

# Site Investigation Report

for

Bright Cleaners Tenant Space Franklin Centre 7249 South 76th Street Franklin, Milwaukee County, Wisconsin

> DNR FID #241928940 DNR BRRTS #02-41-580017

> > November 3, 2017

Apex Project No. PECO 2017-68

Prepared for:

Franklin Station LLC, c/o Phillips Edison & Company 11501 Northlake Drive Cincinnati, Ohio 45249



November 3, 2017

Mr. Eric Amadi
State of Wisconsin
Department of Natural Resources
Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212-3128

Re: Site Investigation Report
Bright Cleaners Tenant Space, Franklin Centre
7249 South 76th Street, Franklin, Wisconsin
Wisconsin DNR Facility Identification #241928940
Wisconsin DNR BRRTS Activity #02-41-580017

Dear Mr. Amadi:

Franklin Station LLC retained Apex to conduct a Site Investigation at the Bright Cleaners dry cleaner tenant space at 7249 South 76th Street. This tenant space is located within Franklin Station LLC's Franklin Centre, a retail strip mall located at 7199-7255 South 76th Street in Franklin, Milwaukee County, Wisconsin.

Historical records show dry cleaning operations have been conducted in the tenant space from 1995 to present. Soil, groundwater and soil-gas testing was conducted to assess the nature and extent of volatile organic compounds (VOCs) impacts near the tenant space.

Enclosed is Apex's Site Investigation Report. At this time Apex is not requesting assistance from the Wisconsin DNR and a document review has not been included.

If you have any questions regarding our findings, please contact Jane Allan at (513) 771-3617 x3801. Thank you for attention to this matter.

Respectfully Submitted,

Apex Companies, LLC

Jene Allan

Jane Allan Senior Project Manager Joseph P. Becker, P.G. Project Hydrogeologist

cc: Mr. Joe Schlosser, Franklin Station LLC

Attachments

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#### **EXECUTIVE SUMMARY**

Franklin Station LLC (Client) retained Apex to conduct a Site Investigation at the Bright Cleaners tenant space at 7249 South 76th Street. This tenant space is located within Client's Franklin Centre, a retail strip mall located at 7199-7255 South 76th Street in Franklin, Milwaukee County, Wisconsin.

Historical records show two dry cleaning businesses have operated dry cleaning plants in this tenant space: Sun Cleaners in 1995 and Bright Cleaners from 1999 to present. Several rounds of soil sampling were conducted by others in the tenant space in 2011. One soil sample located outside of the Bright Cleaners by the rear door was found to have a concentration of 1,1,1-trichloroethane (1,1,1-TCA) that exceeded the Residual Contaminant Levels (RCLs). A deeper sample collected from the same location had a 1,1,1-TCA concentration below RCLs. Additional samples were collected and analyzed for volatile organic compounds (VOCs) to delineate the extent of contamination. Approximately 58 tons of soil in the vicinity of the 1,1,1-TCA exceedance was excavated, and confirmation samples were collected that showed the contamination had been bounded. These results were submitted to the Wisconsin Department of Natural Resources (DNR). In its letter issued in 2013, the Wisconsin DNR stated that the release at Bright Cleaners is closed and no further investigation or remediation was required at that time.

Bright Cleaners' continued use of dry cleaning solvents in its operation through present day poses a REC. To assess the risk of subsurface impacts associated with the continued use of dry cleaning solvents in the tenant space since 2011, Apex conducted limited soil, groundwater and soil-gas sampling at the Site.

The soil analysis detected one volatile organic compound (VOC) [methylene chloride] at concentrations that slightly exceed the RCL for the soil (leaching) component to groundwater in two soil samples. The soil analysis did not detect VOCs at concentrations in excess of RCLs for direct contact. Apex notes that methylene chloride is not associated with dry cleaning solvents, and was not detected in groundwater at concentrations in excess of laboratory Method Detection Limits (MDLs) or Preventative Action Limit (PAL) Groundwater Quality Standards (GQS). Additionally, based on previous assessment, methylene chloride has been present in soil for at least one year and has not been detected in groundwater at both locations. Therefore, it is Apex's opinion that a soil remedy for the groundwater pathway for methylene chloride is not needed<sup>1</sup>.

The groundwater analysis did not detect VOCs at concentrations in excess of GQSs and/or Vapor Risk Screening Levels (VRSLs), including methylene chloride. Therefore, it is Apex's opinion that additional groundwater investigation is not warranted.

The soil-gas analysis detected one VOC (tetrachloroethene [PCE]) at concentrations in excess of Vapor Action Levels (VALs) in two soil-gas samples. It is Apex's opinion that the VOCs detected in soil-gas have been delineated, and that additional investigation is not warranted. However, to eliminate the soil-gas exposure pathway for building occupants, mitigation will be required. It is



<sup>&</sup>lt;sup>1</sup> Guidance on Soil Performance Standards, Remediation & Redevelopment Program, Wisconsin DNR, dated January 2014.

anticipated that a sub-slab depressurization system will be installed and follow-up monitoring will be conducted to verify the system is effectively mitigating vapor intrusion to indoor air.



# RESULTS OF SITE INVESTIGATION BRIGHT CLEANERS TENANT SPACE, FRANKLIN CENTRE 7249 SOUTH 76TH STREET FRANKLIN, MILWAUKEE COUNTY, WISCONSIN

#### 1.0 INTRODUCTION

Franklin Station LLC (Client) acquired a retail strip mall located at 7199-7255 South 76<sup>th</sup> Street in Franklin, Milwaukee County, Wisconsin (the Site) in 2016. The general vicinity of the Site is shown in **Figure 1**.

Prior to acquiring the Site, Client retained Apex Companies, LLC (Apex) to conduct a Phase I Environmental Site Assessment (ESA) at the Franklin Centre. The Phase I ESA identified one recognized environmental condition (REC), use of dry cleaning solvents in a tenant space currently occupied by Bright Cleaners. The findings of the Phase I ESA were presented in Apex's report dated September 28, 2016.

Client subsequently retained Apex to conduct a Phase II Limited Subsurface Investigation (subsurface investigation) at the dry cleaner tenant space at 7249 South 76th Street.

#### 1.1 Background Information

The Franklin Centre occupies approximately 14.6-acres, and is developed with a 120,000-square foot (SF) multi-tenant shopping center with slab-on-grade floors (no basements), asphalt pavement and landscaped areas as shown in **Figure 2**. The Bright Cleaners tenant space is 1,280 SF and includes a closed loop dry cleaning plant, located near the central portion of the tenant space as shown in **Figure 3**. Photographs of the dry cleaning tenant space are included in **Appendix A**.

Historical records show two businesses have operated dry cleaning plants in this tenant space: Sun Cleaners in 1995 and Bright Cleaners from 1999 to present. Businesses immediately adjoining the dry cleaner tenant space include UPS Store to the west and Pizza Hut to the east.

#### 1.2 Previous Reports & Agency Correspondence

**Phase I ESA (2016)**. Apex's September 2016 Phase I ESA report included review of a previous reports by Weaver Boos Consultants North Central, LLC (Weaver) titled *Phase I and Phase II Environmental Site Assessment, Franklin Centre – Parcel 1, 7201 76<sup>th</sup> Street, Franklin, Wisconsin 53132*, dated May 6, 2001; *Phase I Environmental Site Assessment, 7201 South 76<sup>th</sup> Street, Franklin, Wisconsin*, dated May 27, 2011; *Limited Phase II Environmental Site Assessment Report, Bright Cleaners, 7249 South 76<sup>th</sup> Street, Franklin, Wisconsin*, dated June 17, 2011; *and, Supplemental Response Activities, Bright Cleaners, 7249 South 76<sup>th</sup> Street, Franklin, Wisconsin*, dated June 28, 2011. The use of dry cleaning solvents at Bright Cleaners was identified as a REC.

**Phase I ESA (2001 and 2011)**. In its 2011 Phase I ESA report, Weaver identified the potential presence of subsurface impacts associated with an active drycleaner facility at the Site. Weaver referenced a previous Phase I and Phase II ESA that they conducted at the Site in 2001. According



to the 2001 Phase I ESA, Weaver observed staining on the floor in proximity of the dry cleaning machine and improperly stored hazardous materials.

**Results of Soil Analysis (2001)**. Weaver advanced three soil borings in the vicinity of the dry cleaning machine and outside of the tenant space. Soil samples were analyzed for volatile organic compounds (VOCs). Analytical results were below laboratory detection limits.

Results of Soil Analysis (2011). Weaver conducted a Limited Phase II ESA in June 2011 that included the collection of six soil samples from three soil boring locations for VOC analysis. Weaver compared the laboratory results to the Wisconsin Department of Natural Resources' (Wisconsin DNR) Residual Contaminant Levels (RCLs). One soil sample located outside of the Bright Cleaners by the rear door (SP-1 / 2-4') was found to have concentrations of 1,1,1 trichloroethane (1,1,1-TCA) that exceed the RCLs. The deeper sample from SP-1 had 1,1,1-TCA concentrations below RCLs. Weaver did not encounter groundwater during the Limited Phase II ESA. Weaver concluded that VOC impacts appear to be limited to shallow subsurface soils near SP-1.

**Supplemental Response Activities (2011)**. Weaver conducted additional activities at the Site in response to the results of the Limited Phase II ESA in June 2011. Weaver collected six additional shallow soil samples that were analyzed for VOCs to delineate the extent of contamination beyond SP-1. VOCs were not detected at concentrations in excess of laboratory Method Detection Limits (MDLs). Weaver excavated approximately 58 tons of soil in the vicinity of SP-1. Five confirmatory soil samples were collected from the excavation and analyzed for VOCs. Concentrations of VOCs were not found above RCLs in the five confirmatory samples. Weaver concluded that mitigation of the VOC impacts at the Site was successful.

**Correspondence from Wisconsin DNR (2013)**. Apex reviewed a letter from the Wisconsin DNR<sup>2</sup> titled *Final Case Closure, Bright Cleaners, 7249 South 76<sup>th</sup> Street, Franklin, WI, DNR BRRTS Activity* #: 02-41-557111, FID #: 241928940, dated December 27, 2013. In its letter, the Wisconsin DNR stated that the release at Bright Cleaners is closed and no further investigation or remediation was required at that time. Apex notes that Bright Cleaners continued to operate the dry cleaning plant from 2011 to the present.

**Phase II Limited Subsurface Investigation (2016).** To assess the risk of subsurface impacts associated with the continued use of dry cleaning solvents at the Bright Cleaners tenant space since 2011, Apex conducted subsurface assessment on August 31, 2016.

Subsurface assessment included collection of soil samples from three exterior borings (TW-1 through TW-3); collection of groundwater samples from two temporary monitoring wells (TW-1 and TW-3); and collection of sub-slab soil-gas samples from three locations (SV-1 through SV-3). The soil, groundwater and soil-gas samples were submitted for VOC analysis. Apex notes that groundwater was not encountered in one temporary well (TW-2). The locations of the soil borings, temporary monitoring well locations and soil-gas samples are shown in **Figure 3**.

<sup>&</sup>lt;sup>2</sup> Source: Wisconsin Department of Natural Resources (DNR) Bureau for Remediation and Redevelopment Tracking System (BRRTS) data repository.

- The soil analysis detected one VOC (methylene chloride) in one soil sample (TW-1 at 14 feet below ground surface [bgs]) at a concentration that slightly exceeded the soil (leaching) component to groundwater RCL. Apex notes that methylene chloride has historically been used in paint removers, solvent degreasing, plastics processing, blowing agent in foams, solvent extraction, solvent for cellulose acetate, and as an aerosol propellant. Additionally, methylene chloride is a common laboratory contaminant, and was detected in the associated Method Blank. Therefore, it is Apex's opinion that methylene chloride detected in one soil sample is a laboratory artifact, and does not reflect contamination from historical Site operations.
- The groundwater analysis did not detect any compounds in excess of Groundwater Quality Standards (GQSs).
- The soil-gas analysis detected tetrachlorothene (PCE) in two sub-slab soil gas samples (SV-1 and SV-2) at concentrations in excess of the commercial Vapor Action Levels (VAL).

The results of the soil analysis, groundwater analysis and soil-gas analysis are summarized in **Tables 1, 2 and 3**, respectively.

#### 1.3 Objectives and Scope of Work

To further characterize the extent of VOC impacts in soil, groundwater and sub-slab soil-gas, Apex conducted expanded assessment in and near the dry cleaner tenant space in August 2017. The specific scope of work included (1) soil sampling/analysis; (2) monitoring well installation and groundwater sampling/analysis; and (3) soil-gas sampling/analysis

The subsurface assessment activities are discussed in **Section 2.0**; soil and groundwater conditions are discussed in **Section 3.0**; the results of soil, groundwater and soil-gas analysis are discussed in **Section 4.0**; a summary of the assessment is discussed in **Section 5.0**; and our conclusions and recommendations are discussed in **Section 6.0**.



#### 2.0 EXPANDED SUBSURFACE ASSESSMENT

Previous subsurface assessment conducted by Apex in August 2016 included the advancement of three soil borings (TW-1 through TW-3); collection/analysis of one soil sample from each soil boring (3 total); installation of three temporary groundwater monitoring wells (TW-1 through TW-3): collection/analysis of two groundwater samples (TW-1 and TW-3); and, collection/analysis of three sub-slab soil-gas samples (SV-1 through SV-3).

Expanded subsurface assessment included a non-invasive geophysical survey to clear underground utilities; the advancement of four soil borings (MW-1 through MW-3 and B-1); collection/analysis of soil samples from three soil borings (MW-1, MW-2, and B-1); installation, sampling and analysis of three permanent groundwater monitoring wells (MW-1 through MW-3); and, collection/analysis of three sub-slab soil-gas samples (SV-4 through SV-6) between August 11 and 17, 2017.

The locations of the soil borings, monitoring wells and sub-slab sample locations are shown in **Figures**3. Photographs taken at the time of fieldwork are included in **Appendix A**. Apex's field protocols are described in **Appendix B**.

#### 2.1 Performance of a Geophysical Survey

Apex retained Ground Penetrating Radar Systems, Inc. (GPRS) to perform a non-invasive geophysical survey in an effort to clear the boring locations and avoid damaging underground utilities. The geophysical survey was performed using a combination of ground-penetrating radar (GPR) and radio detection (RD) techniques.

#### 2.2 Soil Sampling and Analytical Program

#### 2.2.1 Soil Sampling

To assess soil conditions at the Site, Apex used a track-mounted Geoprobe<sup>TM</sup> rig and/or jackhammer with Geoprobe<sup>TM</sup> sample rods to collect soil samples from four borings (MW-1 through MW-3 and B-1), each advanced to probe refusal, encountered at depths ranging from 4 to 18 feet bgs. Soil borings were advanced in the locations of the three permanent monitoring wells prior to well installation to collect soil samples and for lithologic description as described below. One soil boring was advanced within the dry cleaners tenant space to evaluate the source area. The locations of the soil borings/monitoring wells are shown in **Figure 3**.

**Lithologic Description**. Soil samples were logged continuously from ground surface to the bottom of each boring. An experienced Apex geologist documented the subsurface conditions (soil type, volatile emissions using a photoionization detector [PID], the presence of staining, odors and groundwater levels, etc.) in each boring. Field screening of soil generally did not exhibit indications of VOC impacts. The soil conditions and results of field screening are shown in Apex's boring logs, and Wisconsin DNR Soil Boring Log Information forms (Form 4400-122) in accordance with WAC NR 716.15(4)(g)(4), included in **Appendix C**.



#### 2.2.2 Soil Analysis

Representative soil samples were collected to document the lateral and vertical extent of chemical impacts. Soil collected from three borings, MW-1 (depth of 4 feet bgs), MW-2 (depth of 6 feet bgs), and B-1 (depth of 2 feet bgs), were analyzed for VOCs by EPA Method 5035/8260. The soil analysis was performed by STAT Analysis Corporation, a National Environmental Laboratory Accreditation Conference (NELAP) certified laboratory. The soil analysis was performed on a 5-day laboratory turnaround basis. The results of the initial and expanded soil analysis for VOCs are included in **Table 1** and discussed in **Section 4.1**.

