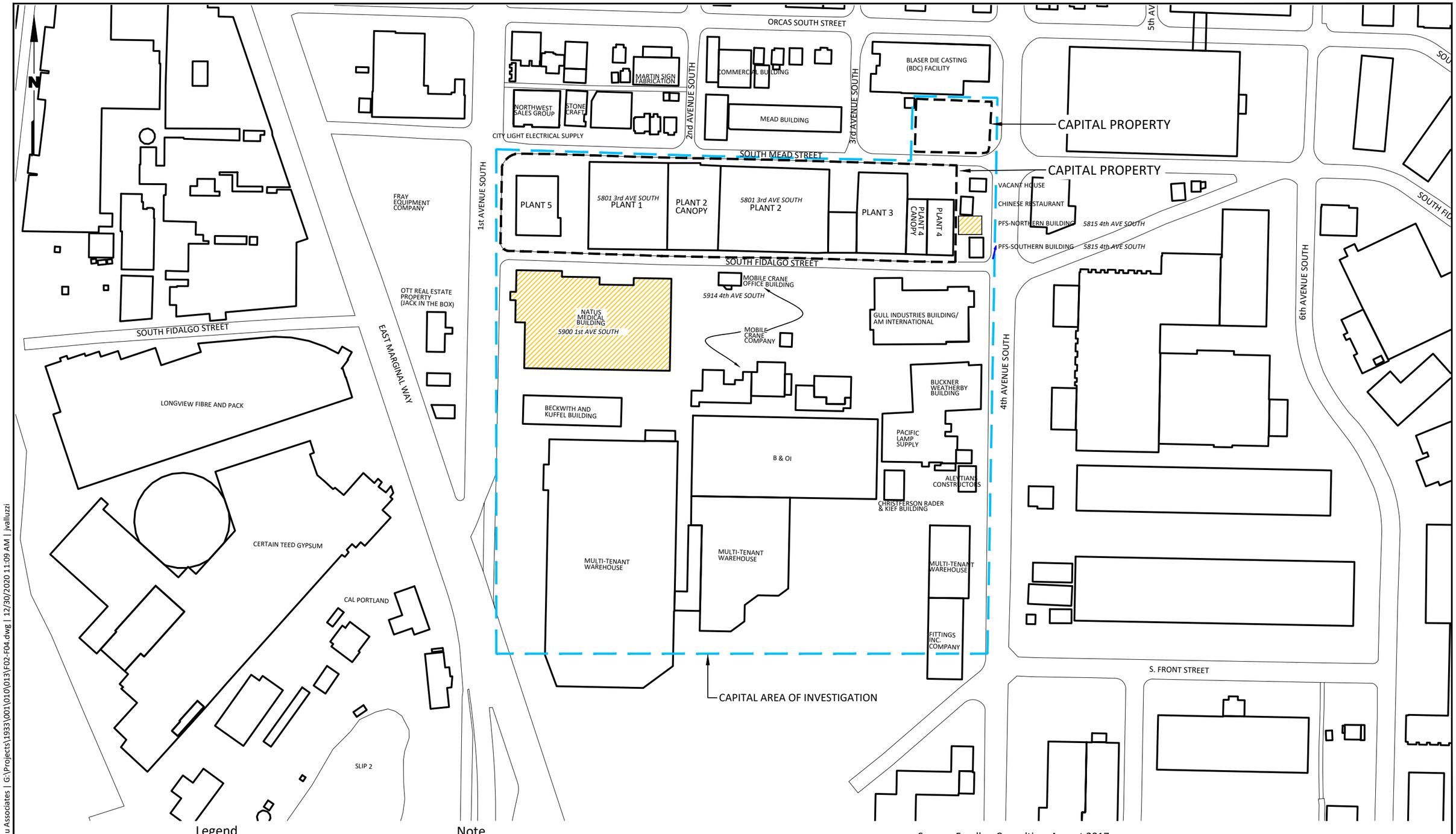
LANDAU ASSOCIATES

Capital Industries, Inc. Seattle, Washington	**Vicinity Map**	Figure 1



Legend

Building with Tier 4 Vapor Intrusion Intrusion Mitigation Implemented

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 200 400

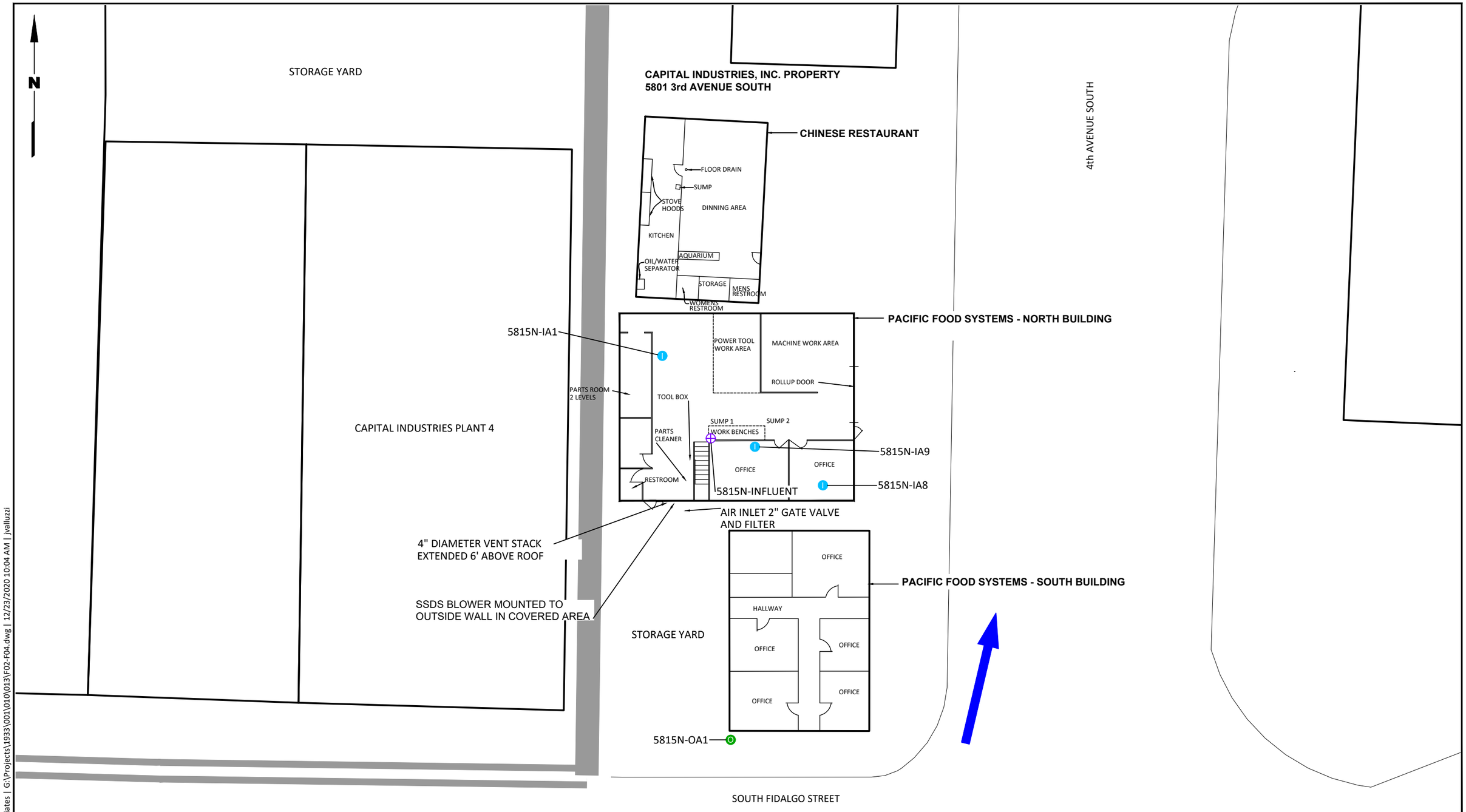
Scale in Feet

Source: Farallon Consulting, August 2017

Capital Industries, Inc. Seattle, Washington	**Site Map**	Figure 2

LANDAU ASSOCIATES

Landau Associates | G:\Projects\1933\001\010\013\F02-F04.dwg | 12/30/2020 11:09 AM | jvalluzzi



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Legend

- Indoor Air Quality Monitoring Location - 8 Hour Sample
- Outdoor Air Quality Monitoring Location - 8 Hour Sample
- Air Quality Monitoring Location - Grab Sample
- Typical Prevailing Wind Direction at Time of Samping

Note

1. SSDS = Subslab Depressurization System.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 20 40
Scale in Feet

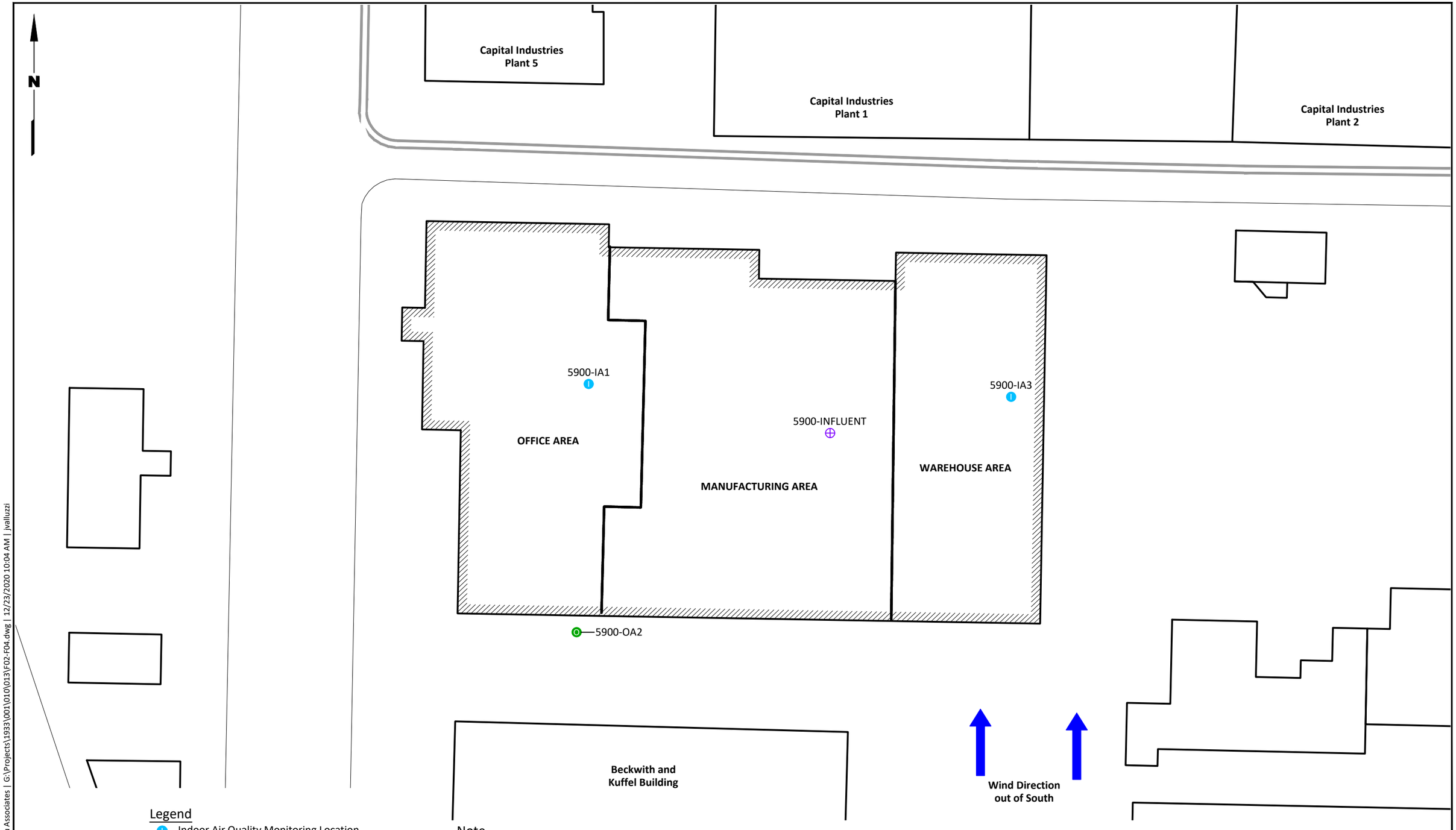
Source: Farallon Consulting, August 2017

LANDAU ASSOCIATES

Capital Industries, Inc.
Seattle, Washington

Pacific Food Systems, Inc.
North Building Monitoring Locations

Figure 3



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LANDAU ASSOCIATES

Legend

- Indoor Air Quality Monitoring Location
- Outdoor Air Quality Monitoring Location
- Air Quality Monitoring Location - Grab Sample
- Typical Prevailing Wind Direction at Time of Samping

Note

1. SSDS = Subslab Depressurization System.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 50 100
Scale in Feet

Source: Farallon Consulting, August 2017

Capital Industries, Inc.
Seattle, Washington

Natus Building
Monitoring Locations

Figure
4

Table 1
Summary of 2020 Air Quality Monitoring Results
Capital Industries

Building	Sample Type	Sample Location	Sample Date	Sample Type	Laboratory SDG	Laboratory Sample ID	VOCs by EPA TO-15 SIM (µg/m3)					
							Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride
Commercial Sub-Slab Soil Gas IPIMAL[1,2]							250	13	NA	400	1300	22
Commercial Indoor Air IPIMAL							7.5	0.39	NA	12	39	0.66
Pacific Food Systems, Inc.	Influent Grab Sample	5815N-INFLUENT	3/19/2020				**98.0**	**87.4**	**2.30**	**0.108**	0.0357 U	0.217 U
			9/23/2020	N	2009385	2009385-005A	**94.6**	**168**	**5.57**	**0.216**	0.0357 U	0.217 U
	Indoor Air	5815N-IA1	3/19/2020				**0.475**	**5.52**	**2.09**	**0.287**	**0.0815**	0.217 U
			9/23/2020	N	2009385	2009385-001A	**0.510**	**1.64**	0.0793 U	0.0238 U	0.0357 U	0.217 U
		5815N-IA8	3/19/2020				0.598	**1.43**	0.0793 U	0.0238 U	0.0357 U	0.217 U
			9/23/2020	N	2009385	2009385-003A	0.339 U	**1.37**	0.0793 U	0.0238 U	0.0357 U	0.217 U
		5815N-IA9	9/23/2020	N	2009385	2009385-002A	0.339 U	**1.54**	0.0793 U	0.0238 U	0.0357 U	0.217 U
	Outdoor Air	5815N-OA1	3/19/2020				0.339 U	0.0914 U	0.0793 U	**0.0311**	0.0357 U	0.217 U
			9/23/2020	N	2009385	2009385-004A	0.339 U	0.0914 U	0.0793 U	0.0238 U	0.0357 U	0.217 U
Natus Medical Building	Influent Grab Sample	5900-INFLUENT	3/19/2020				**0.596**	**0.525**	**0.177**	0.0238 U	0.0357 U	0.217 U
			9/23/2020	N	2009385	2009385-009A	**1.41**	**0.511**	0.0793 U	0.0238 U	0.0357 U	0.217 U
	Indoor Air	5900-IA1	3/19/2020				**0.411**	**0.213**	0.0793 U	0.0238 U	0.0357 U	0.217 U
			9/23/2020	N	2009385	2009385-007A	0.339 U	0.0914 U	0.0793 U	0.0238 U	0.0357 U	0.217 U
		5900-IA3	3/19/2020				**0.734**	**0.176**	0.0793 U	**0.0268**	0.0357 U	0.217 U
			9/23/2020	N	2009385	2009385-006A	0.339 U	0.0914 U	0.0793 U	0.0238 U	0.0357 U	0.217 U
	Outdoor Air	5900-OA2	3/19/2020				**8.83**	0.0914 U	0.0793 U	0.0238 U	0.0357 U	0.217 U
			9/23/2020	N	2009385	2009385-008A	**3.45**	0.0914 U	0.0793 U	0.0238 U	0.0357 U	0.217 U

Notes:

(1) IPIMALs were developed for both cancer and non-cancer levels. For each constituent the lower level IPIMAL is shown (all but one of the non-cancer IPIMALs was lower than the cancer IPIMAL [vinyl chloride]).