#### 2.3 Groundwater Sampling and Analytical Program

#### 2.3.1 Monitoring Well Installation and Sampling/Analysis

Apex installed three shallow groundwater monitoring wells (MW-1 through MW-3) at the locations shown in **Figure 3**. The monitoring wells were installed to auger refusal, encountered at depths ranging from 15 to 19½ feet bgs. Apex constructed the wells using 2-inch diameter, schedule 40 PVC, factory-slotted well casing and blank risers. Following drilling and soil sampling, a well screen and riser was placed into the open borehole and a sand filter pack was placed in the annulus surrounding the well casing. This sand pack was placed to a depth of 2-feet above the well screen. The remainder of the borehole was backfilled with a well seal consisting of bentonite clay and grout. The monitoring wells were completed at ground surface using a flush-mount well box. A magnet was placed in the void between the cover and the annular space seal in accordance with NR 716.13(14)(b). Apex's field protocols are described in **Appendix B**. Apex's well construction diagrams, and Wisconsin DNR Groundwater Monitoring Well Information form (Form 4400-89) and Monitoring Well Construction forms (Form 4400-113A) in accordance with WAC NR 716.15(4)(g)(2), are included in **Appendix C**.

**Elevation Survey/Water Level Measurement.** Following installation, the top of three of the well casings (MW-1 through MW-3) were surveyed for lateral and vertical control by a licensed surveyor. Several days following well installation, stabilized ground water levels were measured in each well within an accuracy of 0.01-foot. The water level data and the results of the well elevation survey was used to calculate the groundwater gradient and lateral flow direction at the Site.

**Monitoring Well Development.** Following installation, the monitoring wells were developed to remove sediment and to improve hydraulic communication with the surrounding aquifer. Well development procedures consisted of the removal of approximately three to five well casing volumes of groundwater, and are documented in Wisconsin DNR Monitoring Well Development forms (Form 4400-113B) in accordance with WAC NR 716.15(4)(g)(3), included in **Appendix C**.

**Groundwater Sampling.** Groundwater samples were collected from each of the three monitoring wells using a low flow pump, in accordance with Wisconsin DNR-approved protocols. The groundwater samples were placed in clean, laboratory-supplied vials or bottles, labeled and placed in a chilled cooler pending delivery to the analytical laboratory. Appropriate chain-of-custody protocols were maintained throughout the sample-handling process, and a temperature blank was included in each shipping container.



#### 2.3.2 Groundwater Analysis

One groundwater sample from each monitoring well (three total) was analyzed for VOCs by EPA Method 8260. For quality control purposes, one duplicate groundwater sample (collected from monitoring well MW-1) and one trip blank were also analyzed for VOCs. The groundwater analysis was also performed by STAT Analysis Corporation, a NELAC-certified lab, on a 5-day laboratory turnaround basis. The results of the initial and expanded groundwater analysis are summarized in **Table 2** and discussed in **Section 4.2**.

#### 2.4 Soil-Gas Sampling and Analytical Program

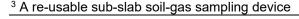
#### 2.4.1 Vapor Sampling Probe Installation

Apex installed three additional sub-slab soil-gas (vapor) probes (SV-4 through SV-6) through the concrete floor slab using a rotary hammer drill at the locations shown in **Figure 3**. These were installed to supplement SV-1 through SV-3 installed and sampled during the initial assessment in August 2016 and were used to assess the lateral extent of VOCs in sub-slab soil-gas. A description of Apex's field protocols and Soil-Gas Sample Logs are included in **Appendix B**.

The probes were installed by drilling a small diameter hole (5/8-inch) through the concrete slab into the underlying gravel-aggregate layer, approximately nine inches below the top of the concrete floor. A 1-inch diameter hole was drilled in the same location to approximately ½-inch below the top of the concrete floor for leak testing. The hole was then cleared of any debris prior to installing the soil-gas probe. The soil-gas probes consisted of a brass adapter/compression coupling, covered with a silicone tube, which was inserted and seated firmly into the 5/8-inch diameter hole drilled through the concrete slab. Apex installed vapor pins<sup>3</sup> in the concrete slab in 3 locations to allow for future sample collection, if warranted.

The soil-gas samples were collected using batch-certified 6-liter Summa® canisters (evacuated stainless steel canisters) with (30-minute) flow control valves with a flow rate of 200 milliliters per minute (mL/min). At each of the soil vapor probe location, the Summa® canister was connected to the sample probe and the regulator valve was opened. The initial time and vacuum pressure were recorded and monitored throughout sample collection. Chain of custody documentation was maintained throughout the sample handling process. Results of the field screening, purge volumes, leak test observations, sampling intervals, initial and final vacuum pressures and laboratory-supplied equipment identification numbers are summarized in the sub-slab sampling logs included in **Appendix C**.

Following collection of the soil-gas samples, the soil-gas probes were removed from the slab and the sampling areas were restored with concrete to match the surrounding hard surface. In areas where vapor pins were installed, the pins were capped to prevent transmission and covered with a secure stainless steel cover. Site photographs of the soil-gas sampling locations are included in in **Appendix A**. Soil-gas sampling details (i.e., results of field screening and leak testing; sample duration, initial







and final canister pressures; and laboratory identification numbers) are recorded in the soil-gas sample logs included in **Appendix B**.

### 2.4.2 Soil-Gas Analysis

The soil-gas samples (one sample from each vapor extraction point) were analyzed for VOCs by EPA Method TO-15. The soil-gas analysis was performed by STAT Analysis Corporation on a 5-day laboratory turnaround basis. The results of the initial and expanded soil-gas analysis are summarized in **Table 3** and discussed in **Section 4.3**.



#### 3.0 SOIL AND GROUNDWATER CONDITIONS

#### 3.1 Soil Conditions

Apex advanced seven borings to rod refusal, encountered at depths ranging from 4 to 20 feet bgs. The soil borings encountered the following generalized lithologic sequence:

- Asphalt approximately 4 inches thick was encountered at ground surface in the exterior borings (MW-1 through MW-3). Concrete approximately 5 inches thick was encountered in the interior boring (B-1). Topsoil, asphalt pavements and concrete were generally underlain by approximately 3 inches of crushed stone.
- Silty clay/clayey silt was encountered below the crushed stone/aggregate to a depth of 20 feet bgs, the maximum depth explored.
- A discontinuous silty/clayey sand lens was encountered in MW-2 at depths ranging from 10 to 11 feet bgs.
- Gravel, sand and/or crushed stone was comingled with clay in MW-2 at depths ranging from 4 to 10 feet bgs and may be backfilled material from construction activities.

Apex did not encounter significant volatile emissions measured using a PID, chemical odors or other indications of a potential chemical release. Refer to boring logs included in **Appendix C** for additional information regarding the soil conditions. A cross section of the Site is provided as **Figure 4**.

#### 3.2 Groundwater Conditions

Groundwater at the Site occurs in an unconfined (water table) aquifer. Groundwater was generally encountered at depths ranging from 10 to 16 feet bgs at the time of drilling. The top of the monitoring well casings were surveyed for lateral and vertical control by Spaceco, Inc., a licensed surveyor.

Stabilized groundwater was measured at depths ranging from 8.40 to 11.97 feet bgs (756.82 to 760.91 feet above mean sea level). Based upon water level measurements, Apex calculates groundwater flows to the southwest at a gradient of 0.03 ft./ft. (horizontal to vertical). Groundwater elevation contours measured on August 17, 2017 are shown in **Figure 5**. The top of the well casings, water level measurements and groundwater elevations are summarized in a table included in **Appendix D**.

#### 3.2.1 Hydraulic Conductivity Testing

Apex performed in-situ hydraulic testing in three wells (MW-1, MW-2 and MW-3) to measure the hydraulic conductivity of the shallow aquifer (water bearing zone) beneath the Site. A pressure transducer/data logger was lowered below the water table and the water level was allowed to stabilize. The transducer/data logger was then connected to a Rugged Reader® using a waterproof coaxial cable. A quantity of water ('slug') was quickly removed from the well and rising head recovery rates were measured over time, until the water level recovered over the duration of the test. Due to the slow recovery in two wells (MW-1 and MW-3), the test was performed only once in these wells.



The Bouwer & Rice Method<sup>4</sup> was used to calculate a hydraulic conductivity (K) which ranged from 1.45 x 10<sup>-3</sup> centimeters/second (for MW-2) to 3.10 x 10<sup>-6</sup> centimeters/second (for MW-3) which shows that the hydraulic conductivity is highly variable at the Site. Apex opines that the higher hydraulic conductivity measured in well MW-2 is due to the discontinuous clayey sand lens observed at a depth of 10 to 11 feet bgs and was not present in soil borings MW-1 and MW-3. Considering that the potentiometric surface was consistent between wells MW-1 and MW-2, the clayey sand lens does not appear to be confined and localized groundwater flow in the shallow aquifer is characteristic of the predominant clayey silt/silty clay lithology. Additionally, a relatively slow hydraulic conductivity (10<sup>-6</sup> centimeters/second) is consistent with the observed silty clay lithology. The test parameters, field measurements, and head verses time data generated during the test runs are included as **Attachment D**.



<sup>&</sup>lt;sup>4</sup> Bouwer, Herman. 1989. The Bouwer and Rice Slug Test – An Update. Groundwater, Vol. 27, No. 3: 304-309.

# 4.0 RESULTS OF INITIAL AND EXPANDED SOIL, GROUNDWATER AND SOIL-GAS ANALYSIS

The results of the soil, groundwater and soil-vapor analysis are presented in **Tables 1** through **3** and discussed in the following sections. For soil, groundwater and soil-gas samples, the reporting limit for VOC analysis was the method detection limit for the analytical method used.

#### 4.1 Results of the Soil Analysis

Apex collected soil samples from six borings, TW-1 (14 feet bgs), TW-2 (11 feet bgs), TW-3 (12 feet bgs), MW-1 (4 feet bgs), MW-2 (6 feet bgs) and B-1 (2 feet bgs). The soil samples were analyzed for VOCs by EPA Method 5035/8260. The results of the soil analysis were compared to Non-Industrial and Industrial RCLs for Direct Contact and the soil (leaching) component to groundwater cited in the U.S. Environmental Protection Agency's (USEPA) Regional Screening Level Web-Calculator (March 2017) in accordance with Wisconsin Administrative Code NR 720 (WAC 720).

The soil analysis detected one VOC (methylene chloride) at a concentration in excess of RCLs in two borings as summarized below.

		Concentrations in milligrams per kilogram Detected (mg/kg)						
Compound	Boring @		Residual Contaminant Levels					
	Depth (bgs)	Concentration	Non- Industrial	Industrial	Soil (leaching) Groundwater			
Methylene	TW-1 @ 14 ft.	0.0019	61.8	1 150	0.0013			
chloride	MW-1 @ 4'	0.0015	01.0	1,150				

Concentration exceeding the RCL is highlighted in yellow and shown as **bold** Exceeded RCL is highlighted in green

As summarized above, the soil analysis detected one VOC at concentrations that slightly exceed the RCL for the soil (leaching) component to groundwater exposure pathway. The soil analysis did not detect any VOCs at concentrations in excess of RCLs for direct-contact (non-industrial and industrial), and no additional VOCs at concentrations in excess of RCLs for the soil component to groundwater per WAC 720.

Apex notes that methylene chloride has historically been used in paint removers, solvent degreasing, plastics processing, blowing agent in foams, solvent extraction, solvent for cellulose acetate, and as an aerosol propellant. Additionally, methylene chloride is a common laboratory contaminant, and was detected in the method blank associated with sample TW-1. Therefore, it is Apex's opinion that methylene chloride detected in sample TW-1 is a laboratory artifact, and does not reflect contamination from historical Site operations.

The results of the soil analysis, RCLs and sample depths are summarized in **Table 1** and the sample locations are shown in **Figure 3**. Copies of the laboratory reports and the chain-of custody form are included in **Appendix E**.



#### 4.2 Results of Groundwater Analysis

Apex collected two groundwater samples from two temporary monitoring wells (TW-1 and TW-3) and three groundwater samples from three dedicated monitoring wells (MW-1 through MW-3). Apex also collected one duplicate sample (from MW-1) and one trip blank. The groundwater samples were analyzed for VOCs by EPA Method 8260.

The results of the groundwater analysis were compared to GQS (Enforcement Standards and Preventative Action Limits) cited in WAC NR 140.10 Table 1 (WAC 140) and Vapor Risk Screening Levels (VRSLs) for groundwater for a commercial property use based on the USEPA Vapor Intrusion Screening Level Calculator (VISLC, Version 3.5.2, October 2017) with an excess lifetime cancer risk of 1 x 10<sup>-5</sup> in accordance with WAC NR 716 (WAC 716).

The groundwater analysis did not detect VOCs at concentrations in excess of GQSs or VRSLs. Apex notes that methylene chloride was detected in two soil samples at concentrations in excess of the soil component to groundwater RCL; however, the groundwater analysis did not detect methylene chloride at concentrations in excess of MDLs in the corresponding monitoring wells.

The results of the groundwater analysis, GQSs and VISLs are summarized in **Table 2** and the sample locations are shown in **Figure 3**. Copies of the laboratory reports and the chain-of-custody form are included in **Appendix E**.

#### 4.3 Results of the Soil-Gas Analysis

Apex collected 6 soil-gas samples immediately below the concrete floor slab in, and adjacent to the dry cleaner tenant space at the locations shown in **Figure 3**. One soil-gas sample was collected near the center of the Bright Cleaners tenant space (SV-1), one adjacent to the dry cleaning plant (SV-2), one adjacent to chemical storage (SV-3) and three samples (SV-4 through SV-6) were used to assess the lateral extent of VOCs in sub-slab soil-gas. The soil-gas samples were analyzed for VOCs by EPA Method TO-15.

The results of the soil-gas analysis were compared to sub-slab Vapor Action Levels (VALs) for a commercial property use based on the USEPA VISL (Version 3.5.1, May 2016) with an excess lifetime cancer risk of 1 x  $10^{-5}$  in accordance with WAC 716.

The soil-gas analysis detected PCE in two samples at concentrations in excess of commercial VALs per WAC 716 as summarized below.



Compound		Concentrations in micrograms per liter (µg/L)				
	Sample Number	Detected Concentration	Sub-Slab Vapor Action Level			
DOE	SV-1	12,000	E 900			
PCE	SV-2	44,000	5,800			

Concentration exceeding the VAL is highlighted in yellow and shown as **bold** Exceeded VAL is highlighted in green

The soil-gas analysis did not detect any additional VOCs at concentrations in excess of commercial VALs per WAC 716. The results of the soil-gas analysis and VALs are summarized in **Table 3**. The sample locations with VOC concentrations in excess of VALs are summarized and shown in **Figure 6**. Copies of the laboratory reports and the chain-of custody form are included in **Appendix E**.



#### 5.0 SUMMARY

Client retained Apex to conduct a Site Investigation at the Bright Cleaners tenant space at 7249 South 76th Street. This tenant space is located within Client's Franklin Centre, a retail strip mall located at 7199-7255 South 76th Street in Franklin, Milwaukee County, Wisconsin.

Historical records show two dry cleaning businesses have operated dry cleaning plants in this tenant space: Sun Cleaners in 1995 and Bright Cleaners from 1999 to present. Several rounds of soil sampling were conducted by others in the tenant space in 2011. One soil sample located outside of the Bright Cleaners by the rear door was found to have a concentration of 1,1,1-TCA that exceeded the RCLs. A deeper sample collected from the same location had a 1,1,1-TCA concentration below RCLs. Additional samples were collected and analyzed for VOCs to delineate the extent of contamination. Approximately 58 tons of soil in the vicinity of the 1,1,1-TCA exceedance was excavated, and confirmation samples were collected that showed the contamination had been bounded. These results were submitted to the Wisconsin DNR. In its letter issued in 2013, the Wisconsin DNR stated that the release at Bright Cleaners is closed and no further investigation or remediation was required at that time.