(2) Soil gas IPIMALs were previously calculated using an attenuation factor of 0.1, however, Ecology guidance has been updated and current guidance uses an attenuation factor of 0.03 for calculation of sub slab soil gas screening levels.

Bold text indicates detected analyte

Green shading indicates detected analyte exceeds applicable cleanup or screening level

U = The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

Acronyms and Abbreviations:

ID = Identification

IPIMAL = inhalation pathway interim measure action level

µg/m^3 = micrograms per cubic meter

N = primary sample

NA = not applicable

SIM = selected ion monitoring

VOC = volatile organic compound

Table 2
Summary of 2020 Pacific Food Systems, Inc. North Building SSDS Operation Parameters
Capital Industries

Date	Individual Pressure Gauge Vacuum Reading (IOW)					Pressure Gauge Vacuum Reading (IOW)	Field-Measured Operating Vacuum (IOW)	SVE System Flow (scfm)	Pressure Gauge/Field-Measured Pressure Differential (percent)	Lab-Measured Influent Concentration (µg/m^3)		Removal Rate [2] (µg/min)		Projected Annual Discharge (lbs/year)	
	SSMP-1	SSMP-2	SSMP-3 [1]	SSMP-4 [1]	SSMP-5 [1]					PCE	TCE	PCE	TCE	PCE	TCE
3/19/2020	0.04	0.018	0.005	0.02	0.005	3.6	4.2	24.7	117%	98	87.4	68.6	61.1	0.079	0.071
9/23/2020	0.063	0.032	0.047	0.054	0.043	3.6	3.8	24.7	106%	94.6	168	66.2	117.5	0.077	0.136
SSDS Operations	**<0.025**	**<0.025**	**<0.025**	**<0.025**	**<0.025**	**NA**			**75 - 125 percent**	**NA**				**1,000 lbs/year**	

Notes:

[1] Subslab monitoring ports SSMP-3 through SSMP-5 were installed in April 2018.

[2] Removal Rate = SVE flow * Measured PCE or TCE concentration

Acronyms and Abbreviations:

% = percent
IOW = inches of water
lbs = pounds
µg = micrograms
m^3 = cubic meter
min = minute
NA = not applicable
PCE = tetrachloroethene
scfm = standard cubic feet per minute
SSDS = subslab depressurization system
SSMP = subslab monitoring probe
SVE = soil vapor extraction
TCE = trichloroethene
VIMMWP = Vapor Intrusion, Inspection, Monitoring, and Maintenance Work Plan

Table 3
Summary of 2020 Natus Building SSDS Operation Parameters
Capital Industries

Date	Pressure Gauge Vacuum Reading (IOW)							SSDS Vacuum (IOW)	SSSDS Flow (scfm)	Lab-Measured Influent Concentration ($\mu g/m^3$)		Removal Rate [1] ($\mu g/min$)		Projected Annual Discharge (lbs/year)	
	SSDS Extraction Sump 1	SSDS Extraction Sump 2	SSDS Extraction Sump 3	SSDS Extraction Sump 4	SSDS Extraction Sump 5	SSDS Extraction Sump 6	SSDS Extraction Sump 7			PCE	TCE	PCE	TCE	PCE	TCE
3/19/2020	9.0	9.0	9.0	NM	9.0	9.0	9.0	9.6	250	0.596	0.525	4.2	3.7	0.005	0.004
9/23/2020	9.0	9.0	8.0	NM	9.0	9.0	9.0	9.6	258	1.41	0.511	10.3	3.7	0.012	0.004
VIMMWP SSDS Operations Goals	**Within 25 percent of applied system vacuum at extraction sumps; or >0.005 IOW at any monitoring point beyond extraction sump**							**NA**	**NA**	**NA**				**1,000 lbs/year**	

Notes:
[1] Removal Rate = SVE flow * Measured PCE or TCE concentration

Acronyms and Abbreviations:

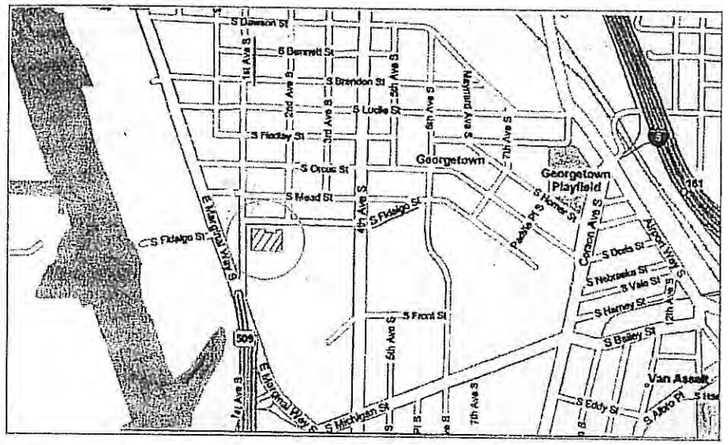
IOW = inches of water
lbs = pounds
µg = micrograms
m^3 = cubic meter
min = minute
NA = not applicable
NM = not measured
PCE = tetrachloroethene
scfm = standard cubic feet per minute
SSDS = subslab depressurization system
SSMP = subslab monitoring probe
SVE = soil vapor extraction
TCE = trichloroethene
VIMMWP = Vapor Intrusion, Inspection, Monitoring, and Maintenance Work Plan

APPENDIX A

Subslab Depressurization System As-Built Schematics

OLYMPIC MEDICAL BUILDING
City of Seattle
Department of Planning & Development

Olympic Medical Building
5900 1st. Avenue South
Seattle, Washington
98108-3248



MECHANICAL ENGINEER:

MANDATORY CODE COMPLIANCE

	VOC PIPING (VOLATILE ORGANIC COMPOUND)
	CONTINUATION OF PIPING
	TEE DOWN
	TEE UP
	ELBOW DOWN
	ELBOW UP
	EXHAUST FAN
	CAPPED END
	PLAN NOTE
	SECTION DESIGNATION SHEET ON WHICH SECTON IS DRAWN
	DETAIL DESIGNATION DETAIL NUMBER SHEET ON WHICH DETAIL IS DRAWN

AFF	ABOVE FINISHED FLOOR
BV	BALL VENT
CU	CONDENSING UNIT
EF	EXHAUST FAN
FA	FRESH AIR INTAKE
IE	INVERT ELEVATION
RD	ROOF DRAIN
RV	RELIEF VENT
RTU	ROOF TOP UNIT
TYP	TYPICAL
VOC	VOLATILE ORGANIC COMPOUND
VTR	VENT THRU ROOF

1. *EQUIPMENT AND MATERIAL REMOVED SHALL BECOME PROPERTY OF THE CONTRACTOR UNLESS NOTED OTHERWISE AND SHALL BE REMOVED OFF-SITE.*
2. *DRAWINGS ARE PARTLY DIAGRAMMATIC AND DON'T NECESSARILY SHOW EXACT CONDITIONS OF CONSTRUCTION. LOCATION OF PIPING SHALL BE FIELD VERIFIED TO DETERMINE THAT IT CLEARS ALL OPENINGS AT STRUCTURAL MEMBERS, CHASES AND THAT EQUIPMENT, ETC. HAVING FIXED LOCATIONS WILL BE CLEARED.*
3. *EXAMINE PREMISES AND BECOME FAMILIAR WITH EXISTING CONDITONS BEFORE STARTING WORK. FIELD VERIFY CONSTRUCTION MATERIALS OF FLOORS, WALLS, CEILINGS AND ROOFS BEFORE STARTING WORK. OTHER EXISTING MATERIALS AND EQUIPMENT ARE NOT SHOWN ON THESE DRAWINGS SUCH AS DUCTWORK, HVAC EQUIPMENT, HEATING PIPING, GAS PIPING, CONDUIT, ETC. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND SIZES OF EXISTING MATERIALS AND EQUIPMENT AND SHALL OFFSET NEW PIPING AS NECESSARY AROUND EXISTING MATERIALS AND EQUIPMENT.*
4. *REMOVE MEANS, REMOVE AND DISPOSE OF UNLESS SPECIFICALLY DIRECTED OTHERWISE.*
5. *DO NOT ALLOW ANY WORK (PIPING/EQUIPMENT) TO BE COVERED UP OR ENCLOSED UNTIL INSPECTED, TESTED AND APPROVED BY AUTHORITY HAVING JURISDICTION AND/OR THE OWNER'S REPRESENTATIVE.*
6. *ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE CONFLICTS OCCUR, BRING THOSE TO THE ATTENTION OF THE DESIGN ENGINEER IMMEDIATELY AND BEFORE INSTALLING THE PIECE OF EQUIPMENT OR ITEM.*
7. *THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SAW CUTTING AND CORE DRILLING AND PATCHING OF FLOORS, WALLS, CEILINGS AND ROOFS IN ORDER TO INSTALL THE NEW VOC SYSTEMS.*
8. *THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL PERMITS, INSPECTIONS AND FEES REQUIRED IN CONNECTION WITH THIS PROJECT.*

M-1	COVER SHEET
M-2	SITE PLAN
M-3	ROOF PLAN
M-4	DETAILS & SCHEDULE

PLOT SCALE: 1/4"=1'-0"

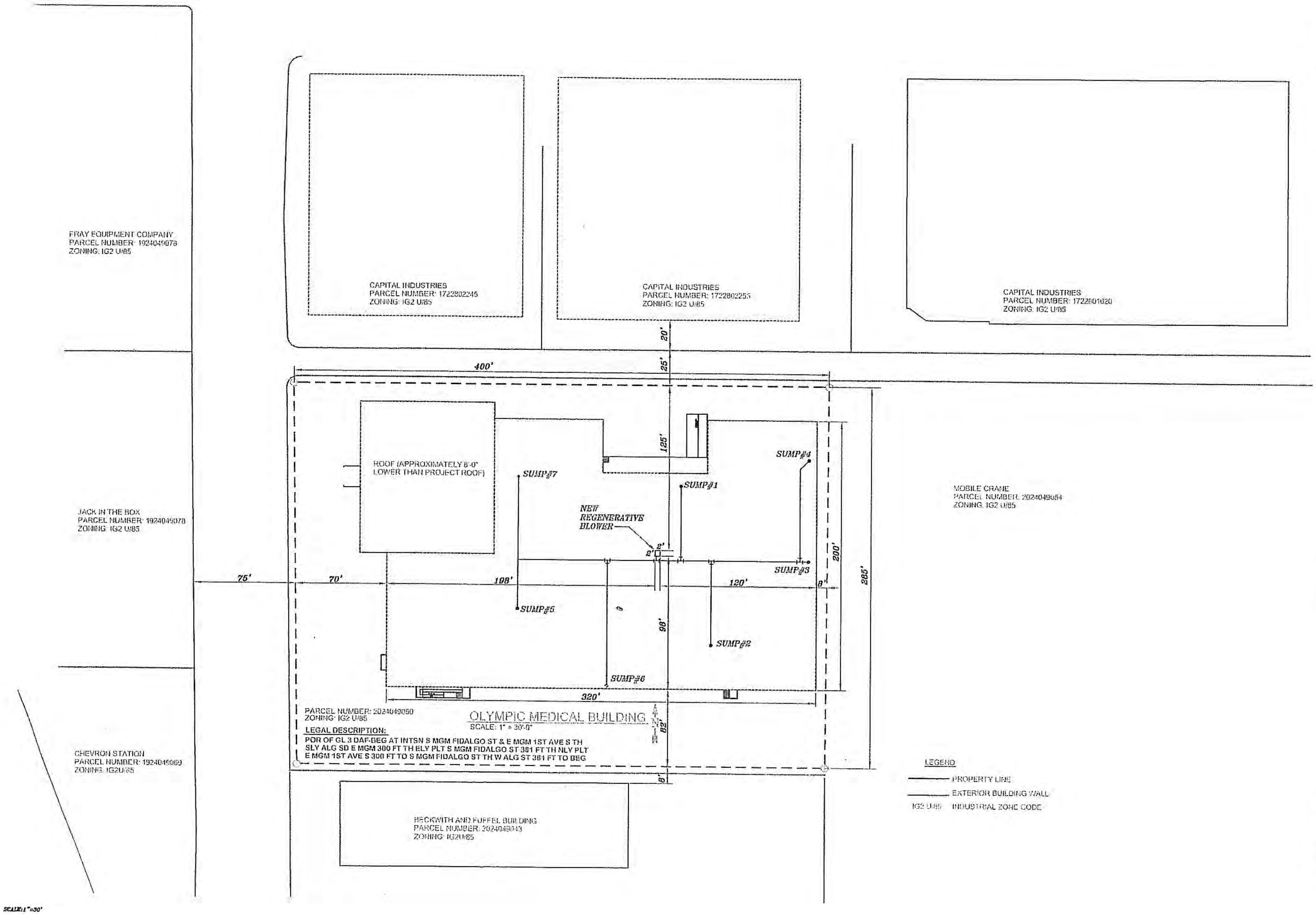
RADON TESTING AND INSTALLATION
NORTH 2801 MONROE, SUITE A
SPOKANE, WASHINGTON
(509) 326-5127

98108-3248

PROJECT: SEATTLE, WASHINGTON

JOB NO.: 6198563
DATE: 11/07/08
DRAWN: KJ
CHECKED: DG

SHEET NO.:



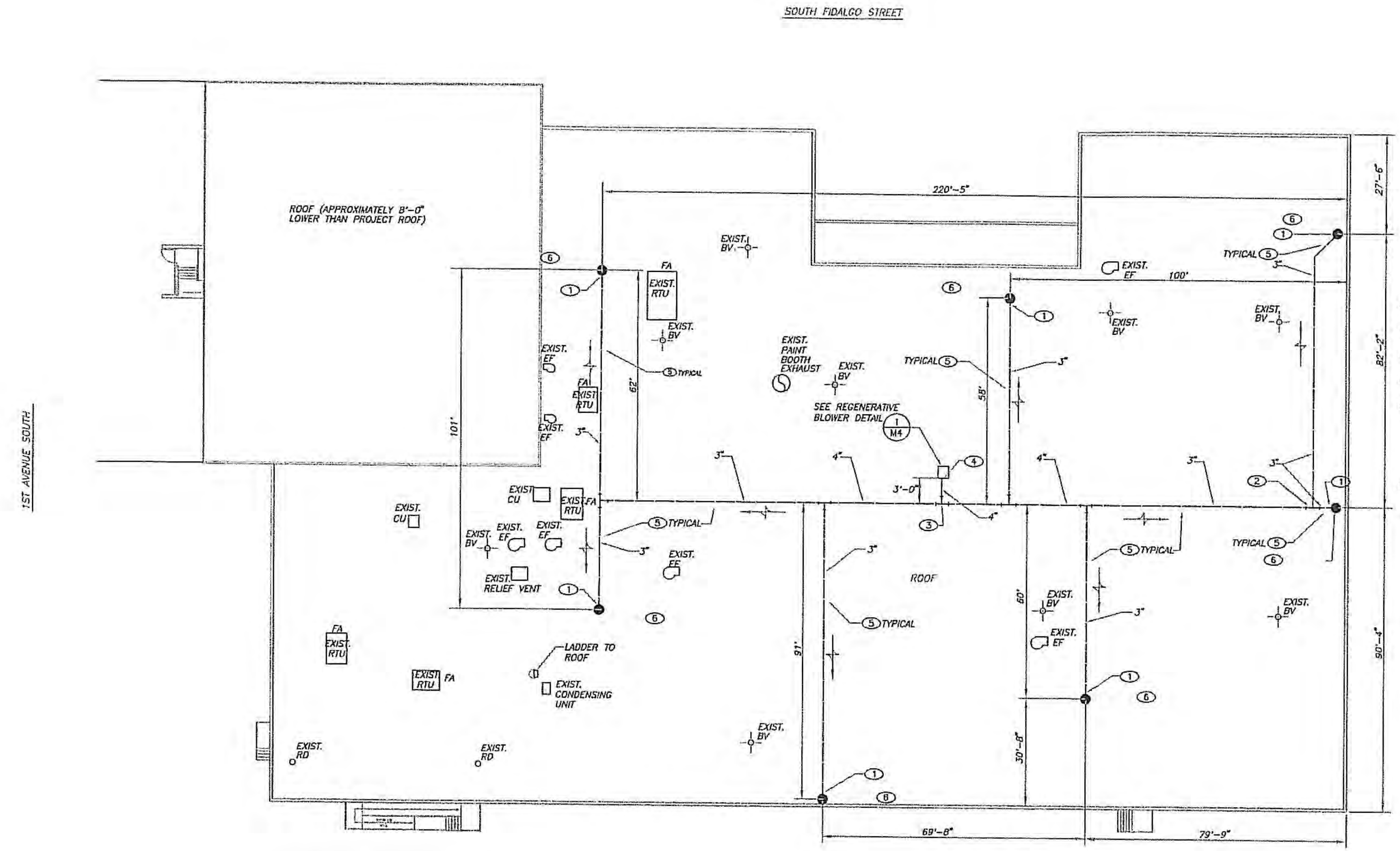
RADON MITIGATION TESTING AND INSTALLATION

NORTH 2801 MONROE, SUITE A
SPOKANE, WASHINGTON
(509) 326-5127

326-5127

PROJECT: SEATTLE, WASHINGTON 98108-3248

JOB NO.: 6198563
DATE: 11/07/08
DRAWN: KJ
CHECKED: DG
SHEET NO.:



SCALE: 1/16" =1'-0"

PLAN NOTES:

1. PIPE INVERT ELEVATION AT THIS APPROXIMATE LOCATION IS 12 INCHES ABOVE ROOF LEVEL.
2. PIPE INVERT ELEVATION AT THIS APPROXIMATE LOCATION IS 22 INCHES ABOVE ROOF LEVEL.
3. PIPE INVERT ELEVATION AT PIPE TEE AT THIS APPROXIMATE LOCATION IS 35 INCHES ABOVE ROOF LEVEL.
4. PIPE INVERT ELEVATION AT INLET CONNECTION TO BLOWER FAN IS 38 INCHES ABOVE ROOF LEVEL.
5. CONTRACTOR SHALL PROVIDE ROOF PIPE SUPPORT SADDLES A MINIMUM OF EVERY 6 FEET FOR PIPE SUPPORT ON ROOF. PIPING ON ROOF SLOPES 1/8" PER FOOT. PIPE SADDLE SUPPORT HEIGHTS VARY. CONTRACTOR SHALL FIELD VERIFY DURING INSTALLATION OF PIPE SADDLE SUPPORTS THE EXACT HEIGHTS FOR EACH SUPPORT SADDLE INSTALLED ON ROOF AS REQUIRED.
6. SEE DETAIL SHEET M4 FOR SUMP INSTALLATIONS SUMP #1 THROUGH SUMP #7.

EXIST. RTU = 80 sq. ft. x 5 = 400 sq. ft.
EXIST. EF = 4 sq. ft. x 7 = 28 sq. ft.
EXIST. CU = 9 sq. ft. x 4 = 36 sq. ft.
EXIST. BV = 1 sq. ft. x 9 = 9 sq. ft.
EXIST. RV = 2 sq. ft. x 1 = 2 sq. ft.
EXIST. RD = .5 sq. ft. x 2 = 1 sq. ft.
NEW BLOWER= 4 sq. ft. x 1 = 4 sq. ft.
TOTAL APPROX. SQ.FT. = 480 sq. ft.

ROOF AREA = 52,800 GSF
EXISTING HVAC EQUIPMENT AREA = 476 GSF
NEW HVAC EQUIPMENT AREA = 4 GSF

$$\text{ROOF COVERAGE} = \frac{\text{EXIST. HVAC (476) + NEW HVAC (4)}}{52{,}800} \times 100\% = .91\%$$

NEW REGENERATIVE BLOWER = 83 dBA
DISTANCE TO CLOSEST PROPERTY LINE = 130 FT.
dBA REDUCTION FROM EQUIPMENT (TABLE 2) 38 dBA
NET SOUND LEVEL = 83 dBA-38 dBA = 45 dBA

PLOT SCALE: 1/4"=1'-0"

THOMAS R. GERARD — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
EXPIRES 7/12/09

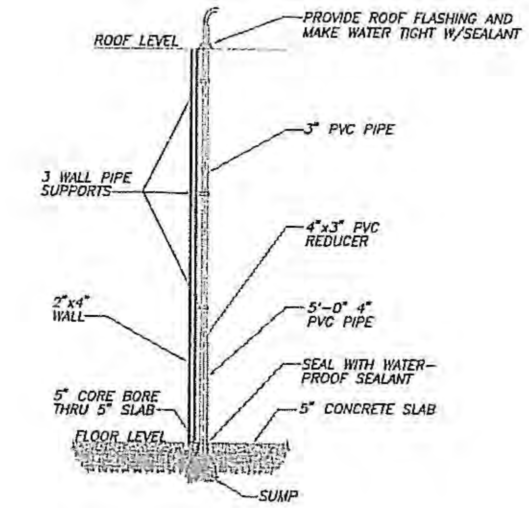
326-5127

RADON MITIGATION TESTING AND INSTALLATION
NORTH 2801 MONROE, SUITE A
SPOKANE, WASHINGTON
(509) 326-5127

98108-3248

PROJECT:
SEATTLE, WASHINGTON

JOB NO.: 6198563
DATE: 11/07/08
DRAWN: KJ
CHECKED: DG
SHEET NO.:



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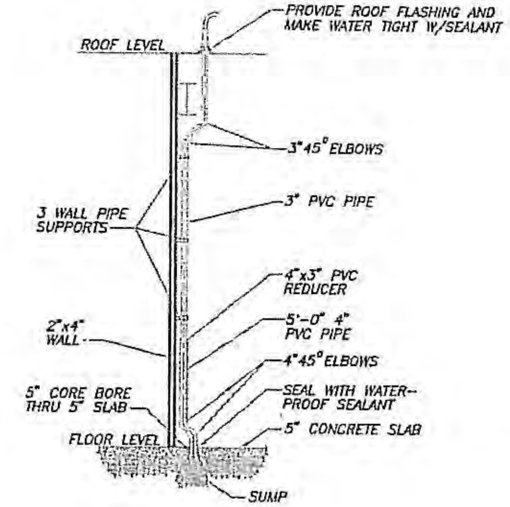

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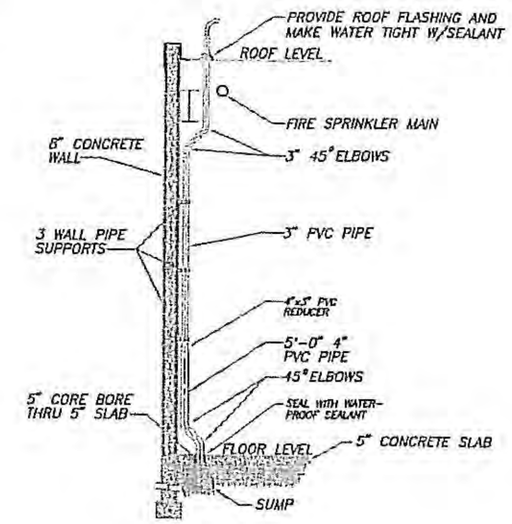

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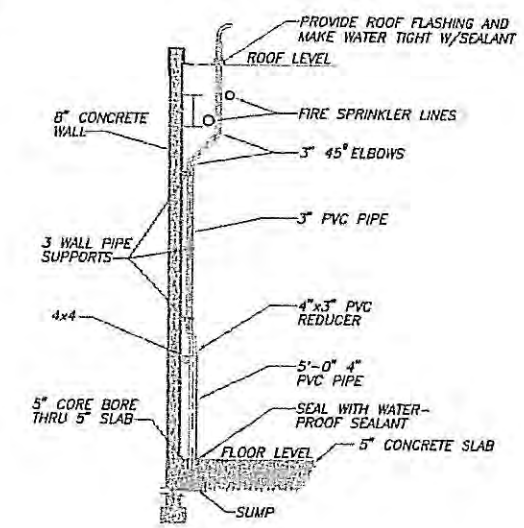

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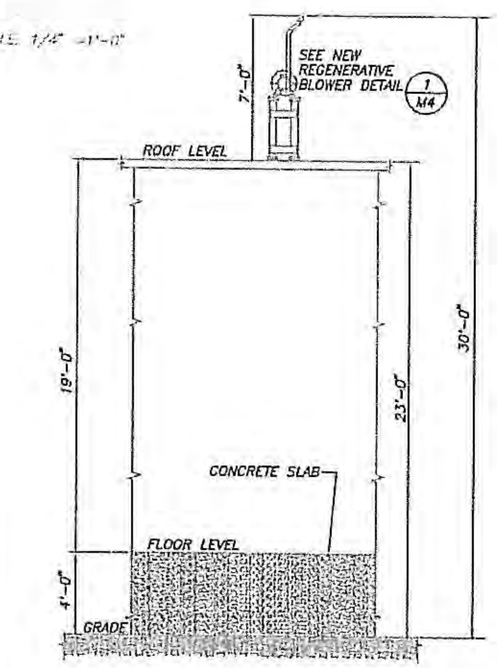
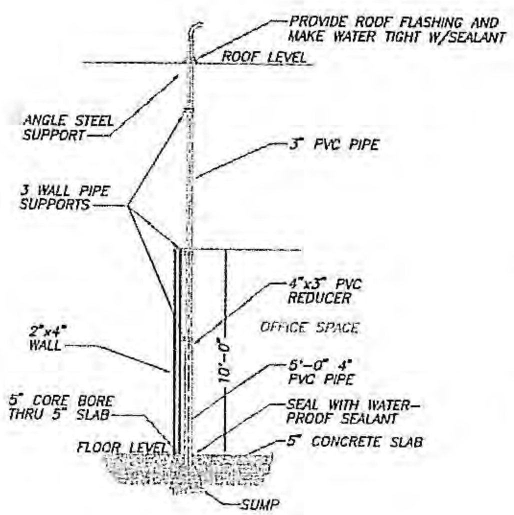


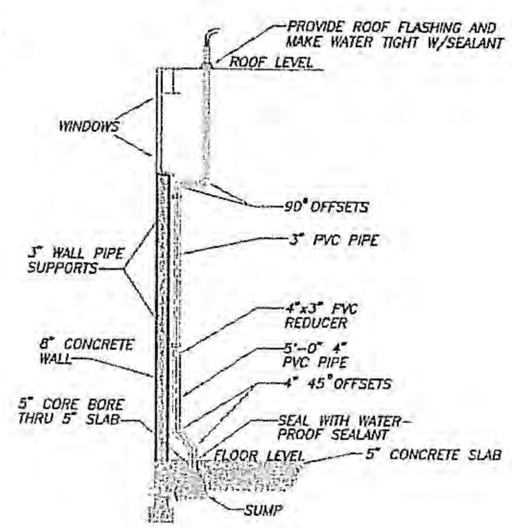
REGENERATIVE BLOWER SCHEDULE													
UNIT #	BRAND NAME	MODEL #	MOTOR ENCLOSURE SHAFT MATERIAL	HP	VOLTAGE	PHASE-FREQUENCY	INSULATION CLASS	NEMA RATED MOTOR AMPS	SERVICE FACTOR	LOCKED ROTOR AMPS	MAXIMUM BLOWER AMPS	RECOMMENDED NEMA STARTER SIZE	SHIPPING WEIGHT
1	ROTRON	DR656K72X	TEFC-CS	3	230/460	3-60-Hz	F	7.4/3.7	1.15	54/27	8.8/4.4	0/0	114 lb.