Bright Cleaners' continued use of dry cleaning solvents in its operation through present day poses a REC. To assess the risk of subsurface impacts associated with the continued use of dry cleaning solvents in the tenant space since 2011, Apex conducted limited soil, groundwater and soil-gas sampling at the Site.

The soil analysis detected one VOC (methylene chloride) at concentrations in excess of RCLs for the soil (leaching) component to groundwater in two soil samples. The soil analysis did not detect VOCs at concentrations in excess of RCLs for direct contact. The groundwater analysis did not detect VOCs at concentrations in excess of GQSs and/or VRSLs, including methylene chloride. The soil-gas analysis detected one VOC (PCE) at concentrations in excess of VALs in two soil-gas samples.



#### 6.0 CONCLUSIONS AND RECOMENDATIONS

The results of the soil analysis detected methylene chloride at concentrations that slightly exceed the soil (leaching) component to groundwater. However, Apex notes that this compound is not associated with dry cleaning solvents, and was not detected in groundwater at concentrations in excess of MDLs or Preventative Action Limit (PAL) GQSs. Additionally, based on previous assessment, methylene chloride has been present in soil for at least 1 year and has not been detected in groundwater at both locations. Therefore, it is Apex's opinion that a soil remedy for the groundwater pathway for methylene chloride is not needed<sup>5</sup>.

Considering that VOCs were not detected in groundwater at concentrations in excess of GQSs, it is Apex's opinion that additional groundwater investigation is not warranted.

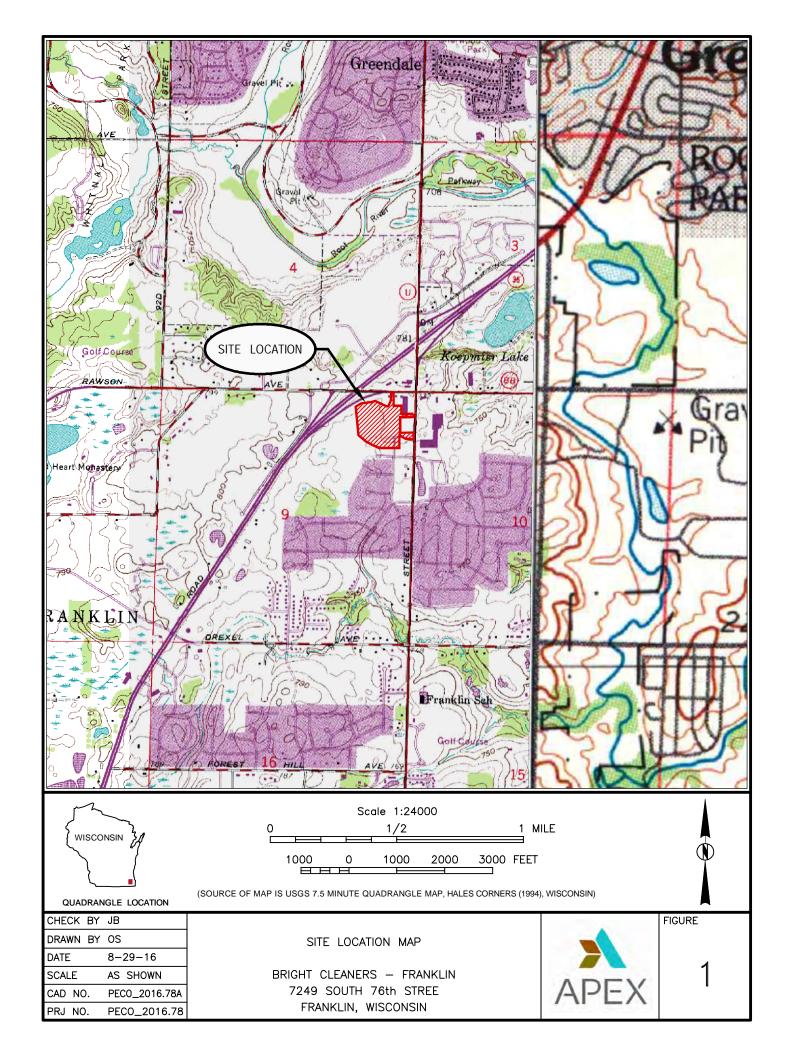
It is Apex's opinion that the VOCs detected in soil-gas have been delineated, and that additional investigation is not warranted. However, to eliminate the soil-gas exposure pathway for building occupants, mitigation will be required. It is anticipated that a sub-slab depressurization system will be installed and follow-up monitoring will be conducted to verify the system is effectively mitigating vapor intrusion to indoor air.

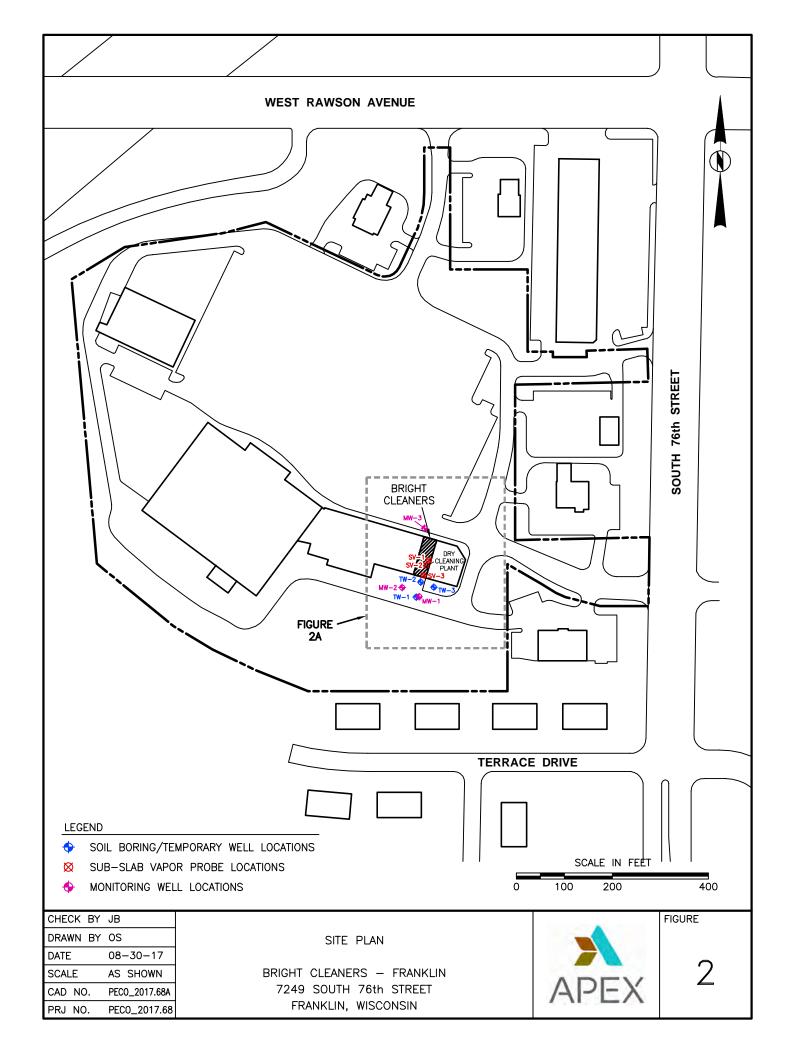
<sup>&</sup>lt;sup>5</sup> Guidance on Soil Performance Standards, Remediation & Redevelopment Program, Wisconsin DNR, dated January 2014.

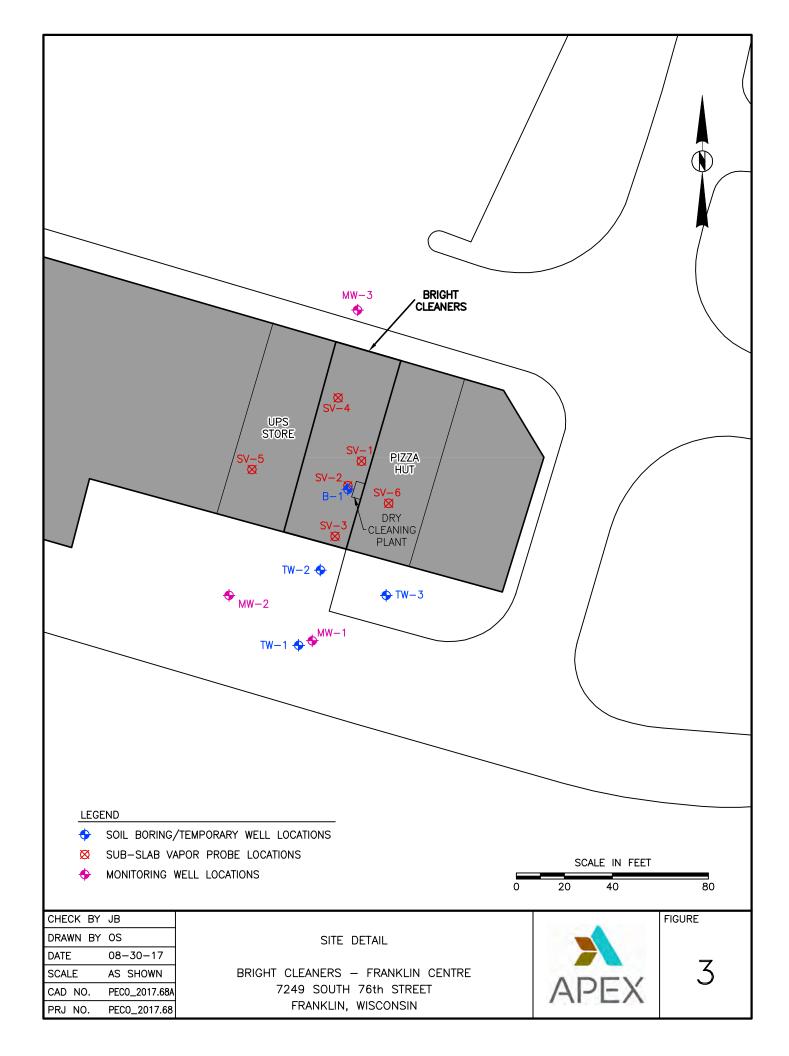


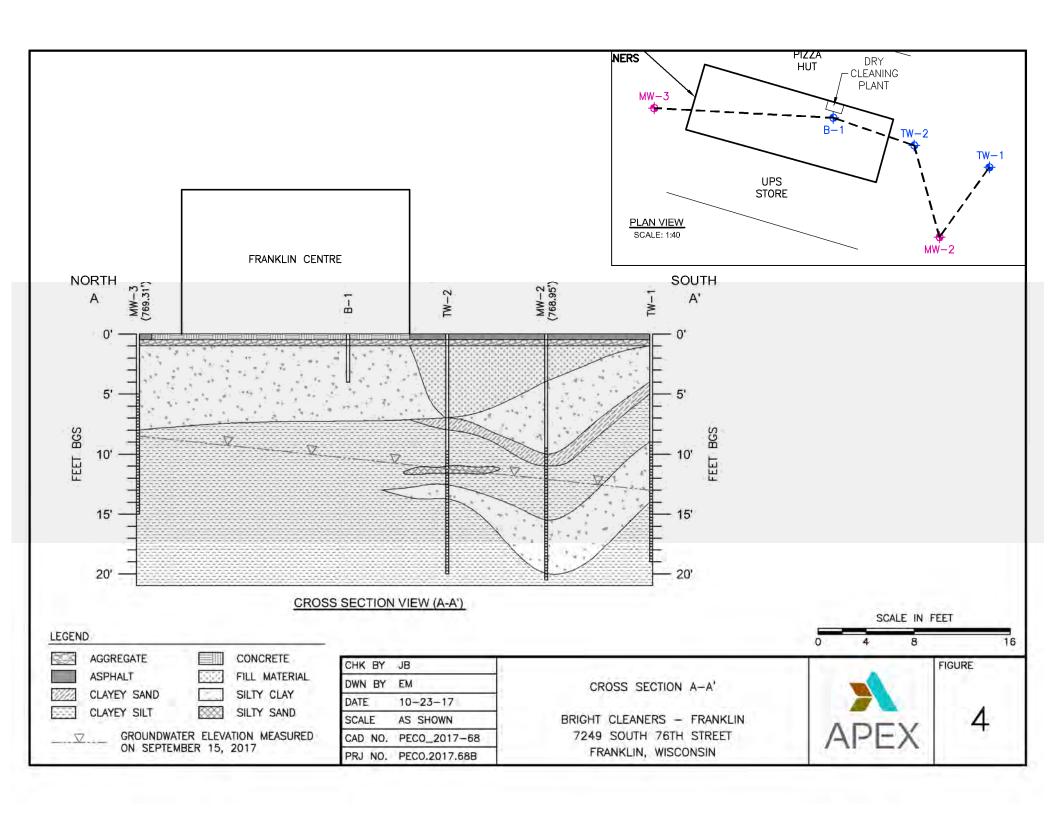
# Figures

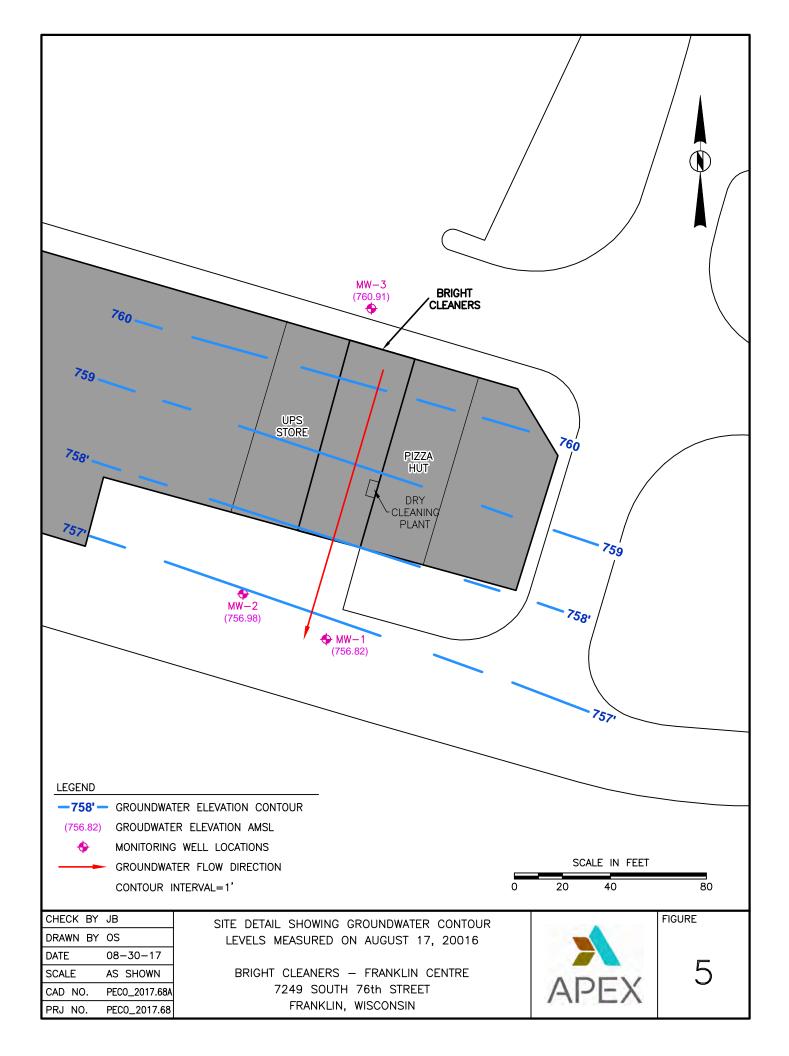


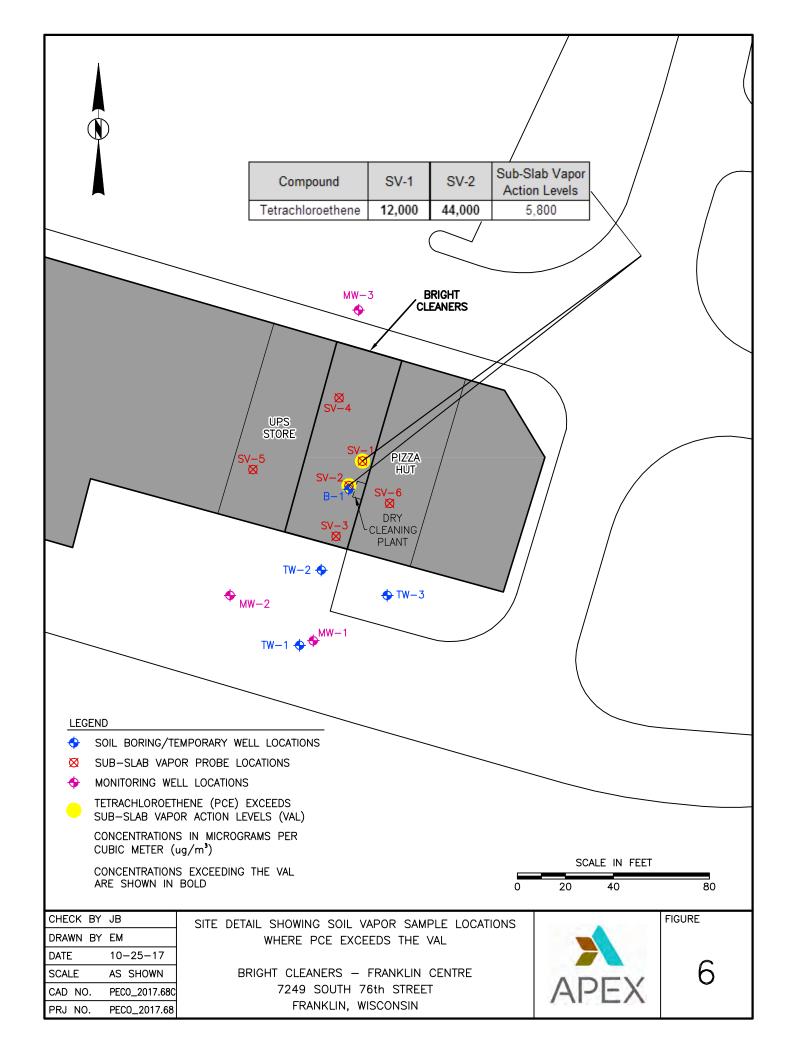












Data Tables



#### Table 1

#### Summary of Soil Data for Volatile Organic Compounds (VOCs) EPA Method 5035/8260B Bright Cleaners - Franklin Centre 7249 South 76th Street, Franklin, Wisconsin

concentrations in milligrams per kilogram (mg/kg)

				Residual Contaminant Levels				
Boring Number	TW-1 TW-2 TW-3		Direct C	Soil to				
Sample Depth (feet bgs)	14	11	12	N	1.1.4.4	Groundwater		
Date Collected		8/31/2016		Non-Industrial	Industrial			
Acetone	0.029	< 0.0016	< 0.0018	63,400	100,000	1.8383		
Benzene	0.0018	0.00044	0.00045	1.6	7.07	0.0026		
Bromodichloromethane	< 0.00039	< 0.00028	< 0.00031	0.418	1.83	0.0002		
Bromoform	< 0.00039	< 0.00028	< 0.00031	25.4	113	0.0012		
Bromomethane	< 0.00049	< 0.00035	< 0.00039	9.6	43	0.0025		
2-Butanone	< 0.0015	< 0.0011	< 0.0012	28,400	28,400	0.833		
Carbon disulfide	0.00019	0.00051	< 0.00015	738	738	0.2959		
Carbon tetrachloride	< 0.00029	< 0.00021	< 0.00023	0.916	4.03	0.0019		
Chlorobenzene	< 0.00019	< 0.00014	< 0.00015	370	761	0.0679		
Chloroethane	< 0.00039	< 0.00028	< 0.00031	2,120	2,120	0.1133		
Chloroform	< 0.00019	< 0.00014	< 0.00015	0.454	1.98	0.0017		
Chloromethane	< 0.00029	< 0.00021	< 0.00023	159	669	0.0078		
Dibromochloromethane	< 0.00039	< 0.00028	< 0.00031	8.28	38.9	0.016		
1,1-Dichloroethane	< 0.00029	< 0.00021	< 0.00023	5.06	22.2	0.2417		
1,2-Dichloroethane	< 0.00058	< 0.00042	< 0.00046	0.652	2.87	0.0014		
1,1-Dichloroethene	< 0.00029	< 0.00021	< 0.00023	320	1,190	0.0025		
cis-1,2-Dichloroethene	< 0.00029	< 0.00021	< 0.00023	156	2,340	0.0206		
trans-1,2-Dichloroethene	< 0.00029	< 0.00021	< 0.00023	1,560	1,850	0.0313		
1,2-Dichloropropane	< 0.00039	< 0.00028	< 0.00031	0.406	1.78	0.0017		
cis-1,3-Dichloropropene	< 0.00019	< 0.00014	< 0.00015	1,210	1,210	0.0001		
trans-1,3-Dichloropropene	< 0.00029	< 0.00021	< 0.00023	1,510	1,510	0.0001		
Ethylbenzene	0.00026	< 0.00007	< 0.000077	8.02	35.4	0.785		
2-Hexanone	< 0.00078	< 0.00056	< 0.00062	237	1,760	NE		
4-Methyl-2-pentanone	< 0.00029	< 0.00021	< 0.00023	2,450	2,450	0.1126		
Methylene Chloride	0.0019	< 0.00056	< 0.00062	61.8	1,150	0.0013		
Methyl tertiary-butyl ether	< 0.00019	< 0.00014	< 0.00015	63.8	282	0.0135		
Styrene	< 0.00019	< 0.00014	< 0.00015	867	867	0.11		
1,1,2,2-Tetrachloroethane	< 0.00019	< 0.00014	< 0.00015	0.81	3.6	0.0000782		
Tetrachloroethene	< 0.00029	< 0.00021	< 0.00023	33	145	0.0023		
Toluene	0.0017	0.00046	0.00041	818	818	0.5536		
1,1,1-Trichloroethane	< 0.00019	< 0.00014	< 0.00015	640	640	0.0701		
1,1,2-Trichloroethane	< 0.00049	< 0.00035	< 0.00039	1.59	7.01	0.0016		
Trichloroethene	< 0.00019	< 0.00014	< 0.00015	1.3	8.41	0.0018		
Vinyl chloride	< 0.00039	< 0.00028	< 0.00031	0.067	2.08	0.000069		
Xylenes (total)	< 0.00039	< 0.00028	< 0.00031	260	260	1.98		

#### Table 1 (Continued)

#### Summary of Soil Data for Volatile Organic Compounds (VOCs) EPA Method 5035/8260B Bright Cleaners - Franklin Centre

## 7249 South 76th Street, Franklin, Wisconsin

concentrations in milligrams per kilogram (mg/kg)

				Residual Contaminant Levels				
Boring Number	MW-1	MW-1 MW-2 B-1		Direct (	- Soil to			
Sample Depth (feet bgs)	4	6	2	Non Industrial Industrial		Groundwater		
Date Collected		8/11/2017		Non-Industrial	Industrial			
Acetone	0.075	0.025	0.064	63,400	100,000	1.8383		
Benzene	0.0025	0.0021	0.0015	1.6	7.07	0.0026		
Bromodichloromethane	< 0.00036	< 0.00035	< 0.0003	0.418	1.83	0.0002		
Bromoform	< 0.00036	< 0.00035	< 0.0003	25.4	113	0.0012		
Bromomethane	< 0.00045	< 0.00043	< 0.00037	9.6	43	0.0025		
2-Butanone	0.011	0.0040	0.0099	28,400	28,400	0.833		
Carbon disulfide	< 0.00018	< 0.00017	< 0.00015	738	738	0.2959		
Carbon tetrachloride	< 0.00027	< 0.00026	< 0.00022	0.916	4.03	0.0019		
Chlorobenzene	< 0.00018	< 0.00017	< 0.00015	370	761	0.0679		
Chloroethane	< 0.00036	< 0.00035	< 0.0003	2,120	2,120	0.1133		
Chloroform	< 0.00018	< 0.00017	< 0.00015	0.454	1.98	0.0017		
Chloromethane	< 0.00027	< 0.00026	< 0.00022	159	669	0.0078		
Dibromochloromethane	< 0.00036	< 0.00035	< 0.0003	8.28	38.9	0.016		
1,1-Dichloroethane	< 0.00027	< 0.00026	< 0.00022	5.06	22.2	0.2417		
1,2-Dichloroethane	< 0.00054	< 0.00052	< 0.00045	0.652	2.87	0.0014		
1,1-Dichloroethene	< 0.00027	< 0.00026	< 0.00022	320	1,190	0.0025		
cis-1,2-Dichloroethene	< 0.00027	< 0.00026	< 0.00022	156	2,340	0.0206		
trans-1,2-Dichloroethene	< 0.00027	< 0.00026	< 0.00022	1,560	1,850	0.0313		
1,2-Dichloropropane	< 0.00036	< 0.00035	< 0.0003	0.406	1.78	0.0017		
cis-1,3-Dichloropropene	< 0.00018	< 0.00017	< 0.00015	1,210	1,210	0.0001		
trans-1,3-Dichloropropene	< 0.00027	< 0.00026	< 0.00022	1,510	1,510	0.0001		
Ethylbenzene	0.0013	0.00088	0.0010	8.02	35.4	0.785		
2-Hexanone	< 0.00072	< 0.00069	< 0.0006	237	1,760	NE		
4-Methyl-2-pentanone	< 0.00027	< 0.00026	< 0.00022	2,450	2,450	0.1126		
Methylene Chloride	0.0015	< 0.00069	< 0.0006	61.8	1,150	0.0013		
Methyl tertiary-butyl ether	< 0.00018	< 0.00017	< 0.00015	63.8	282	0.0135		
Styrene	< 0.00018	< 0.00017	< 0.00015	867	867	0.11		
1,1,2,2-Tetrachloroethane	< 0.00018	< 0.00017	< 0.00015	0.81	3.6	0.0000782		
Tetrachloroethene	< 0.00027	< 0.00026	0.00067	33	145	0.0023		
Toluene	0.0044	0.0028	0.0028	818	818	0.5536		
1,1,1-Trichloroethane	< 0.00018	< 0.00017	< 0.00015	640	640	0.0701		
1,1,2-Trichloroethane	< 0.00045	< 0.00043	< 0.00037	1.59	7.01	0.0016		
Trichloroethene	< 0.00018	< 0.00017	0.0010	1.3	8.41	0.0018		
Vinyl chloride	< 0.00036	< 0.00035	< 0.0003	0.067	2.08	0.000069		
Xylenes (total)	0.0025	0.0012	0.0014	260	260	1.98		

#### Notes:

bgs = feet below ground surface

TW-2 = Soil boring

< = Not Detected: Concentration less than the indicated laboratory detection limit

Detected compounds are shown as **bold** 

NE = Remedial Objective not established

RCLs (Non-Industrial Direct-Contact) = Residual Contaminant Levels per the U.S. EPA's Regional Screening Level Web-Calculator (updated March 2017) in accordance with Wisconsin Administrative Code NR 720

RCLs (Industrial Direct-Contact) = Residual Contaminant Levels per the U.S. EPA's Regional Screening Level Web-Calculator (updated March 2017) in accordance with Wisconsin Administrative Code NR 720

RCLs (Soil to Groundwater) = Soil to Groundwater Residual Contaminant Levels per the U.S. EPA Regional Screening Level Web-Calculator (updated June 2016) in accordance with Wisconsin Administrative Code NR 720

Concentrations in excess of RCLs are shaded yellow Exceeded RCLs are shaded green

#### Table 2

## **Summary of Groundwater Data for**

#### Volatile Organic Compounds (VOCs) EPA Method 8260B Bright Cleaners - Franklin Centre 7249 South 76th Street, Franklin, Wisconsin

concentrations in milligrams per liter (µg/L)

				Duplicate	Groundwater Quality Standards		Vapor Risk Screening
Well Number	TW-1	TW-3	MW-1	(MW-1)	Enforcement Standards	Preventative Action Limit	Commercial
Date Collected	8/31	/2016	8/17	//2017			
Acetone	< 3.1	12	< 3.1	< 3.1	9,000	1,800	95,000,000
Benzene	< 0.2	0.24	< 0.2	< 0.2	5	0.5	69
Bromodichloromethane	< 0.2	< 0.2	< 0.2	< 0.2	0.6	0.06	38
Bromoform	< 0.3	< 0.3	< 0.3	< 0.3	4.4	0.44	5,100
Bromomethane	< 2	< 2	< 2	< 2	10	1	73
2-Butanone	< 1.6	< 1.6	< 1.6	< 1.6	4,000	800	9,400,000
Carbon disulfide	< 0.3	0.34	< 0.3	< 0.3	1,000	200	5,200
Carbon tetrachloride	< 1	< 1	< 1	< 1	5	0.5	18
Chlorobenzene	< 0.2	< 0.2	< 0.2	< 0.2	100	20	1,700
Chloroethane	< 0.5	< 0.5	< 0.5	< 0.5	400	80	97,000
Chloroform	< 0.1	< 0.1	< 0.1	< 0.1	6	0.6	36
Chloromethane	< 0.3	< 0.3	< 0.3	< 0.3	30	3	1,100
Dibromochloromethane	< 0.2	< 0.2	< 0.2	< 0.2	60	6	NE
1,1-Dichloroethane	< 0.2	< 0.2	< 0.2	< 0.2	850	85	330
1,2-Dichloroethane	< 0.2	< 0.2	< 0.2	< 0.2	5	0.5	98
1,1-Dichloroethene	< 0.4	< 0.4	< 0.4	< 0.4	7	0.7	820
cis-1,2-Dichloroethene	< 0.2	< 0.2	< 0.2	< 0.2	70	7	NE
trans-1,2-Dichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	100	20	NE
1,2-Dichloropropane	< 0.1	< 0.1	< 0.1	< 0.1	5	0.5	150
cis-1,3-Dichloropropene	< 0.2	< 0.2	< 0.2	< 0.2	0.4	0.04	210
trans-1,3-Dichloropropene	< 0.1	< 0.1	< 0.1	< 0.1	0.4	0.04	210
Ethylbenzene	< 0.3	< 0.3	< 0.3	< 0.3	700	140	150
2-Hexanone	< 0.2	< 0.2	< 0.2	< 0.2	NE	NE	34,000
4-Methyl-2-pentanone	< 0.7	< 0.7	< 0.7	< 0.7	500	50	2,300,000
Methylene Chloride	< 0.2	< 0.2	< 0.2	< 0.2	5	0.5	20,000
Methyl tertiary-butyl ether	< 0.3	< 0.3	< 0.3	< 0.3	60	12	20,000
Styrene	< 0.3	< 0.3	< 0.3	< 0.3	100	10	39,000
1,1,2,2-Tetrachloroethane	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.02	140
Tetrachloroethene	< 0.3	< 0.3	< 0.3	< 0.3	5	0.5	240
Toluene	< 0.4	< 0.4	< 0.4	< 0.4	800	160	81.000
1,1,1-Trichloroethane	< 0.2	< 0.2	< 0.2	< 0.2	200	40	31,000
1,1,2-Trichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	5	0.5	26
Trichloroethene	< 0.3	< 0.3	< 0.3	< 0.3	5	0.5	22
Vinyl chloride	< 0.3	< 0.3	< 0.3	< 0.3	0.2	0.02	25
Xylenes (total)	< 1	< 1	< 1	< 1	2,000	400	1.600

#### Table 2 (Continued)

#### **Summary of Groundwater Data for**

# Volatile Organic Compounds (VOCs) EPA Method 8260B Bright Cleaners - Franklin Centre 7249 South 76th Street, Franklin, Wisconsin

concentrations in milligrams per liter (µg/L)