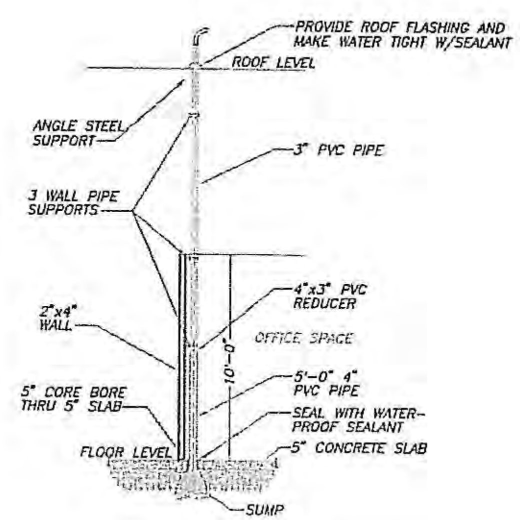
NOTES:

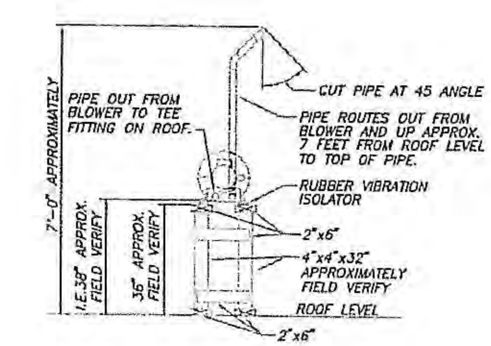
1. MAXIMUM FLOW: 210 SCFM; MAXIMUM PRESSURE: 106 IWG; MAXIUMUM VACUUM: 6.39"Hg (87 IWG); CAST ALUMINUM BLOWER HOUSING, IMPELLER & COVER, CAST IRON MUFFLER EXTENSION & FLANGES (THREADED); PERMANENTLY SEALED BALL BEARINGS; INLET & OUTLET INTERNAL MUFFLING.
2. MANUFACTURED BY AMETEK TECHNICAL AND INDUSTRIAL PRODUCTS KENT, OHIO 44240 e-mail: rotronindustrical@ametek.com internet: www.ametektmd.com
2. REGENERATIVE BLOWER MOTOR TO BE HIGH EFFICIENCY. BLOWER TO MEET 2006 NON-RESIDENTIAL ENERGY CODE EFFICIENCY REQUIREMENTS AS A MINIMUM.

SCALE: 1/4" =1'-0"









SCALE: 1/4" =1'-0"

SCALE: 1/4" =1'-0"

SCALE: 1/2" =1'-0"

SCALE: 1/4" =1'-0"

SCALE: 1/4" =1'-0"

THOMAS R. GERARD — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 7/29/09

326-5127

RADON MITIGATION TESTING AND INSTALLATION
NORTH 2801 MONROE, SUITE A
SPOKANE, WASHINGTON
(509) 326-5127

98108-3248

PROJECT:
SEATTLE, WASHINGTON

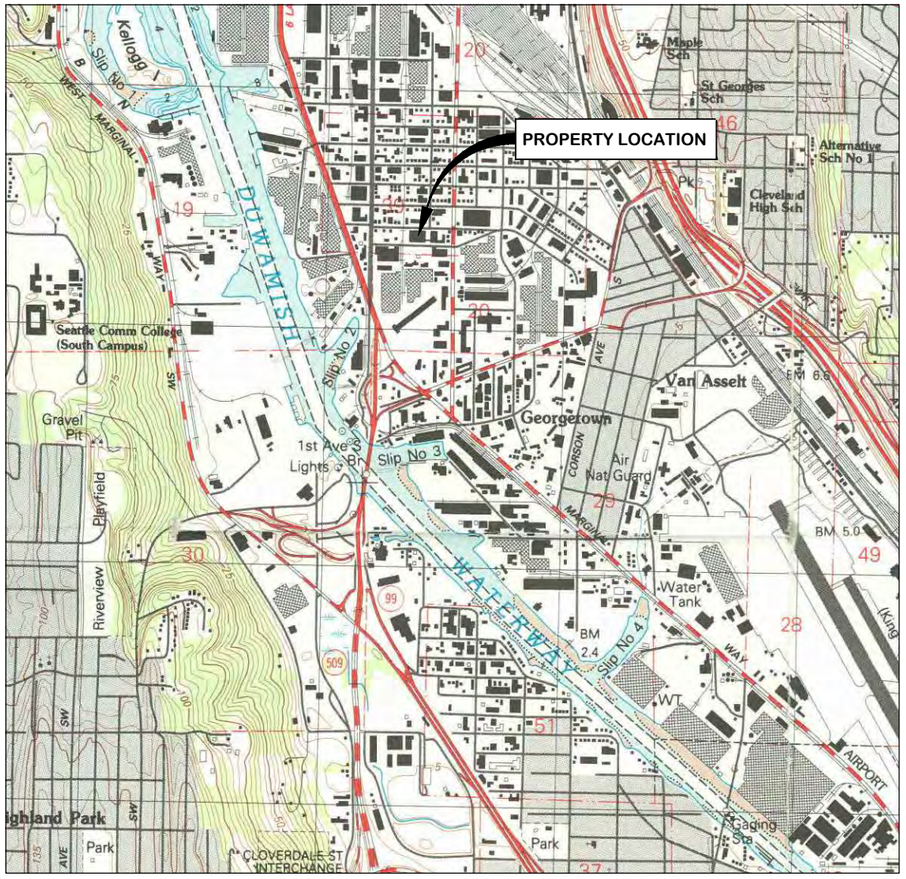
JOB NO.: 6198563
DATE: 11/07/08
DRAWN: KJ
CHECKED: DG

SHEET NO.:

SCALE: 1/4" =1'-0"

SUB-SLAB DEPRESSURIZATION SYSTEM

PACIFIC FOOD SYSTEMS - NORTH BUILDING
5815 4TH AVE SOUTH
SEATTLE, WA 98108



REFERENCE: 7.5 MINUTE USGS QUADRANGLE SOUTH SEATTLE, WASHINGTON. DATED 1983

SITE LOCATION MAP
(NOT TO SCALE)

0 500
APPROXIMATE SCALE IN METERS

WASHINGTON

DRAWING INDEX

SHEET NO.	DRAWING TITLE
1	TITLE SHEET, SITE LOCATION MAP, AND DRAWING INDEX
2	GENERAL NOTES, LEGEND, SYMBOLS, AND ABBREVIATIONS
3	SITE PLAN WITH SUB-SLAB DEPRESSURIZATION SYSTEM
4	DETAILS

CLYDE N. MOORE
STATE OF WASHINGTON
14087
REGISTERED
PROFESSIONAL ENGINEER

	9/25/14	ISSUED FOR CLIENT REVIEW	CM/DEW	CM	
	DATE	DESCRIPTION	BY	CKD.	APP.

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California: Oakland | Sacramento | Irvine

PREPARED FOR
CAPITAL INDUSTRIES,INC.
5801 3RD AVE. SOUTH
SEATTLE, WA 98108

SUB-SLAB DEPRESSURIZATION SYSTEM

TITLE SHEET,
SITE LOCATION MAP, AND
DRAWING INDEX

SCALE: AS SHOWN
PROJECT NO.: 457-007
FILE NAME: SYSTEM.dwg
SHEET NO.: 1 OF 4

ELECTRICAL ABBREVIATIONS

A/AMP	AMP
AC	ALTERNATING CURRENT
BD	BUS DUCT
C	CURRENT
CB	CIRCUIT BREAKER
CLG	CEILING
DC	DIRECT CURRENT
DIS	DISCONNECT
DP	DOUBLE POLE
DT	DOUBLE THROW
EG	ENCLOSED AND GASKETED
E(OH)	ELECTRICAL (OVERHEAD)
E(UG)	ELECTRICAL (UNDERGROUND)
EMER	EMERGENCY
EPO	EMERGENCY POWER OFF
EMT	ELECTRICAL METALLIC TUBING
EXP	EXPOSED
FBO	FURNISHED BY OTHERS
FLEX	FLEXIBLE METAL CONDUIT
FRN	DUAL ELEMENT FUSE
GEN	GENERATOR
GFIC	GROUND FAULT INTERRUPTER
GND	GROUND
GRC	GALVANIZED RIGID CONDUIT
HOA	HAND-OFF-AUTO SWITCH
IRD	INFRARED DETECTOR
HP	HORSE POWER
HZ	CYCLES PER SECOND
JB	JUNCTION BOX
LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
M	MOTOR/MOTOR STARTER COIL
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NON-FUSED
NO	NORMALLY OPEN
OL	OVERLOADS
PBS	PUSHBUTTON
PF	POWER FACTOR
PL	PILOT LIGHT
PLC	PROGRAMMABLE LOGIC CONTROLLER
RC	RIGID CONDUIT
RCPT	RECEPTACLE
SN	SOLID NEUTRAL
SP	SINGLE POLE
ST	SINGLE THROW
SW	SWITCH
TF/TRAN	TRANSFORMER
UF	UNDERFLOOR
UG	UNDERGROUND
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
VP	VAPOR PROOF
WHT	WHITE
WP	WEATHER PROOF
XP	EXPLOSION PROOF

STANDARD ABBREVIATIONS

AF	AIR FILTER
AB	AGGREGATE BASE
AC	ASPHALTIC CONCRETE
APPROX	APPROXIMATELY
AF	AIR FILTER
AS	AIR SPARGE
BF	BLIND FLANGE
B.G.S.	BELOW GROUND SURFACE
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BV	BALL VALVE
CONC	CONCRETE
CPLG	COUPLING
℄ /CL	CENTERLINE
CV	CONTROL VALVE/CHECK VALVE
DC	DOUBLE CONTAINED
/DIA	DIAMETER
DWG	DRAWING
DP	DUAL PHASE
DPI	DIFFERENTIAL PRESSURE INDICATOR
EF	EACH FACE
EL/ELEV	ELEVATION
ELEC	ELECTRICAL
ELB	ELBOW
EPDM	ETHYLENE PROPYLENE RUBBER
EXIST/(E)	EXISTING
EXP	EXPANSION
EW	EACH WAY
EA	EACH
FC	FAIL CLOSE
FO	FAIL OPEN
FLXC	FLEXIBLE CONNECTION
FM	FLOW METER
FL	FLOW LINE
FT	FOOT
FUT	FUTURE
FIN GR	FINISHED GRADE
FE	FLANGED END
FNPT	FEMALE NATIONAL PIPE THREAD
GA	GAUGE
GAC	GRANULAR ACTIVATED CARBON
GALV	GALVANIZED
GI	GALVANIZED IRON
GPM	GALLONS PER MINUTE
GR	GRADE
GND	GROUND
GSKT	GASKET
GW	GROUNDWATER
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HP	HORSEPOWER/HIGH PRESSURE
HR	HOUR
HS	HOSE
HYD	HYDRANT
HOA	HAND OFF AUTOMATIC
ID	INSIDE DIAMETER
IN	INCHES
INV	INVERT
IPS	IRON PIPE SIZE
JT	JOINT
JB	JUNCTION BOX
KO	KNOCK OUT
LSHH	LEVEL SWITCH
M	MOTOR
MAX	MAXIMUM
MH	MANHOLE
MJ	MECHANICAL JOINT
MIN	MINUTE/MINIMUM
MISC	MISCELLANEOUS
MNPT	MALE NATIONAL PIPE THREAD
MP	METER PUMP
MON.PORT	MONITORING PORT
MW	MONITORING WELL
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
N	NEW
NTS	NOT TO SCALE
NPDES	NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM
OC	ON CENTER
OD	OUTSIDE DIAMETER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OVHD	OVERHEAD
#/LB	POUND
PB	PULL BOX
PBF	PROVIDED BY FARALLON
PC	PORTLAND CEMENT
PCC	PORTLAND CEMENT CONCRETE
PG	PRESSURE GAS
PL	PROPERTY LINE/PIPE LINE
PO	PUMP OUT
P	PRESSURE
PRV	PRESSURE RELEASE VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
PSIG	POUNDS PER SQUARE INCH, GAUGE
PTW	PRESSURE TREATMENT
PVC	POLYVINYL CHLORIDE
PV	PROCESS VARIABLE
PR	PAIR
PUE	PUBLIC UTILITY EASEMENT
R	RADIUS/RISER
RC	REINFORCED CONCRETE
REQ	REQUIRED
REF	REFERENCE
SCH	SCHEDULE
SDR	STANDARD DIMENSION RATIO
SECT	SECTION
SHT	SHEET
SPEC	SPECIFICATION
SQ	SQUARE
STA	STATION
STD	STANDARD
STL	STEEL
SBO	SUPPLIED BY OWNER
ST	SAMPLE TAP
STR	STRAINER
SS	STAINLESS STEEL
STL	STEEL
SVE	SOIL VAPOR EXTRACTION
SW	SWITCH
TYP	TYPICAL
TOC	TOP OF CASING/CURB
TOS	TOP OF STEEL
TOW	TOP OF WALL
UBC	UNIFORM BUILDING CODE
UGPS	UNDERGROUND PULL SECTION
UTIL	UTILITY
V	VALVE/VENT/VOLTS
VAC	VACUUM
VAR	VARIES/VARIABLE
VERT	VERTICAL
VP	VAPOR
VRV	VACUUM RELIEF VALVE
W/	WITH
W/O	WITHOUT
WS	WATER SURFACE/WATER STOP

INSTRUMENTATION ABBREVIATIONS AND SYMBOLS

INSTRUMENT LEGEND

	FIRST LETTER INITIATING VARIABLE	SUCCEEDING LETTERS OUTPUT FUNCTIONS
A	ANALYSIS	ALARM
B	BURNER	
C	CONDUCTIVITY	CONTROL
D	DENSITY	DIFFERENTIAL
E	POTENTIAL (VOLTS)	PRIMARY ELEMENT
F	FLOW RATE	RATIO (FRACTION)
G	FIRE ALARM	GLASS (SIGHT GAUGE)
H	HAND (MANUALLY)	HIGH
I	CURRENT (AMPERES)	INDICATE
J	POWER	
K	TIME	
L	LEVEL	LEAK, LOW
M	MOISTURE/HUMIDITY	LIGHT (PILOT)
N	EQUIPMENT STATUS	
P	PRESSURE/VACUUM	POINT (TEST CONNECTION)
Q	QUANTITY	INTEGRATE (TOTALIZE)
R		RECORD/PRINT
S	SPEED	SWITCH
T	TEMPERATURE	TRANSMIT
U	MULTIVARIABLE	MULTIFUNCTION
V	VIBRATION/VOLUME	VALVE/DAMPER
W	WEIGHT/FORCE/TORQUE	
X	UNCLASSIFIED	UNCLASSIFIED
Y		RELAY/COMPUTE
Z	POSITION	DRIVE/ACTUATE

INSTRUMENT SYMBOLS

SYMBOL	DESCRIPTION
M	MOTOR
HOA	HAND-OFF-AUTO SELECTOR SWITCH
	LOCALLY MOUNTED INSTRUMENT
	CONTROL PANEL MOUNTED INSTRUMENT
I	INTERLOCK
-10	PLC SHUTDOWN ALARM

STANDARD SYMBOLS

SECTION — 4 / 3|6 — DETAIL NUMBER; REFERENCED

CURRENT

PIPING, ELECTRICAL AND EQUIPMENT SYMBOLS

- GATE VALVE
- GLOBE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- DIAPHRAGM OPERATED VALVE
- SOLENOID VALVE (S)
- MOTOR OPERATED VALVE (M)
- PRESSURE REGULATING VALVE
- DRAIN (D)
- WELD CAP
- SCREWED CAP
- SCREWED PLUG
- FLANGE
- BLIND FLANGE
- REDUCER/INCREASER
- DIRECTION OF FLOW
- UNION
- FLEXIBLE PIPE COUPLING
- BLOWER OR FAN
- CENTRIFUGAL PUMP
- PITOT TUBE
- STRAINER
- TRAP
- FILTER (AF)
- DIAMETER
- FEMALE ADAPTER
- SILENCER (S)
- NEEDLE VALVE
- FLOW METER
- HOSE BIB
- SAMPLE TAP/MONITORING PORT
- HEAT EXCHANGER
- PRESSURE RELIEF OR AIR RELIEF
- VACUUM RELIEF
- NO — NORMALLY OPEN
- NC — NORMALLY CLOSED
- MAGNETIC STARTER
- DUPLEX RECEPTACLE, 15A; WP-WEATHER PROOF
- ETM — ELAPSED TIME METER
- FUSE
- FUSED DISCONNECT
- CAMLOCK CONNECTION
- VERTICAL PIPERUN
- GROUND
- GROUND ROD (3/4" COPPER WELD)
- HEATER STRIP
- J — JUNCTION BOX, PB-PULLBOX
- KWH — KILOWATT HOUR METER
- M — MOTOR
- MOTOR OVERLOAD
- NON-FUSABLE DISCONNECT SWITCH
- PILOT LIGHT, R=RED, W=WHITE, G=GREEN
- SELECTOR SWITCH AO=AUTO OFF, HOA=HAND OFF AUTO
- S2 — SWITCH, 120-277V, 2-2POLE, 20A
- T — THERMOSTAT
- TD — TIME DELAY RELAY, CR=CONTROL RELAY
- TRANSFORMER
- UNDERGROUND PULLBOX
- W.P. — WEATHER PROTECTED
- 120/208V PANEL
- 277/480V PANEL
- *HIGH LIGHT STANDARD
- X — REVISION TO PLANS

GENERAL NOTES

1. A COPY OF THE PROJECT DESIGN DRAWINGS AND SPECIFICATIONS SHALL BE MAINTAINED ON THE JOB SITE AT ALL TIMES.
2. COPIES OF ALL PERMITS SHALL BE MAINTAINED ON THE JOB SITE AT ALL TIMES. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS.
4. BURIED UTILITIES SHOWN ON THE DRAWINGS ARE FOR GENERAL INFORMATION ONLY. UTILITY LOCATIONS ARE APPROXIMATE AND MAY NOT BE INCLUSIVE OF ALL UTILITIES THAT EXIST ON THE PROPERTY.
5. THE CONTRACTOR SHALL HAVE A PRIVATE UTILITY LOCATE SERVICE VERIFY ALL UTILITIES AND MARK THEIR LOCATIONS ON THE GROUND PRIOR TO STARTING CONSTRUCTION. FARALLON SHALL BE CONTACTED IMMEDIATELY IF A CONFLICT IS FOUND BETWEEN EXISTING UTILITIES AND THE PROJECT DESIGN.
6. FARALLON SHALL BE NOTIFIED OF DISCREPANCIES BETWEEN CONTRACT DRAWINGS AND ACTUAL SITE CONDITIONS.
7. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE JOB SITE CONDITIONS AND ENSURE THE SAFETY OF ALL PERSONS AND PROPERTY FOR THE DURATION OF ON SITE PROJECT WORK. THE CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, AND PAVING FROM DAMAGE, DIRECT OR INDIRECT, RESULTING FROM THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY OVER THE DURATION OF ON SITE ACTIVITIES AND NOT BE LIMITED TO NORMAL WORKING HOURS.
8. ALL EXCAVATIONS SHALL BE PERFORMED IN STRICT ACCORDANCE WITH APPLICABLE U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE WASHINGTON INDUSTRIAL SAFETY AND HEALTH ACT (WISHA) REGULATIONS. THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR THE SAFETY OF ALL CONSTRUCTION OPERATIONS.
9. NO TRENCHES SHALL BE LEFT OPEN WHEN WORK IS NOT IN PROGRESS. ALL OPEN EXCAVATIONS SHALL BE FENCED.

CLYDE N. MOORE — STATE OF WASHINGTON — 14087 — REGISTERED PROFESSIONAL ENGINEER

	DATE	DESCRIPTION	BY	CKD.	APP.
	9/25/14	ISSUED FOR CLIENT REVIEW	CM/DEW	CM	

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5801 3RD AVE. SOUTH
SEATTLE, WA 98108

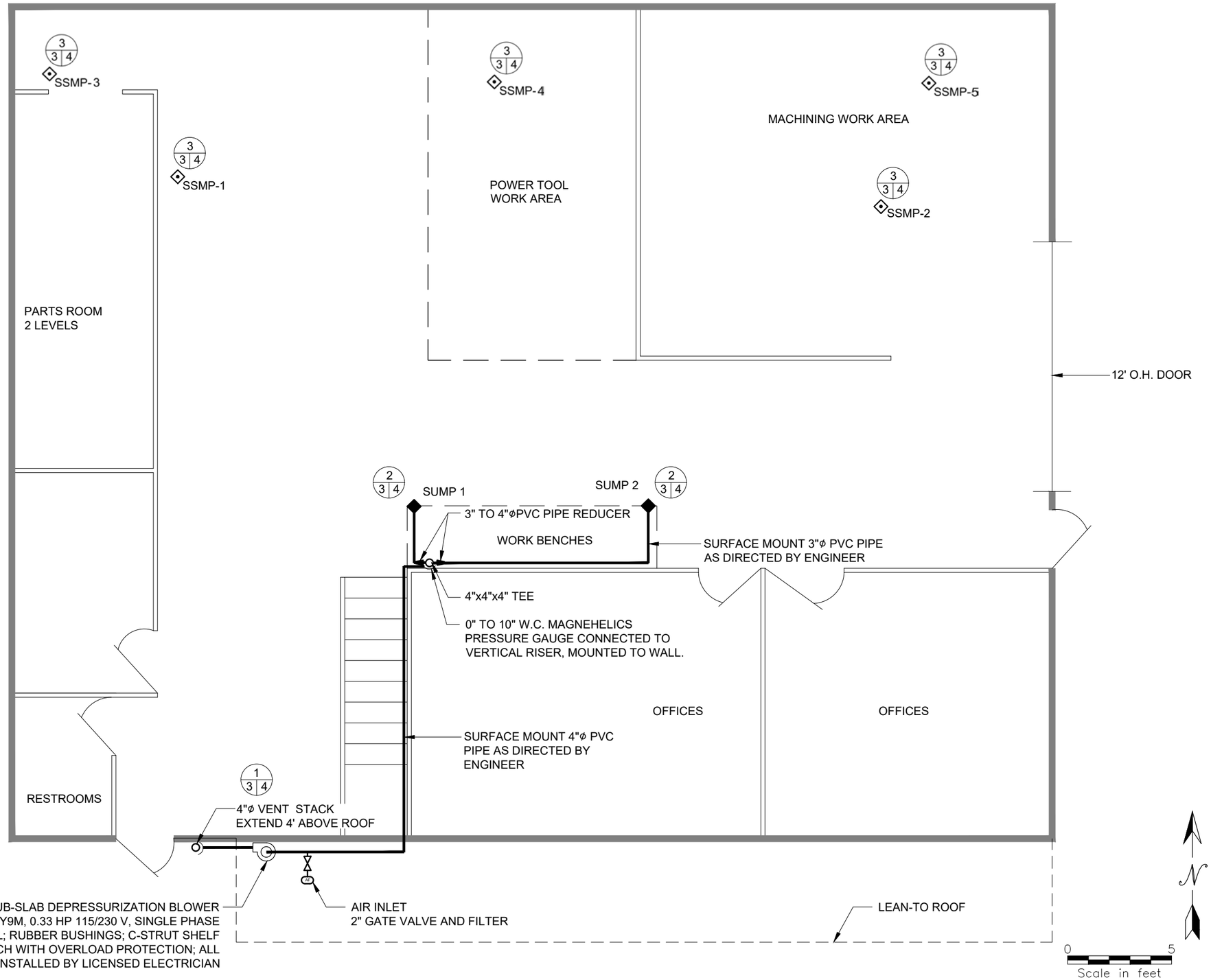
SUB-SLAB DEPRESSURIZATION SYSTEM

GENERAL NOTES, LEGEND,SYMBOLS, AND ABBREVIATIONS

SCALE: AS SHOWN
PROJECT NO.: 457-007
FILE NAME: SYSTEM.dwg
SHEET NO.: 2 OF 4

NOTES:

1. SEAL ALL CONCRETE FLOOR CRACKS, LARGER THAN HAIRLINE CRACKS, WITH THOROSEAL WATERPROOF CEMENT-BASED COATING, (www.thoroproducts.com) MIXED WITH ACRYL-60 AT MFG. RECOMMEND RATE. CRACKS TO BE THOROUGHLY CLEANED WITH HIGH-PRESSURE (2,500 psi min) WATER SPRAY INCORPORATING OIL-GREASE REMOVING DETERGENT AND BRUSH TO COMPLETELY REMOVE OIL, GREASE, AND PAINT FROM CONCRETE SURFACE WITHIN 1-INCH OF THE CRACKS TO BE SEALED.
2. ALL EXPOSED PIPE TO BE PERMANENTLY LABELED "DEPRESSURIZATION SYSTEM PIPE FOR INDOOR AIR PROTECTION", TWO PLACES INSIDE, AND NEXT TO BLOWER AS DIRECTED BY ENGINEER.



CLYDE N. MOORE
STATE OF WASHINGTON
14087
REGISTERED
PROFESSIONAL ENGINEER

	11/3/14	REISSUED FOR CLIENT REVIEW	ROL/DEW	CM	
	9/25/14	ISSUED FOR CLIENT REVIEW	CM/DEW	RM	
	DATE	DESCRIPTION	BY	CKD.	APP.

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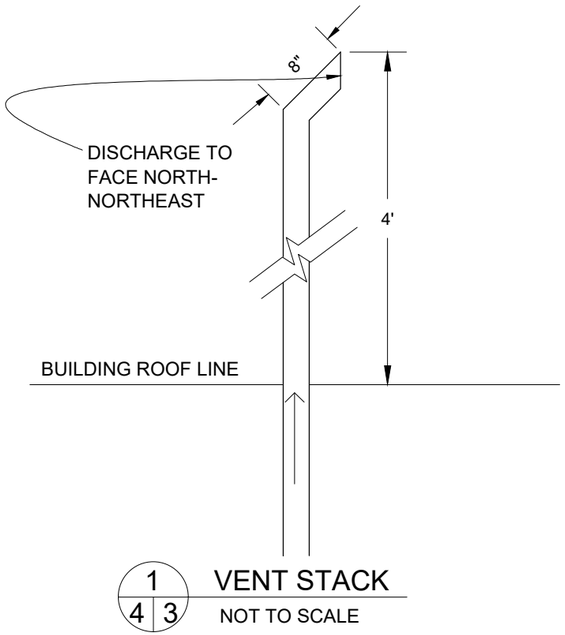
SEATTLE, WA 98108

SUB-SLAB DEPRESSURIZATION SYSTEM

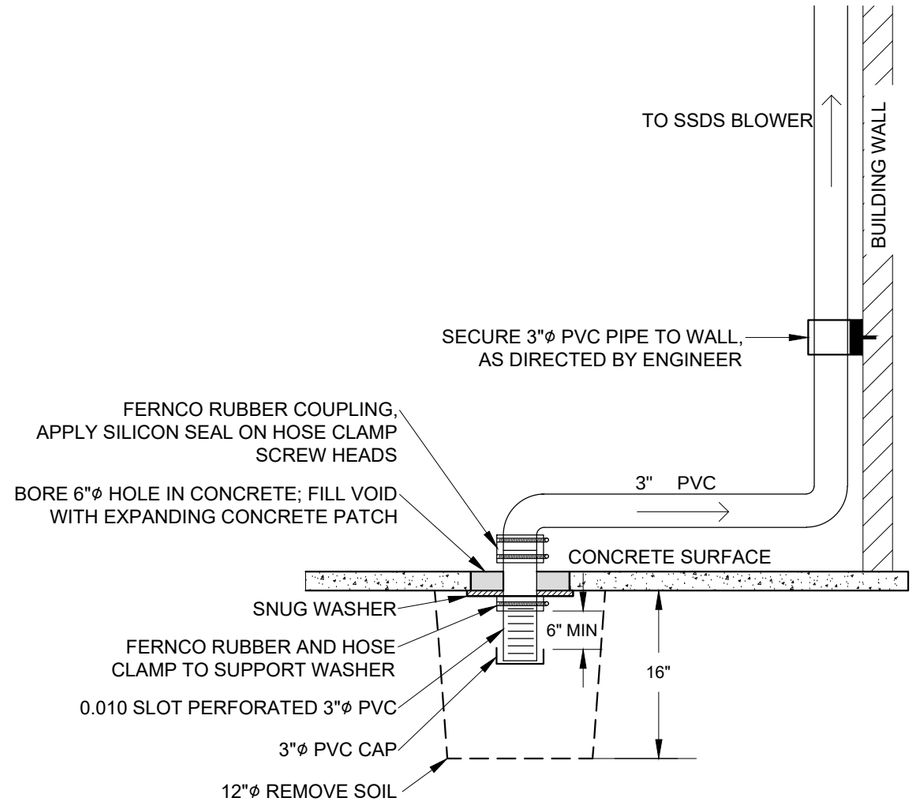
SITE PLAN WITH SUB-SLAB DEPRESSURIZATION SYSTEM

SCALE	AS SHOWN
PROJECT NO.	457-007
FILE NAME:	SYSTEM.dwg
SHEET NO.	3
OF	4

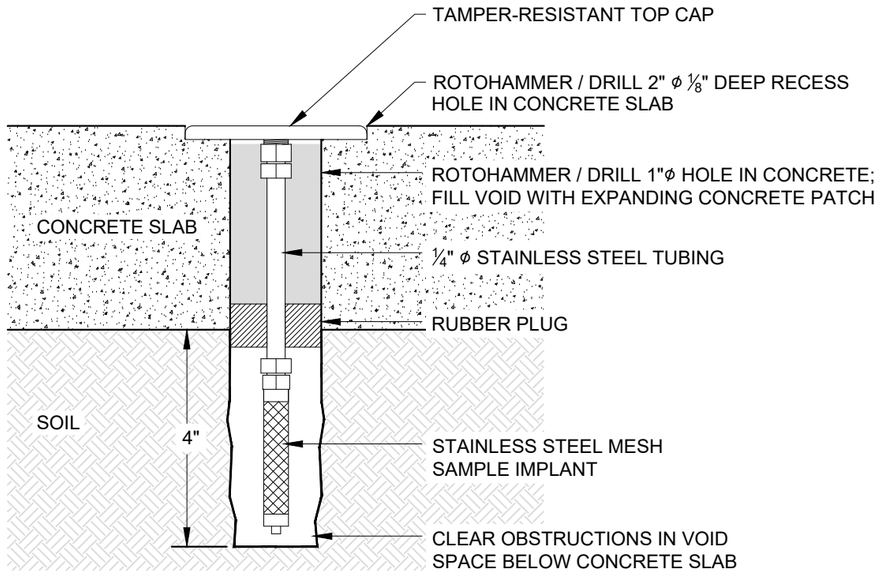


1 / 4 3 VENT STACK
NOT TO SCALE

NOTE:
1. VENT STACK TO BUILDING SUPPORT CONNECTIONS TO BE APPROVED BY ENGINEER
2. VENT TO BE LOCATED AT LEAST 10 FT FROM CLOSEST SIDE OF ANY DOOR, WINDOW, OR OTHER OPENING INTO BUILDING INTERIOR, AND TO HVAC/VENTILATION INLET.