				Groundwater Q	uality Standards	Vapor Risk Screening
Well Number	MW-2 MW	MW-3	Trip Blank	Enforcement Standards	Preventative Action Limit	Commercial
Date Collected		8/17/2017				
Acetone	< 3.1	< 3.1	< 3.1	9,000	1,800	95,000,000
Benzene	< 0.2	< 0.2	< 0.2	5	0.5	69
Bromodichloromethane	< 0.2	< 0.2	< 0.2	0.6	0.06	38
Bromoform	< 0.3	< 0.3	< 0.3	4.4	0.44	5,100
Bromomethane	< 2	< 2	< 2	10	1	73
2-Butanone	< 1.6	< 1.6	< 1.6	4,000	800	9,400,000
Carbon disulfide	< 0.3	< 0.3	< 0.3	1,000	200	5,200
Carbon tetrachloride	< 1	< 1	< 1	5	0.5	18
Chlorobenzene	< 0.2	< 0.2	< 0.2	100	20	1,700
Chloroethane	< 0.5	< 0.5	< 0.5	400	80	97,000
Chloroform	< 0.1	< 0.1	< 0.1	6	0.6	36
Chloromethane	< 0.3	< 0.3	< 0.3	30	3	1,100
Dibromochloromethane	< 0.2	< 0.2	< 0.2	60	6	NE
1,1-Dichloroethane	< 0.2	< 0.2	< 0.2	850	85	330
1,2-Dichloroethane	< 0.2	< 0.2	< 0.2	5	0.5	98
1,1-Dichloroethene	< 0.4	< 0.4	< 0.4	7	0.7	820
cis-1,2-Dichloroethene	< 0.2	< 0.2	< 0.2	70	7	NE
trans-1,2-Dichloroethene	< 0.5	< 0.5	< 0.5	100	20	NE
1,2-Dichloropropane	< 0.1	< 0.1	< 0.1	5	0.5	150
cis-1,3-Dichloropropene	< 0.2	< 0.2	< 0.2	0.4	0.04	210
trans-1,3-Dichloropropene	< 0.1	< 0.1	< 0.1	0.4	0.04	210
Ethylbenzene	< 0.3	< 0.3	< 0.3	700	140	150
2-Hexanone	< 0.2	< 0.2	< 0.2	NE	NE	34,000
4-Methyl-2-pentanone	< 0.7	< 0.7	< 0.7	500	50	2,300,000
Methylene Chloride	< 0.2	< 0.2	< 0.2	5	0.5	20,000
Methyl tertiary-butyl ether	< 0.3	< 0.3	< 0.3	60	12	20,000
Styrene	< 0.3	< 0.3	< 0.3	100	10	39,000
1,1,2,2-Tetrachloroethane	< 0.1	< 0.1	< 0.1	0.2	0.02	140
Tetrachloroethene	< 0.3	< 0.3	< 0.3	5	0.5	240
Toluene	< 0.4	< 0.4	< 0.4	800	160	81,000
1,1,1-Trichloroethane	< 0.2	< 0.2	< 0.2	200	40	31,000
1,1,2-Trichloroethane	< 0.1	< 0.1	< 0.1	5	0.5	26
Trichloroethene	< 0.3	< 0.3	< 0.3	5	0.5	22
Vinyl chloride	< 0.3	< 0.3	< 0.3	0.2	0.02	25
Xylenes (total)	< 1	< 1	< 1	2,000	400	1,600

#### Notes:

TW-3 = Temporary monitoring well

< = Not Detected: Concentration less than the indicated laboratory detection limit.

Detected concentrations are shown in **bold**.

NE = Remedial Objective not established.

Groundwater Quality Standards cited in Wisconsin Administrative Code NR 140.10 Table 1

Vapor Risk Screening Levels for groundwater with a commercial property use based on the U.S. EPA Vapor Intrusion Screening Level Calculator (Version 3.5.2, October 2017) with an excess lifetime cancer risk of 1 x 10<sup>5</sup> in accordance with Wisconsin Administrative Code NR 716

Concentrations in excess of GQSs and/or VRSLs are shaded yellow (none detected)

Exceeded GQSs and/or VRSLs are shaded green

#### Table 3

#### Summary of Soil Gas Data for

#### Volatile Organic Compounds (VOCs) EPA Method TO-15

#### Bright Cleaners - Franklin Centre 7249 South 76th Street, Franklin, Wisconsin

concentrations in micrograms per cubic meter (µg/m³)

Sub-slab Sample Number	SV-1	SV-2	SV-3	SV-4	SV-5	SV-6	Sub-Slab Vapo Action Levels
Date Collected							
Acetone	82	140	100	16	14	5.3	4,500,000
Benzene	2.9	1.4	3.4	0.26	0.26	0.12	520
Benzyl chloride	< 2.4	< 1.9	< 2.6	< 1.3	< 1.3	< 0.59	83
Bromodichloromethane	< 0.21	< 0.17	< 0.23	< 0.28	< 0.28	< 0.13	110
Bromoform	< 0.25	< 0.2	< 0.28	< 0.41	< 0.41	< 0.19	3,700
Bromomethane	0.54	0.50	0.79	0.47	< 0.37	0.22	730
1,3-Butadiene	< 0.13	< 0.11	< 0.14	< 0.42	< 0.42	< 0.19	140
2-Butanone	6.7	7.7	12	1.7	< 0.99	0.72	730,000
Carbon disulfide	0.50	< 0.29	0.48	< 0.26	< 0.26	< 0.12	100,000
Carbon tetrachloride	< 0.41	< 0.33	< 0.45	< 1.2	< 1.1	< 0.53	680
Chlorobenzene	< 0.13	< 0.11	< 0.14	< 0.94	< 3.7	< 0.43	7,300
Chloroethane	< 1.2	< 0.98	< 1.3	< 0.44	< 0.43	< 0.2	1,500,000
Chloroform	0.22	0.36	0.62	< 0.22	< 0.22	0.37	180
Chloromethane	< 0.24	< 0.19	< 2.6	< 0.95	< 0.95	< 0.44	13,000
Cyclohexane	2.5	1.3	4.6	< 0.6	< 0.59	< 0.27	880,000
Dibromochloromethane	< 0.32	< 0.25	< 0.35	< 0.43	< 0.43	< 0.2	NE
1,2-Dibromoethane	< 0.4	< 0.32	< 0.44	< 0.68	< 0.68	< 0.31	6.8
1,1-Dichloroethane	< 0.09	< 0.073	< 0.1	< 0.14	< 0.14	< 0.066	2,600
1,2-Dichlorobenzene	0.42	< 0.19	< 0.26	< 0.39	< 0.39	< 0.18	29,000
1,3-Dichlorobenzene	1.9	1.1	4.9	< 0.37	< 0.36	< 0.17	NE
1,4-Dichlorobenzene	< 0.29	< 0.24	< 0.32	< 0.42	< 0.42	< 0.19	370
Dichlorodifluoromethane	2.3	2.3	2.1	2.0	2.0	2.2	15,000
1,2-Dichloroethane	< 0.21	< 0.17	< 0.23	< 0.38	< 0.68	< 0.18	160
1,1-Dichloroethene	< 0.12	< 0.093	< 0.13	< 0.2	< 0.2	< 0.094	29,000
cis-1,2-Dichloroethene	1.7	18	32	< 0.63	< 0.62	< 0.29	NE
trans-1,2-Dichloroethene	< 0.13	0.15	< 0.14	< 0.22	< 0.22	< 0.1	NE
1,2-Dichloropropane	< 0.15	< 0.12	< 0.16	< 0.7	< 0.69	< 0.32	580
cis-1,3-Dichloropropene	< 0.25	< 0.2	< 0.27	< 0.44	< 0.44	< 0.2	1,000
trans-1,3-Dichloropropene	< 0.28	< 0.23	< 0.32	< 3.7	< 3.7	< 1.7	1,000
1,4-Dioxane	< 0.48	2.7	2.4	< 1.2	< 1.1	< 0.54	820
Ethyl acetate	< 0.33	< 0.27	< 0.37	< 1	< 1	< 0.48	10,000
Ethylbenzene	3.9	2.8	6.1	< 0.26	< 0.26	< 0.12	1,600
4-Ethyltoluene	1.4	0.91	1.6	< 0.42	< 0.42	< 0.19	NE
Freon-113	< 0.13	0.57	0.59	0.31	0.62	0.57	730,000
Freon-114	< 0.46	< 0.37	< 0.51	< 0.29	< 0.29	< 0.13	NE
Heptane	5.5	2.7	13	< 0.28	< 0.28	< 0.13	NE
Hexachlorobutadiene	0.74	< 0.45	< 0.61	< 0.9	< 0.9	< 0.41	190
Hexane	6.4	2.7	11	< 0.5	< 0.5	< 0.23	100,000
2-Hexanone	3.1	2.9	4.9	< 2.1	< 2.1	< 0.97	4,400
Isopropyl alcohol	310	110	65	50	36	0.64	29,000
4-Methyl-2-pentanone	12	6.1	9.4	< 1.1	< 1.1	< 0.52	440,000
Methylene Chloride	0.96	< 0.69	< 0.95	4.0	3.8	2.0	88,000
Methyl tertiary-butyl ether	0.25	0.33	0.28	< 0.17	< 0.17	< 0.076	16,000
Naphthalene	2.8	1.8	4.1	< 1.2	< 1.1	0.59	120
Propene	6.3	3.6	5.5	0.42	< 0.39	0.23	440,000
Styrene	0.78	0.32	0.54	< 0.82	< 0.81	< 0.38	150,000
1,1,2,2-Tetrachloroethane	< 0.22	< 0.18	< 0.24	< 0.38	< 0.38	< 0.18	70
Tetrachloroethene	12,000	44,000	1,900	2,400	520	26	5,800
Tetrahydrofuran	8.4	4.1	5.6	< 1.1	< 1.1	< 0.52	290,000
Toluene	81	46	47	< 0.35	< 0.34	< 0.16	730,000
1,2,4-Trichlorobenzene	1.9	0.96	1.1	< 1.1	< 1.1	< 0.53	290
1,1,1-Trichloroethane	< 0.13	< 0.11	< 0.14	< 0.21	0.88	< 0.098	730,000
1,1,2-Trichloroethane	< 0.24	< 0.19	< 0.26	< 0.56	< 0.56	< 0.26	29
Trichloroethene	22	41	26	12	26	< 0.15	290 NE
Trichlorofluoromethane	1.6	1.6	1.3	1.4	1.8	1.4	NE 9 900
1,2,4-Trimethylbenzene	5.1	3.9	7.5	0.40	< 0.22	0.37	8,800
1,3,5-Trimethylbenzene	1.4	0.91	2.0	< 0.28	< 0.27	< 0.13	NE 20,000
Vinyl acetate	< 0.22	< 0.18	< 0.24	< 1.1	< 1.1	< 0.53	29,000
Vinyl chloride	< 0.099	< 0.08	< 0.11	< 0.18	< 0.17	< 0.081	930
m,p-Xylene o-Xylene	8.8	6.0	12	< 0.44	< 0.44	0.24	15,000
0-A (1011B	3.6	2.4	4.8 17	< 0.23	< 0.22 < 0.65	0.16	15,000 15,000

#### Notes:

SV-2 = Sub-slab vapor sample

< = Not Detected: Concentration less than the indicated laboratory detection limit.

Detected concentrations are shown in  $\boldsymbol{bold}.$ 

NE = Remedial Objective not established.

Sub-Slab Vapor Action Levels for a commercial property use based on the U.S. EPA Vapor Instrusion Screening Level Calculator (Version 3.5.2, October 2017) with an excess lifetime cancer risk of 1 x 10<sup>-5</sup> in accordance with Wisconsin Administrative Code NR 716

Concentrations in excess of Remediation Objectives are shaded yellow Exceeded Remedial Objectives are shaded green

# Appendix A Site Photographs



## PHOTO LOG FOR BRIGHT CLEANERS – FRANLIN CENTRE 7249 SOUTH 76<sup>TH</sup> STREET, FRANKLIN, WISCONSIN

Photo No. 1 showing front of the Bright Cleaners tenant space, view to the south.



Photo No. 2 showing the clearance of underground utilities in the rear of the Bright Cleaners tenant space using ground penetrating radar, view to the northeast.

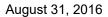




Photo No. 3 showing the advancement of a boring (TW-1) in the driveway south of the Bright Cleaners tenant space, view to the east.

August 31, 2016





## PHOTO LOG FOR BRIGHT CLEANERS – FRANLIN CENTRE 7249 SOUTH 76<sup>TH</sup> STREET, FRANKLIN, WISCONSIN

Photo No. 4 showing a temporary well (TW-1, red arrow) in the driveway south of the Bright Cleaners tenant space in the foreground and the advancement of a boring (TW-3) in the background, view to the northeast.

August 31, 2016



Photo No. 5 showing a temporary well (TW-2, red arrow) located near the rear door of the Bright Cleaners tenant space, view to the north.



August 31, 2016

Photo No. 6 showing the interior of the Bright Cleaners tenant space with the dry cleaning plant on the right, view to the north.





### PHOTO LOG FOR BRIGHT CLEANERS – FRANLIN CENTRE 7249 SOUTH 76<sup>TH</sup> STREET, FRANKLIN, WISCONSIN

Photo No. 7 showing a sub-slab vapor probe (SV-2) installed next to the dry cleaning plant. Leak testing is being performed on the probe by mechanical means using the water dam method.

August 31, 2016



Photo No. 8 showing a Summa® canister sample train being leak tested with a shut-in test by applying a negative pressure using a syringe and plunger.



Photo No. 9 showing a vapor probe (SV-3) located near the rear door of the Bright Cleaners tenant space being purged and screened for volatile emissions using a photoionization detector prior to sample collection, view to the south.

August 31, 2016





#### PHOTO LOG FOR BRIGHT CLEANERS – FRANLIN CENTRE 7249 SOUTH 76<sup>TH</sup> STREET, FRANKLIN, WISCONSIN

Photo No. 10 showing a sub-slab vapor probe installed north of the dry cleaning plant (SV-1) in the foreground and a second installed next to the plan (SV-2), view to the south.

August 31, 2016



Photo No. 11 showing the collection of a sub-slab vapor sample (SV-1) located north of the dry cleaning plant in the Bright Cleaners tenant space, view to the north.

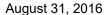




Photo No. 12 showing the collection of a sub-slab vapor sample (SV-2) located adjacent to the dry cleaning plant in the Bright Cleaners tenant space, view to the north.

August 31, 2016





#### PHOTO LOG FOR BRIGHT CLEANERS – FRANLIN CENTRE 7249 SOUTH 76<sup>TH</sup> STREET, FRANKLIN, WISCONSIN

Photo No. 13 showing a monitoring well (MW-1) being installed south of the Bright Cleaners tenant space, view to the west.



August 11, 2017

Photo No. 14 showing a monitoring well (MW-2) being installed southwest of the Bright Cleaners tenant space, view to the northeast.



August 11, 2017

Photo No. 15 showing a monitoring well (MW-3) being installed north of the Bright Cleaners tenant space, view to the south.



August 11, 2017



#### PHOTO LOG FOR BRIGHT CLEANERS – FRANLIN CENTRE 7249 SOUTH 76<sup>TH</sup> STREET, FRANKLIN, WISCONSIN

Photo No. 16 showing a vapor probe (SV-4) located in the northern portion of the Bright Cleaners tenant space being purged and screened for volatile emissions using a photoionization detector prior to sample collection, view to the south.

August 14, 2017



Photo No. 17 showing a vapor probe (SV-6) located in the Pizza Hut tenant space being purged and screened for volatile emissions using a photoionization detector prior to sample collection, view to the west.