2 / 4 3 SUMP DETAIL
NOT TO SCALE



3 / 4 3 SUB-SLAB MONITORING PORT
NOT TO SCALE

NOTE:
1. AMS SUB-SLAB GAS VAPOR PROBE INSTALLED FOR SUB-SLAB MONITORING PORT. INSTALLED TO VENDOR SPECIFICATIONS.
2. INSTALL SUB-SLAB MONITORING PORT WHERE IT WILL BE PROTECTED FROM DAMAGE AND ACCESSIBLE DURING SUB-SLAB MONITORING EVENTS.
3. DO NOT INSTALL NEAR DOOR, EXTERIOR WALL NOR NEAR CRACK IN SLAB.

	DATE	DESCRIPTION	BY	CKD.	APP.
	11/3/14	REISSUED FOR CLIENT REVIEW	ROL/DEW	CM	
	9/25/14	ISSUED FOR CLIENT REVIEW	CM/DEW	RM	

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SUB-SLAB DEPRESSURIZATION SYSTEM

DETAILS

SCALE: AS SHOWN
PROJECT NO.: 457-007
FILE NAME: SYSTEM.dwg
SHEET NO.: 4 OF 4

APPENDIX B

Analytical Laboratory Reports

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Farallon Consulting
Jen Moore
975 5th Ave NW
Issaquah, WA 98027

RE: Capital Industries
Work Order Number: 2003352

March 30, 2020

Attention Jen Moore:

Fremont Analytical, Inc. received 4 sample(s) on 3/20/2020 for the analyses presented in the following report.

Volatile Organic Compounds-EPA Method TO-15 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *03/30/2020*

CLIENT: Farallon Consulting
Project: Capital Industries
Work Order: 2003352

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2003352-001	5815N-IA8-031920	03/19/2020 4:50 PM	03/20/2020 2:25 PM
2003352-002	5815N-OA1-031920	03/19/2020 5:10 PM	03/20/2020 2:25 PM
2003352-003	5815N-IA1-031920	03/19/2020 4:51 PM	03/20/2020 2:25 PM
2003352-004	5815N-INFLUENT-031920	03/19/2020 10:00 AM	03/20/2020 2:25 PM

Case Narrative

WO#: **2003352**
Date: **3/30/2020**

CLIENT: Farallon Consulting
Project: Capital Industries

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Air samples are reported in ppbv and ug/m3.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Client: **Farallon Consulting**
WorkOrder: 2003352
Project: Capital Industries

Client Sample ID: 5815N-IA8-031920
Lab ID: 2003352-001A
Sample Type: Summa Canister

Date Sampled: 3/19/2020
Date Received: 3/20/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	03/27/2020	AD
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	03/27/2020	AD
Tetrachloroethene (PCE)	0.0882	0.598	0.0500	0.339		EPA-TO-15SIM	03/27/2020	AD
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	03/27/2020	AD
Trichloroethene (TCE)	0.266	1.43	0.0170	0.0914		EPA-TO-15SIM	03/27/2020	AD
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	03/27/2020	AD
Surr: 4-Bromofluorobenzene	103 %Rec	--	70-130	--		EPA-TO-15SIM	03/27/2020	AD

Client: **Farallon Consulting**
WorkOrder: 2003352
Project: Capital Industries

Client Sample ID: 5815N-OA1-031920
Lab ID: 2003352-002A
Sample Type: Summa Canister

Date Sampled: 3/19/2020
Date Received: 3/20/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	03/27/2020	AD
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	03/27/2020	AD
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	03/27/2020	AD
trans-1,2-Dichloroethene	0.00784	0.0311	0.00600	0.0238		EPA-TO-15SIM	03/27/2020	AD
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	03/27/2020	AD
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	03/27/2020	AD
Surr: 4-Bromofluorobenzene	96.5 %Rec	--	70-130	--		EPA-TO-15SIM	03/27/2020	AD

Client: **Farallon Consulting**
WorkOrder: 2003352
Project: Capital Industries

Client Sample ID: 5815N-IA1-031920
Lab ID: 2003352-003A
Sample Type: Summa Canister

Date Sampled: 3/19/2020
Date Received: 3/20/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
1,1-Dichloroethene (DCE)	0.0206	0.0815	0.00900	0.0357		EPA-TO-15SIM	03/27/2020	AD
cis-1,2-Dichloroethene	0.527	2.09	0.0200	0.0793		EPA-TO-15SIM	03/27/2020	AD
Tetrachloroethene (PCE)	0.0701	0.475	0.0500	0.339		EPA-TO-15SIM	03/27/2020	AD
trans-1,2-Dichloroethene	0.0725	0.287	0.00600	0.0238		EPA-TO-15SIM	03/27/2020	AD
Trichloroethene (TCE)	1.03	5.52	0.0170	0.0914		EPA-TO-15SIM	03/27/2020	AD
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	03/27/2020	AD
Surr: 4-Bromofluorobenzene	99.0 %Rec	--	70-130	--		EPA-TO-15SIM	03/27/2020	AD

Client: **Farallon Consulting**
WorkOrder: 2003352
Project: Capital Industries

Client Sample ID: 5815N-INFLUENT-031920
Lab ID: 2003352-004A
Sample Type: Summa Canister

Date Sampled: 3/19/2020
Date Received: 3/20/2020

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	03/28/2020	AD
cis-1,2-Dichloroethene	0.580	2.30	0.0200	0.0793		EPA-TO-15SIM	03/28/2020	AD
Tetrachloroethene (PCE)	14.4	98.0	0.0500	0.339		EPA-TO-15SIM	03/28/2020	AD
trans-1,2-Dichloroethene	0.0271	0.108	0.00600	0.0238		EPA-TO-15SIM	03/28/2020	AD
Trichloroethene (TCE)	16.3	87.4	0.170	0.914		EPA-TO-15SIM	03/28/2020	AD
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	03/28/2020	AD
Surr: 4-Bromofluorobenzene	114 %Rec	--	70-130	--		EPA-TO-15SIM	03/28/2020	AD

Work Order: 2003352
CLIENT: Farallon Consulting
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID: **LCS-R58313** SampType: **LCS** Units: **ppbv** Prep Date: **3/27/2020** RunNo: **58313**
Client ID: **LCSW** Batch ID: **R58313** Analysis Date: **3/27/2020** SeqNo: **1165312**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	2.18	0.0850	2.000	0	109	70	130				
1,1-Dichloroethene (DCE)	1.77	0.00900	2.000	0	88.3	70	130				
trans-1,2-Dichloroethene	1.86	0.00600	2.000	0	92.8	70	130				
cis-1,2-Dichloroethene	1.65	0.0200	2.000	0	82.6	70	130				
Trichloroethene (TCE)	1.76	0.0170	2.000	0	88.0	70	130				
Tetrachloroethene (PCE)	1.90	0.0500	2.000	0	95.0	70	130				
Surr: 4-Bromofluorobenzene	4.15		4.000		104	70	130				

Sample ID: **MB-R58313** SampType: **MBLK** Units: **ppbv** Prep Date: **3/27/2020** RunNo: **58313**
Client ID: **MBLKW** Batch ID: **R58313** Analysis Date: **3/27/2020** SeqNo: **1165313**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850									
1,1-Dichloroethene (DCE)	ND	0.00900									
trans-1,2-Dichloroethene	ND	0.00600									
cis-1,2-Dichloroethene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0170									
Tetrachloroethene (PCE)	ND	0.0500									
Surr: 4-Bromofluorobenzene	3.46		4.000		86.4	70	130				

Sample ID: **2003352-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **3/27/2020** RunNo: **58313**
Client ID: **5815N-IA8-031920** Batch ID: **R58313** Analysis Date: **3/27/2020** SeqNo: **1165317**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850						0		30	
1,1-Dichloroethene (DCE)	ND	0.00900						0		30	
trans-1,2-Dichloroethene	ND	0.00600						0		30	
cis-1,2-Dichloroethene	ND	0.0200						0		30	
Trichloroethene (TCE)	0.272	0.0170						0.2662	2.23	30	
Tetrachloroethene (PCE)	0.0652	0.0500						0.08823	30.0	30	

Work Order: 2003352
CLIENT: Farallon Consulting
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID: **2003352-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **3/27/2020** RunNo: **58313**
Client ID: **5815N-IA8-031920** Batch ID: **R58313** Analysis Date: **3/27/2020** SeqNo: **1165317**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	3.90		4.000		97.6	70	130		0		

Sample Log-In Check List

Client Name:	**FARA**	Work Order Number:	**2003352**
Logged by:	**Carissa True**	Date Received:	**3/20/2020 2:25:00 PM**

Chain of Custody

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

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		Air samples		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☑	No ☐	NA ☐

Person Notified:	Jen Moore	Date:	3/20/2020
By Whom:	Emiko Mar	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Canister containing 5815N-INFLUENT-031920		
Client Instructions:	15893 - See updated COC		

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Air Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 3/19/20 Page: 1 of: 1

Laboratory Project No (Internal): 2003352

Project Name: Capital Industries

Special Remarks: * Only Analyze for following: PCE; TCE; cis 1,2-DCE, trans 1,2-DCE; 1,1-DCE; and Vinyl Chloride

Client: Farallon

Project No: 457-008

Address: 975 5th Ave NW

Location: Seattle, WA

City, State, Zip: Issaquah, WA, 98027

Collected by: Ryan Ostrom

Telephone: 425-295-0800

Reports to (PM): Jen Moore

Air samples are disposed of one week after report is submitted to client unless otherwise requested. ☐ OK to Dispose ☐ Hold (fees may apply)

Fax: 425-295-0850

Email (PM): JMOORE@FARALLONCONSULTING.COM

	Sample Name	Canister / Flow Reg Serial #	Sample Date & Time	Sample Type (Matrix) *	Container Type **	Fill Time / Flow Rate	Internal: Initial Evacuation Pressure (mtorr)	Field Initial Sample Pressure ("Hg)	Field Final Sample Pressure ("Hg)	Analysis: VOCs TO15 SCAN	VOCs TO15 SCAN LL	VOCs TO15 SIM *	Siloxanes TO15	Sulfur TO15	Sulfur Ext. TO15	APH TO15	Helium	Major Gases 3C		Comments	Internal: Final Pressure ("Hg)
1	5815N-IA8-031920	17649	3/19/20	IA Air	6L	8 Hr	10mtorr	-30.0	~~-7.0~~ -30.0			X									-6
		FR8-30	1650				3/12/2020	3/19/20	3/19/20												
2	5815N-OA1-031920	~~17238~~ 12664	3/19/20	AA Air	6L	8 Hr	10mtorr	-30.0	~~-6.0~~ -30.0			X									-8
		~~FR8-10~~ FR8-02	1710				3/12/2020	3/19/20	3/19/20												
3	5815N-IA1-031920	17640	3/19/20	IA Air	6L	8 Hr	10mtorr	-30.0	~~-7.0~~ -30.0			X									-8
		FV-5	1651				3/12/2020	3/19/20	3/19/20												
4	5815N-INFLUENT-031920	17240	3/19/20	S Air	6L	~~8 HR~~ Grab	10mtorr	-30.0	-4.0			X									-30
		FR8-33	1000				3/12/2020	3/19/20	3/19/20												
5		~~17214~~			6L	8 Hr	10mtorr														
		~~FR08-14~~					3/12/2020														

* Matrix Codes: AA = Ambient Air IA = Indoor Air L = Landfill S = Subslab / Soil Gas

** Container Codes: BV = 1 Liter Bottle Vac 6L = 6L Canister 1L = 1L Canister CYL = High Pressure Cylinder F = Filter S = Sorbent Tube TB = Tedlar Bag

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x Ryan Ostrom	3/20/20 0830	x	3/20/20 1425
Relinquished	Date/Time	Received	Date/Time
x		x	

Turn-Around Time:

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

Air Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 3/19/20 Page: 1 of: 1

Laboratory Project No (Internal): 2003352

Client: Farallon

Project Name: Capital Industries

Project No: 457-008

Address: 975 5th Ave NW

Location: Seattle, WA

City, State, Zip: Issaquah, WA, 98027

Collected by: Ryan Ostrom

Telephone: 425-295-0800

Reports to (PM): Jen Moore

Fax: 425-295-0850

Email (PM): JMOORE@FARALLONCONSULTING.COM

Special Remarks: * Only Analyze for following: PCE; TCE; cis 1,2-DCE; trans 1,2-DCE; 1,1-DCE; and Vinyl Chloride

Edits by JM. by CRT 3/23

Air samples are disposed of one week after report is submitted to client unless otherwise requested. ☐ OK to Dispose ☐ Hold (fees may apply)

	Sample Name	Canister / Flow Reg Serial #	Sample Date & Time	Sample Type (Matrix) *	Container Type **	Fill Time / Flow Rate	Internal: Initial Evacuation Pressure (mtorr)	Field Initial Sample Pressure (" Hg)	Field Final Sample Pressure (" Hg)	Analysis: VOCs TO15 SCAN	VOCs TO15 SCAN LL	VOCs TO15 SIM *	Siloxanes TO15	Sulfur TO15	Sulfur Ext. TO15	APH TO15	Helium	Major Gases 3C		Comments	Internal: Final Pressure ("Hg)
1	5815N-IA8-031920	17649 FR8-30	3/19/20 1650	IA Air	6L	8 Hr	10mtorr 3/12/2020	-30.0 3/19/20	~~-7.0~~ -3.0 3/19/20			X									-6
2	5815N-OA1-031920	~~17238~~ 12064 ~~FR8-16~~ FR8-02	3/19/20 1710	AA Air	6L	8 Hr	10mtorr 3/12/2020	-30.0 3/19/20	~~-6.0~~ -3.0 3/19/20			X									-8
3	5815N-IA1-031920	17640 FV-5	3/19/20 1651	IA Air	6L	8 Hr	10mtorr 3/12/2020	-30.0 3/19/20	~~-7.0~~ -3.0 3/19/20			X									-8
4	5815N-INFLUENT-031920	~~17240~~ 15893 FR8-33	3/19/20 1000	S Air	6L	Grab ~~8 Hr~~	10mtorr 3/12/2020	-30.0 3/19/20	-4.0 3/19/20			X									-30
5		~~17244~~ ~~FR8-14~~		AA	6L	8 Hr	10mtorr 3/12/2020														

* Matrix Codes: AA = Ambient Air IA = Indoor Air L = Landfill S = Subslab / Soil Gas

** Container Codes: BV = 1 Liter Bottle Vac 6L = 6L Canister 1L = 1L Canister CYL = High Pressure Cylinder F = Filter S = Sorbent Tube TB = Tedlar Bag

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x Ryan Ostrom	3/20/20 0830	x [signature]	3/20/20 1424
Relinquished	Date/Time	Received	Date/Time
x		x	

Turn-Around Time:

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Farallon Consulting
Jen Moore
975 5th Ave NW
Issaquah, WA 98027

RE: Capital Industries
Work Order Number: 2003353

March 30, 2020

Attention Jen Moore:

Fremont Analytical, Inc. received 4 sample(s) on 3/20/2020 for the analyses presented in the following report.

Volatile Organic Compounds-EPA Method TO-15 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *03/30/2020*

CLIENT: Farallon Consulting
Project: Capital Industries
Work Order: 2003353

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2003353-001	5900-IA1-031920	03/19/2020 3:50 PM	03/20/2020 2:25 PM
2003353-002	5900-IA3-031920	03/19/2020 3:55 PM	03/20/2020 2:25 PM
2003353-003	5900-OA2-031920	03/19/2020 4:45 PM	03/20/2020 2:25 PM
2003353-004	5900-INFLUENT-031920	03/19/2020 10:55 AM	03/20/2020 2:25 PM

Case Narrative

WO#: **2003353**
Date: **3/30/2020**

CLIENT: Farallon Consulting
Project: Capital Industries

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Air samples are reported in ppbv and ug/m3.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Client: **Farallon Consulting**
WorkOrder: 2003353
Project: Capital Industries

Client Sample ID: 5900-IA1-031920
Lab ID: 2003353-001A
Sample Type: Summa Canister

Date Sampled: 3/19/2020
Date Received: 3/20/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	03/28/2020	AD
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	03/28/2020	AD
Tetrachloroethene (PCE)	0.0605	0.411	0.0500	0.339		EPA-TO-15SIM	03/28/2020	AD
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	03/28/2020	AD
Trichloroethene (TCE)	0.0397	0.213	0.0170	0.0914		EPA-TO-15SIM	03/28/2020	AD
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	03/28/2020	AD
Surr: 4-Bromofluorobenzene	95.2 %Rec	--	70-130	--		EPA-TO-15SIM	03/28/2020	AD

Client: **Farallon Consulting**
WorkOrder: 2003353
Project: Capital Industries

Client Sample ID: 5900-IA3-031920
Lab ID: 2003353-002A
Sample Type: Summa Canister

Date Sampled: 3/19/2020
Date Received: 3/20/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	03/28/2020	AD
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	03/28/2020	AD
Tetrachloroethene (PCE)	0.108	0.734	0.0500	0.339		EPA-TO-15SIM	03/28/2020	AD
trans-1,2-Dichloroethene	0.00677	0.0268	0.00600	0.0238		EPA-TO-15SIM	03/28/2020	AD
Trichloroethene (TCE)	0.0328	0.176	0.0170	0.0914		EPA-TO-15SIM	03/28/2020	AD
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	03/28/2020	AD
Surr: 4-Bromofluorobenzene	107 %Rec	--	70-130	--		EPA-TO-15SIM	03/28/2020	AD

Client: **Farallon Consulting**
WorkOrder: 2003353
Project: Capital Industries

Client Sample ID: 5900-OA2-031920
Lab ID: 2003353-003A
Sample Type: Summa Canister

Date Sampled: 3/19/2020
Date Received: 3/20/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	03/28/2020	AD
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	03/28/2020	AD
Tetrachloroethene (PCE)	1.30	8.83	0.0500	0.339		EPA-TO-15SIM	03/28/2020	AD
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	03/28/2020	AD
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	03/28/2020	AD
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	03/28/2020	AD
Surr: 4-Bromofluorobenzene	97.3 %Rec	--	70-130	--		EPA-TO-15SIM	03/28/2020	AD

Client: **Farallon Consulting**
WorkOrder: 2003353
Project: Capital Industries

Client Sample ID: 5900-INFLUENT-031920
Lab ID: 2003353-004A
Sample Type: Summa Canister

Date Sampled: 3/19/2020
Date Received: 3/20/2020

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	03/28/2020	AD
cis-1,2-Dichloroethene	0.0446	0.177	0.0200	0.0793		EPA-TO-15SIM	03/28/2020	AD
Tetrachloroethene (PCE)	0.0879	0.596	0.0500	0.339		EPA-TO-15SIM	03/28/2020	AD
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	03/28/2020	AD
Trichloroethene (TCE)	0.0977	0.525	0.0170	0.0914		EPA-TO-15SIM	03/28/2020	AD
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	03/28/2020	AD
Surr: 4-Bromofluorobenzene	108 %Rec	--	70-130	--		EPA-TO-15SIM	03/28/2020	AD

Work Order: 2003353
CLIENT: Farallon Consulting
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID: **LCS-R58313** SampType: **LCS** Units: **ppbv** Prep Date: **3/27/2020** RunNo: **58313**
Client ID: **LCSW** Batch ID: **R58313** Analysis Date: **3/27/2020** SeqNo: **1165312**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	2.18	0.0850	2.000	0	109	70	130				
1,1-Dichloroethene (DCE)	1.77	0.00900	2.000	0	88.3	70	130				
trans-1,2-Dichloroethene	1.86	0.00600	2.000	0	92.8	70	130				
cis-1,2-Dichloroethene	1.65	0.0200	2.000	0	82.6	70	130				
Trichloroethene (TCE)	1.76	0.0170	2.000	0	88.0	70	130				
Tetrachloroethene (PCE)	1.90	0.0500	2.000	0	95.0	70	130				
Surr: 4-Bromofluorobenzene	4.15		4.000		104	70	130				

Sample ID: **MB-R58313** SampType: **MBLK** Units: **ppbv** Prep Date: **3/27/2020** RunNo: **58313**
Client ID: **MBLKW** Batch ID: **R58313** Analysis Date: **3/27/2020** SeqNo: **1165313**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850									
1,1-Dichloroethene (DCE)	ND	0.00900									
trans-1,2-Dichloroethene	ND	0.00600									
cis-1,2-Dichloroethene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0170									
Tetrachloroethene (PCE)	ND	0.0500									
Surr: 4-Bromofluorobenzene	3.46		4.000		86.4	70	130				

Sample ID: **2003352-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **3/27/2020** RunNo: **58313**
Client ID: **BATCH** Batch ID: **R58313** Analysis Date: **3/27/2020** SeqNo: **1165317**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850						0		30	
1,1-Dichloroethene (DCE)	ND	0.00900						0		30	
trans-1,2-Dichloroethene	ND	0.00600						0		30	
cis-1,2-Dichloroethene	ND	0.0200						0		30	
Trichloroethene (TCE)	0.272	0.0170						0.2662	2.23	30	
Tetrachloroethene (PCE)	0.0652	0.0500						0.08823	30.0	30	

Work Order: 2003353
CLIENT: Farallon Consulting
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID: **2003352-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **3/27/2020** RunNo: **58313**
Client ID: **BATCH** Batch ID: **R58313** Analysis Date: **3/27/2020** SeqNo: **1165317**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	3.90		4.000		97.6	70	130		0		

Sample Log-In Check List

Client Name:	**FARA**	Work Order Number:	**2003353**
Logged by:	**Carissa True**	Date Received:	**3/20/2020 2:25:00 PM**

Chain of Custody

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

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		Air samples		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Air Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (Internal): 2003353

Date: 3/19/20 Page: 1 of: 1

Special Remarks: * Only Analyze for the following: PCE; TCE; cis 1,2-DCE; trans 1,2-DCE; 1,1-DCE; and Vinyl Chloride

Client: Farallon
Address: 975 5th Ave NW
City, State, Zip: Issaquah, WA, 98027
Telephone: 425-295-0800
Fax: 425-295-0850

Project Name: Capital Industries
Project No: 457-008
Location: Seattle, WA
Collected by: Ryan Ostrom
Reports to (PM): Jen Moore
Email (PM): JMOORE@FARALLONCONSULTING.COM

Air samples are disposed of one week after report is submitted to client unless otherwise requested. ☐ OK to Dispose ☐ Hold (fees may apply)

	Sample Name	Canister / Flow Reg Serial #	Sample Date & Time	Sample Type (Matrix) *	Container Type **	Fill Time / Flow Rate	Internal: Initial Evacuation Pressure (mtorr)	Field Initial Sample Pressure ("Hg)	Field Final Sample Pressure ("Hg)	Analysis: VOCs TO15 SCAN	VOCs TO15 SCAN LL	VOCs TO15 SIM *	Siloxanes TO15	Sulfur TO15	Sulfur Ext. TO15	APH TO15	Helium	Major Gases 3C		Comments	Internal: Final Pressure ("Hg)
1	5900-IA1-031920	15421 / FR8-28	3/19/20 1550	IA Air	6L	8 Hr	10mtorr / 3/12/2020	-30.0 / 3/19/20	-5.0 / 3/19/20			X									-8
2	5900-IA3-031920	~~12669~~ 17238 / ~~FR8-02~~ FR8-16	3/19/20 1555	IA Air	6L	8 Hr	10mtorr / 3/12/2020	-30.0 / 3/19/20	-6.0 / 3/19/20			X									-10
3	5900-OA2-031920	~~15893~~ 17244 / ~~FR8~~ FR8-14	3/19/20 1645	AA Air	6L	~~8 Hr~~ ~~Grab~~	10mtorr / 3/12/2020	-30.0 / 3/19/20	-9.0 / 3/19/20			X									-9
4	5900-INFLUENT-031920	34751 / F-32	3/19/20 1055	S Air	6L	Grab	10mtorr / 3/3/2020	-30.0 / 3/19/20	-4.0 / 3/19/20			X									-2
5		~~15982~~ / ~~F-15~~			6L	Grab	10mtorr / 3/3/2020														

* Matrix Codes: AA = Ambient Air IA = Indoor Air L = Landfill S = Subslab / Soil Gas

** Container Codes: BV = 1 Liter Bottle Vac 6L = 6L Canister 1L = 1L Canister CYL = High Pressure Cylinder F = Filter S = Sorbent Tube TB = Tedlar Bag

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Turn-Around Time:
☒ Standard
☐ 3 Day
☐ 2 Day
☐ Next Day
Same Day ____ (specify)

Relinquished	Date/Time	Received	Date/Time
x Ryan Ostrom	3/20/20 0830	x	3/20/20 1415
Relinquished	Date/Time	Received	Date/Time
x		x	

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Landau Associates
Jennifer Wynkoop
130 2nd Ave South
Edmonds, WA 98020

RE: Capital Industries
Work Order Number: 2009385

September 30, 2020

Attention Jennifer Wynkoop:

Fremont Analytical, Inc. received 9 sample(s) on 9/23/2020 for the analyses presented in the following report.

Volatile Organic Compounds-EPA Method TO-15 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Dave Johnson

Date: *09/30/2020*

CLIENT: Landau Associates
Project: Capital Industries
Work Order: 2009385

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2009385-001	5815N-IA1-20200923	09/23/2020 8:30 AM	09/23/2020 4:54 PM
2009385-002	5815N-IA9-20200923	09/23/2020 8:35 AM	09/23/2020 4:54 PM
2009385-003	5815N-IA8-20200923	09/23/2020 8:37 AM	09/23/2020 4:54 PM
2009385-004	5815N-OA1-20200923	09/23/2020 8:42 AM	09/23/2020 4:54 PM
2009385-005	5815N-Influent-20200923	09/23/2020 9:44 AM	09/23/2020 4:54 PM
2009385-006	5900-IA3-20200923	09/23/2020 7:59 AM	09/23/2020 4:54 PM
2009385-007	5900-IA1-20200923	09/23/2020 8:08 AM	09/23/2020 4:54 PM
2009385-008	5900-OA2-20200923	09/23/2020 8:13 AM	09/23/2020 4:54 PM
2009385-009	5900-Influent-20200923	09/23/2020 10:29 AM	09/23/2020 4:54 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2009385**
Date: **9/30/2020**

CLIENT: Landau Associates
Project: Capital Industries

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Air samples are reported in ppbv and ug/m3.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Client: **Landau Associates**
WorkOrder: 2009385
Project: Capital Industries

Client Sample ID: 5815N-IA1-20200923
Lab ID: 2009385-001A
Sample Type: Summa Canister

Date Sampled: 9/23/2020
Date Received: 9/23/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/26/2020	MS
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/26/2020	MS
Tetrachloroethene (PCE)	0.0752	0.510	0.0500	0.339		EPA-TO-15SIM	09/26/2020	MS
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/26/2020	MS
Trichloroethene (TCE)	0.305	1.64	0.0170	0.0914		EPA-TO-15SIM	09/26/2020	MS
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/26/2020	MS
Surr: 4-Bromofluorobenzene	98.8 %Rec	--	70-130	--		EPA-TO-15SIM	09/26/2020	MS

Client: **Landau Associates**
WorkOrder: 2009385
Project: Capital Industries

Client Sample ID: 5815N-IA9-20200923
Lab ID: 2009385-002A
Sample Type: Summa Canister

Date Sampled: 9/23/2020
Date Received: 9/23/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/26/2020	MS
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/26/2020	MS
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	09/26/2020	MS
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/26/2020	MS
Trichloroethene (TCE)	0.286	1.54	0.0170	0.0914		EPA-TO-15SIM	09/26/2020	MS
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/26/2020	MS
Surr: 4-Bromofluorobenzene	98.8 %Rec	--	70-130	--		EPA-TO-15SIM	09/26/2020	MS

Client: **Landau Associates**
WorkOrder: 2009385
Project: Capital Industries

Client Sample ID: 5815N-IA8-20200923
Lab ID: 2009385-003A
Sample Type: Summa Canister

Date Sampled: 9/23/2020
Date Received: 9/23/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/26/2020	MS
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/26/2020	MS
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	09/26/2020	MS
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/26/2020	MS
Trichloroethene (TCE)	0.256	1.37	0.0170	0.0914		EPA-TO-15SIM	09/26/2020	MS
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/26/2020	MS
Surr: 4-Bromofluorobenzene	96.0 %Rec	--	70-130	--		EPA-TO-15SIM	09/26/2020	MS