August 14, 2017





## Appendix B Field Protocols, Soil-Gas Sample Logs & Well Data Sheets



# SUMMARY OF FIELD PROTOCOLS ADDITIONAL SUBSURFACE INVESTIGATION BRIGHT CLEANERS – FRANKLIN CENTRE 7249 SOUTH 76<sup>TH</sup> STREET FRANKLIN, MILWAUKEE COUNTY, WISCONSIN

Franklin Station LLC (Client) retained Apex Companies, LLC (Apex) to perform subsurface environmental assessment and pursue agency closure for the Bright Cleaners tenant at a 14.6-acre multi-tenant shopping center located at 7249 South 76<sup>th</sup> Street in Franklin, Wisconsin (the Site). We understand that Client recently acquired the Site for continued use as a multi-tenant retail shopping center.

Apex previously conducted a Limited Phase II Subsurface Investigation in the vicinity of the current dry cleaner tenant space in August 2016. The subsurface investigation detected tetrachloroethene (PCE) in soil gas at concentrations in excess of Wisconsin remediation objectives in two sub-slab soil gas samples. The additional subsurface investigation was conducted to delineate subsurface impacts due to the presence of the current Bright Cleaners operations, and to pursue agency closure regarding the release.

Additional subsurface assessment included performance of a non-invasive geophysical survey to clear underground utilities in the vicinity of soil borings; the collection of soil samples from three soil borings; installation/sampling of groundwater from three dedicated groundwater monitoring wells; installation/sampling of three permanent soil vapor extraction points; an elevation survey of the monitoring wells; water level measurement; and hydraulic conductivity testing.

#### **Geophysical Survey**

In an effort to avoid damaging substructures such as buried utilities at the Site, Apex retained Ground Penetrating Systems, Inc. (GPRS) to perform a non-invasive geophysical survey. The geophysical survey was performed using a combination of ground-penetrating radar (GPR) and radio detection (RD) techniques.

GPR transmits an electromagnetic pulse using a 400 MHz antenna through the ground and displays the reflection on a screen for immediate interpretation. GPR data was collected to evaluate the presence, depth and shape of subsurface targets (USTs, piping, buried foundations, etc.). The depth of exploration for GPR is typically limited to 5-7± feet below ground surface (bgs), depending on soil conditions.

RD techniques (RD-7000 Locator, or similar) are used to gauge the location of the buried metallic piping or conduits such as drain pipes. Radio detection involves induction of an electrical signal on metal objects (such as the ends of the piping or conduits) and tracing this signal using a hand-held detector.

#### Soil Sampling Using a Hydraulic Probe

To assess the presence of potential chemical impacts in shallow soil in the vicinity of the dry cleaner tenant space, Apex used a truck-mounted hydraulic probe (Geoprobe<sup>TM</sup> rig) and/or an electic jack



hammer with Geoprobe® rods to collect soil samples from four soil borings (B-1 and MW-1 through MW-3). Each of the borings was advanced to probe refusal, encountered at depths ranging from 4 to 18 feet bgs; copies of the boring logs are included in **Appendix C**.

Soil samples were collected continuously from ground surface to the bottom of each boring by pushing a 2-inch diameter by 5-foot long hollow-barreled sampler into/through the soil. Soil samples were collected in dedicated, disposable plastic liners contained in the sampler.

#### **Lithologic Description**

Soil samples were collected continuously from ground surface to the bottom of each boring for lithologic description and soil screening. An experienced geologist documented the subsurface conditions (soil type, photo-ionization detector [PID] measurements, the presence of staining, odors etc.). Our field observations and lithologic descriptions are summarized in the boring logs included in **Appendix C**.

#### Sample Screening/Selection

Soil samples were screened in the field for chemical odors, evidence of staining and volatile organic emissions using a PID equipped with a 10.6 eV PID lamp. The PID was calibrated using isobutylene calibration gas in accordance with the manufacturer's protocols prior to the start of fieldwork. Soil collected from various depth intervals in each boring was broken apart, placed and sealed in plastic 'ziploc' bags and after a few minutes volatile emissions were measured in the headspace using the PID. In the absence of such indications three representative soil samples were submitted for analysis. The results of the field screening are shown in Apex's boring logs, and Wisconsin DNR Soil Boring Log Information forms (Form 4400-122) in accordance with WAC NR 716.15(4)(g)(4), included in **Appendix C**.

#### **Soil Sample Handling Procedures**

A total of three soil samples were analyzed for volatile organic compounds (VOCs) by EPA Method 5035/8260. The samples were collected by pushing an Encore® sampler syringe into the soil to collect a 10 gram sample, the Encore® plunger was used to extrude the soil sample into clean, laboratory-supplied 40 milliliter (ml) VOA vials with methanol preservative. The VOA was immediately capped, labeled and placed in a chilled cooler for transport to the analytical laboratory. Soil samples for additional parameters were placed in clean, 4-ounce laboratory-supplied jars. Chain-of-custody protocols were maintained throughout the sample handing process.

#### **Monitoring Well Construction**

A Geoprobe rig was used to advance a borehole at each monitoring well location to document the soil conditions and to collect soil samples. A truck-mounted hollow-stem auger drill rig was then used at three locations (MW-1 through MW-3) to advance an 8-inch diameter borehole into the underlying aquifer zone; each well was installed to depths ranging from 15 to 20 feet bgs.

The monitoring wells were constructed using 2-inch diameter (schedule 40) PVC casing consisting of a 10-foot length of 0.010-inch factory slotted well screen with a blank riser. The filter pack, consisting of a sand pack, was placed around the well screen/riser extending 2-feet above the top of the screen.



The annulus of the borehole was then filled with bentonite chips (hydrated in place) to a depth of approximately 1-foot bgs, the remainder of the borehole was filled with cement. The wells were completed at ground surface using flush-mount well vaults set in cement. A magnet was placed in the void between the cover and the annular space seal in accordance with NR 716.13(14)(b). Copies of Apex's boring logs and well construction diagrams, and Wisconsin DNR Groundwater Monitoring Well Information form (Form 4400-89) and Monitoring Well Construction forms (Form 4400-113A) in accordance with WAC NR 716.15(4)(g)(2), are included in **Appendix C**.

#### **Monitoring Well Development**

Following installation, the monitoring wells were developed to remove sediment, consolidate the filter pack around the well screen and to improve hydraulic communication with the aquifer. Well development procedures consisted of the removal of approximately 2 to 6 well casing volumes of groundwater, and are documented in Wisconsin DNR Monitoring Well Development forms (Form 4400-113B) in accordance with WAC NR 716.15(4)(g)(3), included in **Appendix C**. Groundwater sampling was performed one week following well development.

#### **Groundwater Sampling**

Apex used a low-flow, peristaltic suction lift pump to purge two to three volumes of water from the well casing at a rate of ¼ gallon per minute prior to sampling. Clean, dedicated tubing was used at each well for well purging and water sampling. A multi-probe water quality meter was used to simultaneously measure pH, temperature, conductivity, dissolved oxygen and Oxidation-Reduction Potential. Once these parameters stabilized to within 10 percent on three consecutive measurements, the peristaltic pump was used to collect water samples. Groundwater parameter measurements are included in **Appendix B**.

Water samples collected for volatile organic compound (VOC) analysis were collected by filling 40-ml vials in a manner to minimize turbulence, air entrapment and overfilling. VOCs sample vials contained a hydrochloric acid preservative. The bottles were filled completely leaving a positive meniscus at the top of the vial. After capping, the vial was inverted and was tapped with a finger to confirm that air bubbles were not present. Effervesce was not observed in the vials following collection. Chain of custody documentation was maintained throughout the sample handling process. The sample vials and jars were then labeled and placed in a chilled cooler for transport to the analytical laboratory. As a quality assurance/quality control, Apex submitted one duplicate sample (from MW-1) and one trip blank for analysis.

#### **Soil-Gas Sampling Procedures**

Soil-gas samples were collected for analysis of VOCs including tetrachloroethene (PCE) and associated breakdown products from immediately below the concrete floor slab within the dry cleaner tenant space.

Apex advanced three soil-gas probes (SV-4 through SV-6) through the concrete floor slab at each location. A rotary hammer drill was used to advance a small diameter hole (5/8-inch) through the concrete slab or pavement into the underlying gravel-aggregate layer, approximately nine inches below the top of the hard surface. A 1-inch diameter hole was drilled in the same location to



approximately ½-inch below the top of the concrete floor for leak testing. The hole was then cleared of any debris prior to installing the soil gas probe. The soil gas probes consisted of a brass MIP adapter/compression coupling, covered with a silicone tube, which was inserted and seated firmly into the 5/8-inch diameter hole drilled through the hard surface. Leak testing was performed on each soil gas probe by mechanical means using the larger diameter hole as a water dam. The annulus of the 1-inch hole was filled with distilled water and monitored for fluctuations prior to and during sampling to verify that a leak had not occurred. Apex installed vapor pins in the concrete slab in 4 locations to allow for future sample collection, if warranted.

Prior to sample collection, the sub-slab gas probes were purged a minimum of three probe volumes of air from the sampling media to ensure representative samples of sub-slab soil gas and field screened for volatile organic emissions using a photoionization detector (PID) equipped with a 10.6 eV PID lamp. Soil gas samples were collected using batch-certified 6-liter Summa<sup>®</sup> canisters (evacuated stainless steel canister) with (30-minute) flow control valves with a flow rate of less than 200 milliliters per minute (mL/min). The laboratory-supplied regulator assembly was attached to the Summa® canister and a 3-foot section of 0.25-inch Teflon-lined polyethylene tubing was connected to the regulator using Swagelock® compression fittings. Leak testing was performed on each Summa® canister sample train prior to sample collection by performing a shut-in test. The shut-in test was performed by connecting the sample train tubing to a syringe and plunger. With the Summa<sup>®</sup> canister valve closed, a vacuum of approximately 20-inches mercury was applied to the sample train and maintained for 30 seconds. The pressure was observed to remain stable for the duration of the test. A photo log including photographs of the sub-slab soil gas sampling locations are included as Appendix A; soil-gas sampling details (i.e., results of field screening and leak testing; sample duration, initial and final canister pressures; and laboratory identification numbers) are recorded in the soil-gas sample logs included in Appendix B.

In areas where vapor pins were installed, the pins were capped to prevent transmission and covered with a secure stainless steel cover. The sample canisters were shipped to shipped to the analytical laboratory via Federal Express, accompanied by a completed chain-of-custody form. The samples were analyzed for VOCs by U.S. Environmental Protection Agency (EPA) Method TO-15 with a standard 5-day turnaround time.

#### **Well Surveying and Water Level Measurement**

The top of each monitoring well casing was surveyed for vertical control to an accuracy of 0.01-foot by SPACECO, Inc., a Wisconsin licensed surveyor. An electronic well sounder was used to measure to depth to groundwater from the top of the well casing to the top of shallow groundwater within an accuracy of 0.01-foot. The depth to water measurements was recorded in each well on August 14, August 17, and September 12, 2017. Stabilized water levels occurred at depths ranging from  $8\frac{1}{2}$  to 12 feet bgs, or 756.65 to 760.77 feet mean seal level (MSL). A summary of the well elevations provided by SPACECO, Inc., and the depth to groundwater and stabilized groundwater elevations are included in **Appendix D**.

#### **Hydraulic Testing**

To determine the hydraulic conductivity of the underlying aquifer Apex performed hydraulic testing in three dedicated monitoring wells (MW-1 through MW-3). A pressure transducer/data logger was



lowered below the water table and the water level was allowed to stabilize. The transducer/data logger was then connected to a Rugged Reader<sup>®</sup> using a waterproof coaxial cable. A quantity of water ('slug') was quickly removed from the well and rising head recovery rates were measured over time, until the water level recovered over the duration of the test. Due to the slow recovery, the test was performed only once in two monitoring wells (MW-1 and MW-3). A copy of the test parameters, field measurements, and head verses time data generated during the test runs are included in **Appendix D**.





Project Name:	Bright Cleaners - Franklin	Centre	Project Number:	PECO_2016-78		
Vapor Point Installation Date:	August 31, 2016		Project Address:	7249 South 76th Street		•
Sub-Slab Sample Date:	August 31, 2016		_	Franklin, Wisconsin		-
		SAMPLI	NG INFORMATION			
Soil Gas Implant Purge Air:	0 Stabilized PID Reading (PPM)	3 Volume (liters)	Sample Start Time:	August 31, 2016 DATE	12:28 TIME	
Leak Test Method:	Shut-in Test Sample Train	Water Dam Soil Gas Implant	Sample End Time: _	August 31, 2016 DATE	12:58 TIME	
Shut-in Test:	-20 Max. Vacuum (inches Hg)	30 Test Duration (seconds)	Initial Canister Vacuum: _	-35 Inches Hg	12:28 TIME	
Leak Test Notes:	No Loss Shut-in Test	No Loss Water Dam	Final Canister Vacuum: _	-15 Inches Hg	12:58 TIME	
Sample Depth:	< 1 Feet	t .	Sample Delivery: _	August 31, 2016 DATE	16:45 TIME	
Sample Container Details:	6 Volume (liters)	30 Flow Controler (minutes)	Delivery Method (FedEx, courier, etc.):	Delivered in person		
	M	ETEOROLOGICAL CO	ONDITIONS FOR SAMPLING DAY	<u> </u>		
	IVI	LILONOLOGICAL OC	SHEFFICIAL FOR SAMI LING BA			
Ambient Temperature (°F):	64 Low	74 High	Sea Level Pressure (Inches)_	30.08		
Average Wind:	North-northeast Direction	11 Velocity (mph)	Average Humidity (%):	67		
		ADDIT	IONAL DETAILS			
Other details for tenant space	e (e.g. recent construction/rend	ovation, cleaning activities,	chemical storage, slab/foundation cracks	, HVAC status etc.):		
	Sample was collected north of	f the dry cleaning plant.				
- Problems or inconsistancies (	encountered during sampling:					
-	Not applicable					
* Include a site sketch on sep	parate sheet noting sample loc	ations (with measurements)	, chemical storage areas, former operati	ons areas, etc.		
Sample Number:	SV-1		Analyses: _	VOCs by EPA Sample Meth	od TO-15	
SUMMA ID Number:	4723 (60319)		Requested Turnaround Time: _	1 Week TAT		
Regulator ID Number:	B-07		Sample Crew:	Joe Becker		_



Project Name:	Bright Cleaners - Franklin	Centre	Project Number:	PECO_2016-78		
Vapor Point Installation Date:	: August 31, 2016		Project Address:	7249 South 76th Street		
Sub-Slab Sample Date:	August 31, 2016		_	Franklin, Wisconsin		
		SAMPLIN	G INFORMATION			_
Soil Gas Implant Purge Air:	0 Stabilized PID Reading (PPM)	Volume (liters)	Sample Start Time:	August 31, 2016 DATE	12:32 TIME	
Leak Test Method:	Shut-in Test Sample Train	Water Dam Soil Gas Implant	Sample End Time:	August 31, 2016 DATE	13:02 TIME	
Shut-in Test:	-18 Max. Vacuum (inches Hg)	30 Test Duration (seconds)	Initial Canister Vacuum:	-30 Inches Hg	12:32 TIME	
Leak Test Notes:	No Loss Shut-in Test	No Loss Water Dam	Final Canister Vacuum:	-7 1/2 Inches Hg	13:02 TIME	
	< 1 Feet			August 31, 2016  DATE		
	Feet		Delivery Method (FedEx, courier,	DATE	TIME	
Sample Container Details:	6 Volume (liters)	30 Flow Controler (minutes)	etc.):	Delivered in person		
	М	ETEOROLOGICAL CO	NDITIONS FOR SAMPLING DAY	Υ		
Ambient Temperature (°F):	64 Low	74 High	Sea Level Pressure (Inches)_	30.08		
Average Wind:	North-northeast Direction	11 Velocity (mph)	Average Humidity (%):	67		
		ADDITIO	ONAL DETAILS			_
Other details for tenant space	e (e.g. recent construction/rend	ovation, cleaning activities, cl	nemical storage, slab/foundation cracks,	, HVAC status etc.):		
	Sample was collected next to	the dry cleaning plant.				
_						
Problems or inconsistancies	encountered during sampling:					
_	Not applicable					
* Include a site sketch on sep	parate sheet noting sample loca	ations (with measurements),	chemical storage areas, former operation	ons areas, etc.		
Sample Number:	SV-2		Analyses:	VOCs by EPA Sample Metho	od TO-15	
SUMMA ID Number:	6054 (60339)		Requested Turnaround Time:	1 Week TAT		
Regulator ID Number:	B-03		Sample Crew:	Joe Becker		