Client: **Landau Associates**
WorkOrder: 2009385
Project: Capital Industries

Client Sample ID: 5815N-OA1-20200923
Lab ID: 2009385-004A
Sample Type: Summa Canister

Date Sampled: 9/23/2020
Date Received: 9/23/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/26/2020	MS
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/26/2020	MS
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	09/26/2020	MS
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/26/2020	MS
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	09/26/2020	MS
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/26/2020	MS
Surr: 4-Bromofluorobenzene	93.2 %Rec	--	70-130	--		EPA-TO-15SIM	09/26/2020	MS

Client: **Landau Associates**
WorkOrder: 2009385
Project: Capital Industries

Client Sample ID: 5815N-Influent-20200923
Lab ID: 2009385-005A
Sample Type: Summa Canister

Date Sampled: 9/23/2020
Date Received: 9/23/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/28/2020	MS
cis-1,2-Dichloroethene	1.40	5.57	0.0200	0.0793		EPA-TO-15SIM	09/28/2020	MS
Tetrachloroethene (PCE)	13.9	94.6	0.500	3.39		EPA-TO-15SIM	09/28/2020	MS
trans-1,2-Dichloroethene	0.0545	0.216	0.00600	0.0238		EPA-TO-15SIM	09/28/2020	MS
Trichloroethene (TCE)	31.2	168	0.170	0.914		EPA-TO-15SIM	09/28/2020	MS
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/28/2020	MS
Surr: 4-Bromofluorobenzene	103 %Rec	--	70-130	--		EPA-TO-15SIM	09/28/2020	MS

Client: **Landau Associates**
WorkOrder: 2009385
Project: Capital Industries

Client Sample ID: 5900-IA3-20200923
Lab ID: 2009385-006A
Sample Type: Summa Canister

Date Sampled: 9/23/2020
Date Received: 9/23/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/28/2020	MS
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/28/2020	MS
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	09/28/2020	MS
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/28/2020	MS
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	09/28/2020	MS
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/28/2020	MS
Surr: 4-Bromofluorobenzene	97.0 %Rec	--	70-130	--		EPA-TO-15SIM	09/28/2020	MS

Client: **Landau Associates**
WorkOrder: 2009385
Project: Capital Industries

Client Sample ID: 5900-IA1-20200923
Lab ID: 2009385-007A
Sample Type: Summa Canister

Date Sampled: 9/23/2020
Date Received: 9/23/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/28/2020	MS
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/28/2020	MS
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	09/28/2020	MS
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/28/2020	MS
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	09/28/2020	MS
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/28/2020	MS
Surr: 4-Bromofluorobenzene	93.5 %Rec	--	70-130	--		EPA-TO-15SIM	09/28/2020	MS

Client: **Landau Associates**
WorkOrder: 2009385
Project: Capital Industries

Client Sample ID: 5900-OA2-20200923
Lab ID: 2009385-008A
Sample Type: Summa Canister

Date Sampled: 9/23/2020
Date Received: 9/23/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/28/2020	MS
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/28/2020	MS
Tetrachloroethene (PCE)	0.509	3.45	0.0500	0.339		EPA-TO-15SIM	09/28/2020	MS
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/28/2020	MS
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	09/28/2020	MS
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/28/2020	MS
Surr: 4-Bromofluorobenzene	93.9 %Rec	--	70-130	--		EPA-TO-15SIM	09/28/2020	MS

Client: **Landau Associates**
WorkOrder: 2009385
Project: Capital Industries

Client Sample ID: 5900-Influent-20200923
Lab ID: 2009385-009A
Sample Type: Summa Canister

Date Sampled: 9/23/2020
Date Received: 9/23/2020

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/28/2020	MS
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/28/2020	MS
Tetrachloroethene (PCE)	0.208	1.41	0.0500	0.339		EPA-TO-15SIM	09/28/2020	MS
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/28/2020	MS
Trichloroethene (TCE)	0.0952	0.511	0.0170	0.0914		EPA-TO-15SIM	09/28/2020	MS
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/28/2020	MS
Surr: 4-Bromofluorobenzene	101 %Rec	--	70-130	--		EPA-TO-15SIM	09/28/2020	MS

Work Order: 2009385
CLIENT: Landau Associates
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID: **LCS-R62130** SampType: **LCS** Units: **ppbv** Prep Date: **9/26/2020** RunNo: **62130**
Client ID: **LCSW** Batch ID: **R62130** Analysis Date: **9/26/2020** SeqNo: **1246345**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	1.87	0.0850	2.000	0	93.5	70	130				
1,1-Dichloroethene (DCE)	1.92	0.00900	2.000	0	95.9	70	130				
trans-1,2-Dichloroethene	2.00	0.00600	2.000	0	100	70	130				
cis-1,2-Dichloroethene	2.00	0.0200	2.000	0	100	70	130				
Trichloroethene (TCE)	1.96	0.0170	2.000	0	98.1	70	130				
Tetrachloroethene (PCE)	1.96	0.0500	2.000	0	98.1	70	130				
Surr: 4-Bromofluorobenzene	4.02		4.000		101	70	130				

Sample ID: **MB-R62130** SampType: **MBLK** Units: **ppbv** Prep Date: **9/26/2020** RunNo: **62130**
Client ID: **MBLKW** Batch ID: **R62130** Analysis Date: **9/26/2020** SeqNo: **1246346**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850									
1,1-Dichloroethene (DCE)	ND	0.00900									
trans-1,2-Dichloroethene	ND	0.00600									
cis-1,2-Dichloroethene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0170									
Tetrachloroethene (PCE)	ND	0.0500									
Surr: 4-Bromofluorobenzene	3.69		4.000		92.3	70	130				

Sample ID: **2009274-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **9/26/2020** RunNo: **62130**
Client ID: **BATCH** Batch ID: **R62130** Analysis Date: **9/26/2020** SeqNo: **1246350**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850						0		25	
1,1-Dichloroethene (DCE)	ND	0.00900						0		25	
trans-1,2-Dichloroethene	0.679	0.00600						0.6814	0.370	25	
cis-1,2-Dichloroethene	3.15	0.0200						3.140	0.329	25	
Trichloroethene (TCE)	ND	0.0170						0		25	

Work Order: 2009385
CLIENT: Landau Associates
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID: **2009274-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **9/26/2020** RunNo: **62130**
Client ID: **BATCH** Batch ID: **R62130** Analysis Date: **9/26/2020** SeqNo: **1246350**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	0.305	0.0500						0.3142	2.85	25	
Surr: 4-Bromofluorobenzene	4.21		4.000		105	70	130		0		

Sample ID: **LCS-R62218** SampType: **LCS** Units: **ppbv** Prep Date: **9/28/2020** RunNo: **62218**
Client ID: **LCSW** Batch ID: **R62218** Analysis Date: **9/28/2020** SeqNo: **1248180**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	1.90	0.0850	2.000	0	95.2	70	130				
1,1-Dichloroethene (DCE)	1.92	0.00900	2.000	0	96.2	70	130				
trans-1,2-Dichloroethene	1.97	0.00600	2.000	0	98.3	70	130				
cis-1,2-Dichloroethene	1.97	0.0200	2.000	0	98.3	70	130				
Trichloroethene (TCE)	1.94	0.0170	2.000	0	96.9	70	130				
Tetrachloroethene (PCE)	1.94	0.0500	2.000	0	97.0	70	130				
Surr: 4-Bromofluorobenzene	3.97		4.000		99.3	70	130				

Sample ID: **MB-R62218** SampType: **MBLK** Units: **ppbv** Prep Date: **9/28/2020** RunNo: **62218**
Client ID: **MBLKW** Batch ID: **R62218** Analysis Date: **9/28/2020** SeqNo: **1248181**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850									
1,1-Dichloroethene (DCE)	ND	0.00900									
trans-1,2-Dichloroethene	ND	0.00600									
cis-1,2-Dichloroethene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0170									
Tetrachloroethene (PCE)	ND	0.0500									
Surr: 4-Bromofluorobenzene	3.73		4.000		93.3	70	130				

Work Order: 2009385
CLIENT: Landau Associates
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID: **2009385-005AREP** SampType: **REP** Units: **ppbv** Prep Date: **9/28/2020** RunNo: **62218**
Client ID: **5815N-Influent-2020092** Batch ID: **R62218** Analysis Date: **9/28/2020** SeqNo: **1248185**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850						0		25	
1,1-Dichloroethene (DCE)	ND	0.00900						0		25	
trans-1,2-Dichloroethene	0.0543	0.00600						0.05448	0.294	25	
cis-1,2-Dichloroethene	1.38	0.0200						1.405	2.01	25	
Trichloroethene (TCE)	43.1	0.0170						45.14	4.72	25	E
Tetrachloroethene (PCE)	18.5	0.0500						20.76	11.4	25	
Surr: 4-Bromofluorobenzene	3.95		4.000		98.8	70	130		0		

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample Log-In Check List

Client Name:	**LA**	Work Order Number:	**2009385**
Logged by:	**Carissa True**	Date Received:	**9/23/2020 4:54:00 PM**

Chain of Custody

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

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		Air samples		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Air Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 9/23/20 Page: 1 of: 1

Laboratory Project No (Internal): 2009385

Client: Landau Associates

Address: 2107 S C St.

City, State, Zip: Tacoma, WA 98402

Telephone: 253-284-4870

Fax:

Project Name: Capital Industries

Project No: 1993001.010.011

Location: Seattle, WA

Collected by: Jesikah Cavanaugh

Reports to (PM): Jennifer Wynkoop / Dave Johnson

Email (PM): jwynkoop@landauinc.com djorgensen@landauinc.com djohnson@landauinc.com

Special Remarks: * only analyze for the following: cis 1,2-DCE; trans 1,2-DCE; 1,1-DCE; vinyl chloride; PCE; ~~DCE~~ TCE Jal

All samples are disposed of one week after report is submitted to client unless otherwise requested. [X] OK to Dispose [ ] Hold (fees may apply)

Sample Name	Canister / Flow Reg Serial #	Sample Type (Matrix) *	Container Type **	Expected Fill Time / Flow Rate	Sample Start Date & Time	Field Initial Sample Pressure (" Hg)	Sample End Date & Time	Field Final Sample Pressure (" Hg)	Analysis: VOCs TO15 SCAN	VOCs TO15 SCAN LL	VOCs TO15 SIM *	Siloxanes TO15	Sulfur TO15	Sulfur Fuel TO15	APH TO10	Helium	Major Gases 3K		Comments	Internal: Final Pressure (" Hg)
1 5815N-IA1-20200923	17635 FRS-28	IA AIR	6L	8HR	9/23/20 830	-29.0	9/23/20 1540	-8.0			X									-10
2 5815N-IA9-20200923	13973 FRS-20	IA AIR	6L	8 HR	9/23/20 835	-30.0	9/23/20 1538	-9.5			X									9
3 5815N-IA8-20200923	17236 FRS-33	IA AIR	6L	8HR	9/23/20 837	-29.5	9/23/20 1535	-8.5			X									-10
4 5815N-OA1-20200923	10867 FRS-21	AA AIR	6L	8HR	9/23/20 842	-30.0	9/23/20 1542	-11			X									-12
5 5815N-INFLUENT-20200923	4094 C	S AIR	1L	5MIN GRAB	9/23/20 944	-30.0	9/23/20 947	-5.0			X									-6

* Matrix Codes: AA = Ambient Air IA = Indoor Air S = Subslab / Soil Gas SVE = SVE L = Landfill D = Digester

** Container Codes: BV = 1 Liter Bottle Vac 6L = 6L Canister 1L = 1L Canister CYL = High Pressure Cylinder F = Filter S = Sorbent Tube TB = Tedlar Bag

Turn-Around Time:
[X] Standard [ ] Next Day [ ] 3 Day [ ] Same Day [ ] 2 Day [ ] specify

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
	Jesikah Cavanaugh	9/23/20 1650		Carter Johnson	9/23/20 @1654
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time

Air Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3500 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 9/23/20 Page: 1 of: 1

Laboratory Project No (Internal): 2009385

Project Name: Capitol Industries

Project No: 19930001.010.011

Special Remarks: *only analyze for the following: cis 1,2-DCE; trans 1,2-DCE; 1,1-DCE; vinyl chloride; PCE; TCE

Client: Landau Associates

Address: 2107 S C St.

City, State, Zip: Tacoma, WA 98402

Telephone: 253-284-4870

Fax:

Location: Seattle, WA

Collected by: Jesikah Cavanaugh

Reports to (PM): Jennifer Wynkoop Dave Johnson Dani Jorgensen

Email (PM): djorgensen@landauinc.com / djohnson@landauinc.com / jwynkoop@landauinc.com

Air samples are disposed of one week after report is submitted to client unless otherwise requested. [X] OK to Dispose [ ] Hold (fees may apply)

Sample Name	Canister / Flow Reg Serial #	Sample Type (Matrix) *	Container Type **	Expected Fill Time / Flow Rate	Sample Start Date & Time	Field Initial Sample Pressure (" Hg)	Sample End Date & Time	Field Final Sample Pressure (" Hg)	Analysis: VOCs TO15 SCAN	VOCs TO15 SCAN-LL	VOCs TO15 SIM *	Siloxanes TO15	Sulfur TO15	Sulfur Ext. TO15	APH TO14	Helium	Major Gases 3C		Comments	Internal Final Pressure ("Hg)
5900-IA3-20200923	17234 FV-1	IA AIR	6L	8 hr	9/23/20 759	-30.0	9/23/20 1550	~~7.5~~ -6.5			X									-8
5900-IA1-20200923	17648 FRS-09	IA AIR	6L	8 hr	9/23/20 808	-30.0	9/23/20 1555	-7.5			X									-8
5900-OA2-20200923	17244 FRS-11	~~OA~~ AA AIR	6L	8 hr	9/23/20 813	-30.0	9/23/20 1557	-9.0			X									-0
5900-INFLUENT-20200923	4681	S AIR	~~1L~~ 1L	5 min GRAB	9/23/20 1029	-30.0	9/23/20 1034	-5.0			X									-4

* Matrix Codes: AA = Ambient Air IA = Indoor Air S = Subslab / Soil Gas SVE = SVE L = Landfill D = Digester

** Container Codes: BV = 1 Liter Bottle Vac 6L = 6L Canister 1L = 1L Canister CYL = High Pressure Cylinder F = Filter S = Sorbent Tube TB = Tedlar Bag

Turn-Around Time: [X] Standard [ ] Next Day [ ] 3 Day [ ] Same Day [ ] 2 Day [ ] specify

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
	Jesikah Cavanaugh	9/23/20 1650		9/23/20 @	1654
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time