Project Name: _	Bright Cleaners - Franklin	Centre	Project Number: _	PECO_2016-78			
Vapor Point Installation Date:	August 31, 2016		Project Address: _	7249 South 76th Street			
Sub-Slab Sample Date: _	August 31, 2016		_	Franklin, Wisconsin			
		SAMPLIN	IG INFORMATION				
Soil Gas Implant Purge Air: _	0 Stabilized PID Reading (PPM)	3 Volume (liters)	Sample Start Time: _	August 31, 2016 DATE	12:34 TIME		
Leak Test Method: _	Shut-in Test Sample Train	Water Dam Soil Gas Implant	Sample End Time: _	August 31, 2016 DATE	13:04 TIME		
Shut-in Test: _	-16 Max. Vacuum (inches Hq)	30 Test Duration (seconds)	Initial Canister Vacuum: _	-32 Inches Hg	12:34 TIME		
Leak Test Notes: _	No Loss Shut-in Test	No Loss Water Dam	Final Canister Vacuum: _	-14 Inches Hq	13:04 TIME		
Sample Depth: _	< 1 Fee		Sample Delivery: _	August 31, 2016 DATE	16:45 TIME		
Sample Container Details:	6 Volume (liters)	30 Flow Controler (minutes)	Delivery Method (FedEx, courier, etc.): _	Delivered in person			
	M	ETEOROLOGICAL CO	ONDITIONS FOR SAMPLING DA	Υ			
Ambient Temperature (°F): _	64 Low	74 High	Sea Level Pressure (Inches)	30.08			
Average Wind: _	North-northeast Direction	11 Velocity (mph)	Average Humidity (%): _	67			
		ADDITI	ONAL DETAILS				
Other details for tenant space	(e.g. recent construction/rend	vation, cleaning activities, cl	hemical storage, slab/foundation cracks,	HVAC status etc.):			
<u>\$</u>	Sample was collected south o	f the dry cleaning plant near	the rear door.				
-							
Problems or inconsistancies e	ncountered during sampling:						
1	Not applicable						
-							
<sup>*</sup> include a site sketch on sepa	arate sheet noting sample loca	ations (with measurements),	chemical storage areas, former operation	ons areas, etc.			
Sample Number: _	SV-3		Analyses: _	VOCs by EPA Sample Metho	od TO-15		
SUMMA ID Number:	2469 (60268)		Requested Turnaround Time: _	1 Week TAT			
Regulator ID Number:	B-23		Sample Crew:	Joe Becker			



Project Name: _	Bright Cleaners - Franklin (	Centre	Project Number: _	PECO_2017-68	
Vapor Point Installation Date:	August 11, 2017		Project Address: _	7201 South 76th Street	
Sub-Slab Sample Date: _	August 14, 2017		-	Franklin, Wisconsin	
		SAMPLIN	IG INFORMATION		
Soil Gas Implant Purge Air: _	0.9 Stabilized PID Reading (PPM)	2 Volume (liters)	Sample Start Time: _	August 14, 2014 DATE	12:24 TIME
Leak Test Method: _	Shut-in Test Sample Train	Water Dam Soil Gas Implant	Sample End Time: _	August 14, 2014 DATE	12:54 TIME
Shut-in Test: _	-17 30	30 Test Duration (seconds)	Canister Vacuum: _	-28 1/2 Initial (Inches Hq)	-7 Final (Inches Hg)
Leak Test Notes:	No Loss Shut-in Test	No Loss Water Dam	Analysis Details: _	STAT Analysis Corporation  Laboratory	Chicago, IL Location
Sample Depth: _	< 1 Feet		Sample Delivery: _	August 13, 2017 DATE	13:30 TIME
Sample Container Details:		30 Flow Controler (minutes)	Delivery Method (FedEx, courier, etc.): _	Delivered in person	
		, ,			
	M	ETEOROLOGICAL CO	NDITIONS FOR SAMPLING DA	Y	
Ambient Temperature (°F): _	64 Low	78 High	Barometric Pressure / Humidity _	985.54 mBar	51 %
Average Wind: _	7 Velocity (mph)	South-southwest Direction	Precipitation (Inches): _	0.00 Day of Sampling	0.00 Previous 48 Hours
		ADDITI	ONAL DETAILS		
Other details for tenant space	(e.g. recent construction/reno		nemical storage, slab/foundation cracks,	HVAC status etc.):	
<u>:</u>	Sample was collected near the	front of the dry cleaner tena	ant space.		
<u>-</u>					
-					
Problems or inconsistancies e	encountered during sampling:				
-					
* Include a site sketch on sepa	arate sheet noting sample loca	tions (with measurements),	chemical storage areas, former operation	ons areas, etc.	
Sample Number:	SV-4		Analyses:	VOCs by EPA Sample Met	hod TO-15
SUMMA ID Number:	60256		Requested Turnaround Time: _	1 Week TAT	
Regulator ID Number:	7248443		Sample Crew: _	Joe Becker	

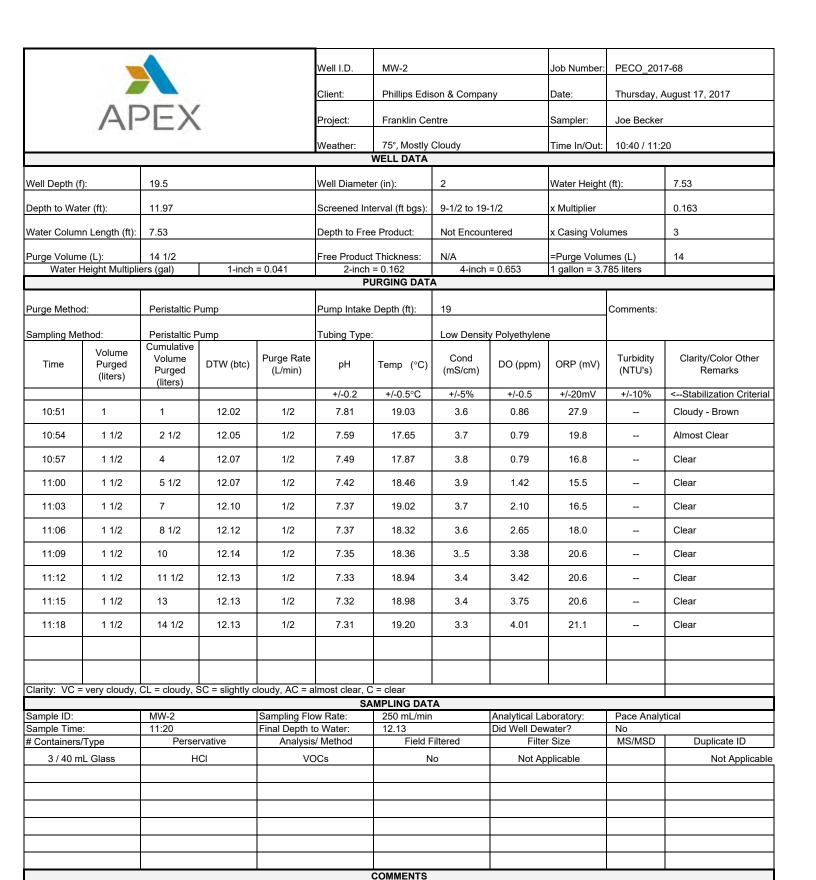


Project Name: _	Bright Cleaners - Franklin	Centre	Project Number: _	PECO_2017-68	
Vapor Point Installation Date:	August 11, 2017		Project Address: _	7201 South 76th Street	
Sub-Slab Sample Date: _	August 14, 2017		<u>-</u>	Franklin, Wisconsin	
		SAMPLIN	G INFORMATION		
Soil Gas Implant Purge Air: _	0.1 Stabilized PID Reading (PPM)	2 Volume (liters)	Sample Start Time: _	August 14, 2014 DATE	12:35 TIME
Leak Test Method: _	Shut-in Test Sample Train	Water Dam Soil Gas Implant	Sample End Time:	August 14, 2014 DATE	13:06 TIME
Shut-in Test:	-17 30	30 Test Duration (seconds)	Canister Vacuum: _	-27 Initial (Inches Hg)	-6 1/2 Final (Inches Hg)
Leak Test Notes:	No Loss Shut-in Test	No Loss Water Dam		STAT Analysis Corporation  Laboratory	Chicago, IL
	<1		Sample Delivery:	August 13, 2017	13:30
_	Feet		_	DATE	TIME
Sample Container Details:	6 Volume (liters)	30 Flow Controler (minutes)	Delivery Method (FedEx, courier, etc.): _	Delivered in person	
	M	ETEOROLOGICAL CO	NDITIONS FOR SAMPLING DA	V	
	IAI	LILOROLOGICAL CO	NOTIONS FOR SAMPLING DA	NI .	
Ambient Temperature (°F): _	64 Low	78 High	Barometric Pressure / Humidity _	985.54 mBar	51 %
Average Wind: _	7 Velocity (mph)	South-southwest Direction	Precipitation (Inches): _	0.00 Day of Sampling	0.00 Previous 48 Hours
		ADDITIO	ONAL DETAILS		
·		vation, cleaning activities, ch	nemical storage, slab/foundation cracks	,	
<u>.</u>	Sample was collected near the	e rear of the UPS tenant space	ce to the west of the dry cleaning tenan	t space.	
<del>-</del>					
Problems or inconsistancies e	encountered during sampling:				
-					
* !!!	4				
include a site sketch on sepa	arate sneet noting sample loca	iuons (with measurements),	chemical storage areas, former operation	uns areas, etc.	
Sample Number:	SV-5		Analyses: _	VOCs by EPA Sample Meti	hod TO-15
SUMMA ID Number:	60230		Requested Turnaround Time: _	1 Week TAT	
Regulator ID Number: _	A0171584-1		Sample Crew: _	Joe Becker	

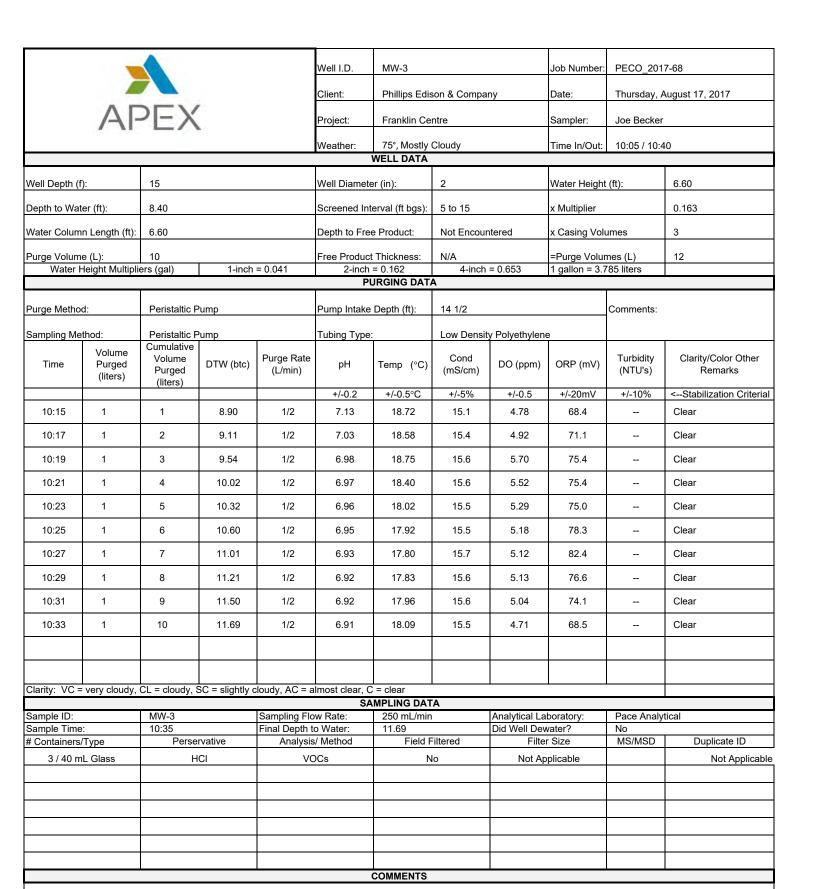


Project Name: _	Bright Cleaners - Franklin Ce	ntre	Project Number: _	PECO_2017-68	
Vapor Point Installation Date:	August 11, 2017		Project Address: _	7201 South 76th Street	
Sub-Slab Sample Date:	August 14, 2017		_	Franklin, Wisconsin	
		SAMPLIN	NG INFORMATION		
Soil Gas Implant Purge Air: _	0.0 Stabilized PID Reading (PPM)	2 Volume (liters)	Sample Start Time: _	August 14, 2014 DATE	12:30 TIME
Leak Test Method: _	Shut-in Test Sample Train	Water Dam Soil Gas Implant	Sample End Time: _	August 14, 2014 DATE	13:01 TIME
Shut-in Test: _	-13 30	30 Test Duration (seconds)	Canister Vacuum: _	-30 Initial (Inches Hq)	-7 1/2 Final (Inches Hg)
Leak Test Notes: _	No Loss Shut-in Test	No Loss Water Dam	Analysis Details: <u>S</u>	STAT Analysis Corporation  Laboratory	Chicago, IL Location
Sample Depth: _	< 1 Feet		Sample Delivery: _	August 13, 2017 DATE	13:30 TIME
Sample Container Details:	6 Volume (liters)	30 ow Controler (minutes)	Delivery Method (FedEx, courier, etc.): _	Delivered in person	
	MET	EOROLOGICAL CO	ONDITIONS FOR SAMPLING DA	Υ	
Ambient Temperature (°F): _	64 Low	78 High	Barometric Pressure / Humidity _	985.54 mBar	51 %
Average Wind: _	7 Velocity (mph)	South-southwest Direction	Precipitation (Inches): _	0.00 Day of Sampling	0.00 Previous 48 Hours
		ADDITI	IONAL DETAILS		
·		•	hemical storage, slab/foundation cracks, it space to the east of the dry cleaning te	,	
Problems or inconsistancies e	encountered during sampling:				
-					
* Include a site sketch on sepa	arate sheet noting sample location	ns (with measurements),	chemical storage areas, former operation	ons areas, etc.	
Sample Number: _	SV-6		Analyses: _	VOCs by EPA Sample Meth	nod TO-15
SUMMA ID Number:	60223		Requested Turnaround Time: _	1 Week TAT	
Regulator ID Number:	A01158-4		Sample Crew:	Joe Becker	

					Well I.D.	MW-1			Job Number:	PECO_2017-68	
	_				Client:	Phillips Edis	on & Compar	ny	Date:	Thursday, A	August 17, 2017
	AF	PEX			Project:	Franklin Centre			Sampler:	Joe Becker	
	7 11				Weather:	75°, Mostly (	Cloudy		Time In/Out:	11:25 / 12:	10
						WELL DATA	,				
Well Depth (1	·):	19.5			Well Diamete	er (in):	2		Water Height (ft):		7.62
Depth to Wat	er (ft):	11.88			Screened Int	erval (ft bgs):	9-1/2 to 19-	1/2	x Multiplier		0.163
Water Colum	n Length (ft):	7.62			Depth to Free	e Product:	Not Encoun	itered	x Casing Vol	umes	3
Purge Volum	e (L):	14 1/2			Free Product	Thickness:	N/A		=Purge Volur	mes (L)	14
			1-inch	= 0.041		= 0.162		= 0.653	1 gallon = 3.7		
		ı			Pl	JRGING DATA	4			ı	
Purge Metho	d:	Peristaltic F	ump		Pump Intake	Depth (ft):	19			Comments:	
Sampling Me	thod:	Peristaltic F	Pump		Tubing Type:		Low Density	y Polyethylene	Э		
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH Temp (°C)		Cond (mS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTU's)	Clarity/Color Other Remarks
		()			+/-0.2	+/-0.5°C	+/-5%	+/-0.5	+/-20mV	+/-10%	<stabilization crite<="" td=""></stabilization>
11:34	1	1	12.42	1/2	7.14	18.30	5.7	0.31	-59.7		Clear
11:37	1 1/2	2 1/2	13.07	1/2	6.89 17.20		5.9	0.30	-46.7		Clear
11:40	1 1/2	4	13.41	1/2	6.83	17.20	5.9	0.48	-40.1		Clear
11:43	1 1/2	5 1/2	13.79	1/2	6.81	16.89	6.0	0.56	-40.6		Clear
11:46	1 1/2	7	13.92	1/2	6.81	16.91	6.0	0.63	-41.2		Clear
11:49	1 1/2	8 1/2	14.37	1/2	6.80	16.80	5.9	0.76	-41.3		Clear
11:52	1 1/2	10	14.70	1/2	6.81	16.93	5.9	0.75	-18.4		Clear
11:55	1 1/2	11 1/2	14.85	1/2	6.81	16.84	5.8	0.75	-41.1		Clear
11:58	1 1/2	13	15.02	1/2	6.81	17.06	5.8	0.78	-42.8		Clear
12:01	1 1/2	14 1/2	15.15	1/2	6.82	17.20	5.7	0.80	-42.2		Clear
Clarity: VC =	very cloudy,	CL = cloudy, S	SC = slightly cl	oudy, AC = a		= clear MPLING DAT	Δ				
Sample ID:		MW-1		Sampling Flo	w Rate:	250 mL/min		Analytical La		Pace Analy	tical
Sample Time		12:05	rvative	Final Depth to		15.15	iltered	Did Well Dev	vater? r Size	No MS/MSD	Duplicate ID
Containers, 3 / 40 m			rvative Cl		/ Method Cs	Field F			r Size oplicable	MS/MSD	Duplicate ID  Duplicate
						COMMENTS					



Page 2 of 3



### Appendix C

Boring Logs, Well Construction Diagrams & Wisconsin DNR Well and Borehole Forms





## SOIL BORING LOG / TEMPORARY MONITORING WELL CONSTRUCTION DIAGRAM

			(847) 956-8589
PROJECT NAM PROJECT NUMBI PROJECT LOCATIO	<b>R</b> : PECO_2016-78	eet	SOIL BORING NUMBER: TW-1 LOGGED BY: Joe Becker DATE: August 31, 2016
	R: Environmental Soil Probin		TOTAL BORING DEPTH: 20 Feet
	R: Derek E: Track-mounted Geoprobe		BOREHOLE DIAMETER: 2 Inches - Rod WELL DEPTH: 19 Feet
SAMPLING METHO	D: Dual-core		WELL DIAMETER: 1 Inch
GROUND ELEV (F TOP OF CASING ELEV (F	•		DEPTH TO WATER: 16 Feet (Observed in sample) 13.4 Feet (Prior to sampling on 8/31/16)
			13.4 Teet (Filot to sampling of 6/31/10)
DEPTH IN FEET RECOVERY (FT) PID (ppm) LABORATORY LD	WELL	9 H	
DEPTH IN FEET RECOVERY (FT) PID (ppm) ABORATORY I.E	WELL STRUC	GRAPHIC LOG WATER LEVEL	SAMPLE DESCRIPTION
EPTH SON	W TSNG	RAP	
	8	8 ا	
	11111		3" Asphalt, 4" Aggregate
1 —	1" PVC well casing		(CL) Silty clay with gravel, brown, dry, no odor
2 — < 5			
3 1/2			
3 —			
- < 5			(SC) Clayey sand, brown, dry, no odor
5			(ML) Clayey silt, brown, dry, no odor
- < 5			
7 -4 1/2			
8 — 4 1/2			
			(GP) 1" Gravel, grayish brown, dry, no odor
9.9			(CL) Silty clay, grayish brown, dry, no odor
10 ————————————————————————————————————	0.01" PVC well		
	screen		
9.2			Slightly damp
12 —			
13 — 5		13.4'	
12.6 TW-1	@	▼	(ML) Clausy silt growing brown down no ada-
14 —			(ML) Clayey silt, grayish brown, damp, no odor
15			
16 —			Saturated
17 —			
- 5			
18 —	PVC cap at bottom of well		
19 —	casing		Domp
20			Damp
			Bottom of Boring at 20 feet



## SOIL BORING LOG / TEMPORARY MONITORING WELL CONSTRUCTION DIAGRAM

								(847) 956-8589
	PROJECT NAME: Bright Cleaners PROJECT NUMBER: PECO_2016-78 PROJECT LOCATION: 7249 South 76th Street Franklin, Wisconsin  DRILLING CONTRACTOR: Environmental Soil Probing							SOIL BORING NUMBER: TW-2 LOGGED BY: Joe Becker DATE: August 31, 2016
D	RILLIN	IG CON	TRACTOR: DRILLER:		ımental Soil Probii	ng		TOTAL BORING DEPTH: 20 Feet BOREHOLE DIAMETER: 2 Inches - Rod
	SAI		RIG TYPE: METHOD:		mounted Geoprobe	Э		WELL DEPTH: 17.5 Feet WELL DIAMETER: 1 Inch
	G	ROUND	ELEV (FT):	-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			DEPTH TO WATER: NE Feet (Observed in sample)
TO	OP OF (	CASING	ELEV (FT):	-		ī		
DEPTH IN FEET	RECOVERY (FT)	PID (ppm)	LABORATORY I.D		WELL CONSTRUCTION	GRAPHIC LOG	WATER LEVEL	SAMPLE DESCRIPTION
					411 50 40 11			3" Asphalt, 4" Aggregate
1 — 2 3 — 2 4 — 5 — 5	2	< 5			1" PVC well casing			(ML) Clayey silt with crushed stone, brown, dry, no odor
6 —	3	< 5						Damp, light brown  (SC) Clayey sand, light brown, damp, no odor
8 —		. =						(GW) 1" Gravel, grayish brown, dry, no odor
9		< 5						(ML) Clayey silt, grayish brown, dry, no odor
10		< 5	TW-2 @ 11'		0.01" PVC well screen			(SM) Silty sand, brown, damp, no odor
12 —								(ML) Clayey silt, grayish brown, slightly damp, no odor
13 —	3 1/2	< 5						(CL) Silty clay, grayish brown, slightly damp, no odor (ML) Clayey silt, grayish brown, dry, no odor
15 —								
17 —	4	< 5			PVC cap at bottom of well casing			
19 —								
20 —			<u> </u>		<u> </u>			Bottom of Boring at 20 feet
								-

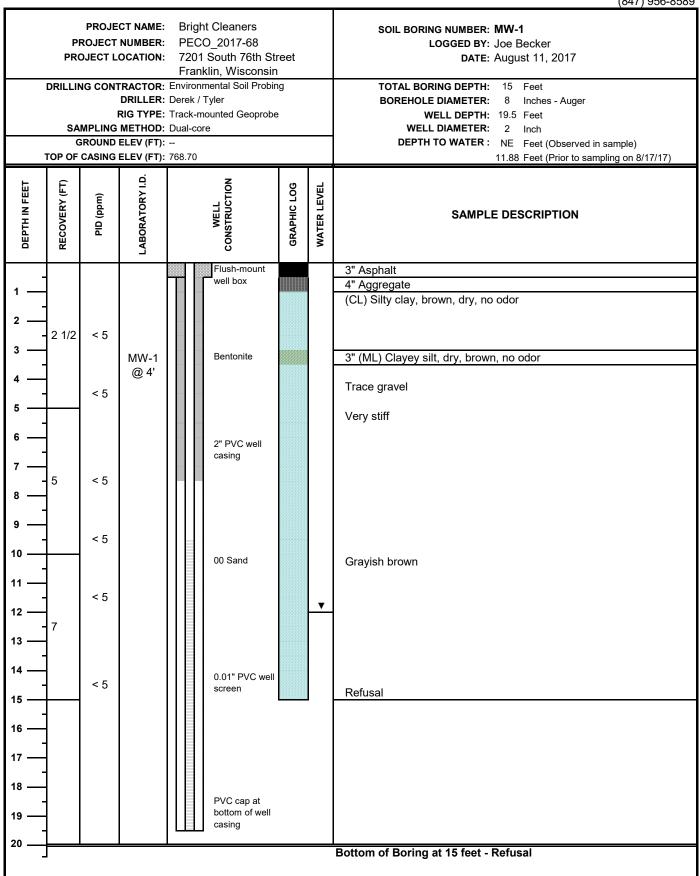


## SOIL BORING LOG / TEMPORARY MONITORING WELL CONSTRUCTION DIAGRAM

								(847) 956-8589
		ROJECT	CT NAME: NUMBER: OCATION:	PE0 724	ght Cleaners CO_2016-78 9 South 76th St nklin, Wisconsin			SOIL BORING NUMBER: TW-3  LOGGED BY: Joe Becker  DATE: August 31, 2016
	SA	MPLING	DRILLER:	Derek Track- Dual-c	nmental Soil Probi mounted Geoprob ore		TOTAL BORING DEPTH: 20 Feet  BOREHOLE DIAMETER: 2 Inches - Rod  WELL DEPTH: 20 Feet  WELL DIAMETER: 1 Inch  DEPTH TO WATER: 12 Feet (Observed in sample)	
	TOP OF	CASING	ELEV (FT):	-				18.5 Feet (Prior to sampling on 8/31/16)
DEPTH IN FEET	RECOVERY (FT)	PID (ppm)	LABORATORY I.D.		WELL	GRAPHIC LOG	WATER LEVEL	SAMPLE DESCRIPTION
_					1" PVC well			Topsoil
2 — 3 —	4				casing			Aggregate (CL) Silty clay with gravel, brown, slightly damp, no odor
4 —		< 5						(CL) Sandy clay, tan, dry, no odor
5 — 6 — 7 —								(ML) Clayey silt, light brown, slightly damp, no odor
8 —	3 1/2	< 5						(SM) 1" Silty sand, light brown, slightly damp, no odor (ML) Clayey silt, brown, slightly damp, no odor
10 — 11 —		< 5 < 5	TW-3 @		0.01" PVC well screen			
12 — 13 —	3		12'					Grayish brown Saturated
14 — 15 — 16 —								
17 —	3						18.5'	(CL) Silty clay, grayish brown, damp, no odor
19 —					PVC cap at bottom of well casing		▼	
-	J							Bottom of Boring at 20 feet



## SOIL BORING LOG / PERMANENT MONITORING WELL CONSTRUCTION DIAGRAM





## SOIL BORING LOG / PERMANENT MONITORING WELL CONSTRUCTION DIAGRAM

					(847) 956-8589
PROJEC	ECT NAME: F NUMBER: LOCATION:	PECO_2017-68		SOIL BORING NUMBER: MW-2 LOGGED BY: Joe Becker DATE: August 11, 2017	
SAMPLING	DRILLER: RIG TYPE: METHOD: DELEV (FT):			TOTAL BORING DEPTH: 18 Feet  BOREHOLE DIAMETER: 8 Inches - Auger  WELL DEPTH: 19.5 Feet  WELL DIAMETER: 2 Inch  DEPTH TO WATER: NE Feet (Observed in sample)  11.97 Feet (Prior to sampling on 8/17/17)	
DEPTH IN FEET RECOVERY (FT)	LABORATORY I.D.	WELL	GRAPHIC LOG	WATER LEVEL	SAMPLE DESCRIPTION
1 — 2 — 3 — 4 —		Flush-mount well box  Bentonite		-	3" Asphalt 4" Aggregate (SW) Clayey gravelly sand, tan, dry, no odor
5 - < 5 6 7 - 2 < 5	MW-2 @ 6'	2" PVC well casing			(CL) Gravelly silty clay, brown, damp, soft, no odor
9 — <5 10 — <5 11 — <5		00 Sand		▼	1' (SW) Clayey gravelly sand, grayish brown, damp, no odor (ML) Silty clay, trace gravel, gray/brown, slightly damp, no odor
13 — 3 14 — < 5 15 — 5 < 5		0.01" PVC well screen			(CL) Silty clay, trace gravel, grayish brown, damp, very stiff, no odor
18 — 19 — 20 — 20		PVC cap at bottom of well casing		_	Refusal  Bottom of Boring at 18 feet - Refusal



## SOIL BORING LOG / PERMANENT MONITORING WELL CONSTRUCTION DIAGRAM

								(847) 956-8589
	PR(	ROJECT DJECT LO NG CONT	OCATION:  TRACTOR:  DRILLER:  RIG TYPE:	PEC 7201 Fran Environ Derek / Track-r	mounted Geoprobe	ıg	SOIL BORING NUMBER: MW-3 LOGGED BY: Joe Becker DATE: August 11, 2017  TOTAL BORING DEPTH: 12 Feet BOREHOLE DIAMETER: 8 Inches - Auger WELL DEPTH: 15 Feet	
	G	ROUND	METHOD: ELEV (FT): ELEV (FT):	-	ore			WELL DIAMETER: 2 Inch  DEPTH TO WATER: 10 Feet (Observed in sample)  8.40 Feet (Prior to sampling on 8/17/17)
DEPTH IN FEET	RECOVERY (FT)	PID (ppm)	LABORATORY I.D.		WELL	GRAPHIC LOG	WATER LEVEL	SAMPLE DESCRIPTION
_					Flush-mount			5" Asphalt
1 —					well box			8" Aggregate
2 —	2	< 5			Bentonite			(CL) Silty clay, brown, slightly damp, no odor
4 —		< 5			2" PVC well casing			Limestone fragements
6 —		< 5			00 Sand			1' Trace gravel, very damp
8 —	5	< 5					•	(ML) Clayey silt, brown, very damp, no odor
9 —	2				0.01" PVC well screen			Saturated
11 —	3							Grayish brown, refusal
13 —								
14 —					PVC cap at bottom of well casing			
-								Bottom of Boring at 12 feet - Refusal



#### **SOIL BORING LOG**

							(047) 000 0000
		ROJECT	CT NAME: NUMBER: OCATION:			SOIL BORING NUMBER: B-1 LOGGED BY: Joe Becker DATE: August 11, 2017	
	SA	MPLING GROUND	DRILLER:	Jack Hammer Dual-core	ig		TOTAL BORING DEPTH: 4.5 Feet  BOREHOLE DIAMETER: 2 Inches - Rod  WELL DEPTH: NA Feet  WELL DIAMETER: NA Inch  DEPTH TO WATER: NE Feet (Observed in sample)
DEPTH IN FEET	RECOVERY (FT)	PID (ppm)	LABORATORY I.D.	WELL	GRAPHIC LOG	WATER LEVEL	SAMPLE DESCRIPTION
1 — 2 — 3 — 4 —	4	< 5 < 5	B-1 @ 2'				5" Concrete (CL) Silty clay, brown, slightly damp, no odor
							Bottom of Boring at 4-1/2 feet - Refusal



#### **SOIL BORING LOG KEY**



ility/Proje				License/Per	mit/Mo	nitorir	g Num	ber	Borin	Page g Num	ber	_ of _		
ring Drille	d By:	Name	e of crew chief (first, last) and Firm	Date Drilling Started Date Drilling Completed Drilling Method										
rst Name:	sp le		Last Name: Stephenson	$\frac{OB_{131}}{mm}$	120				7 0 y y			-	Push	
Unique W			DNR Well ID No. Well Name	Final Static	Water	Level	Surfac	1000	ation			Borehole Diameter		
al Grid O	rigin (	Zi (est	timated:   or Boring Location	Lat 42					_Feet			i	nches	
= 1/4 of	9 5			Long 88	00'	40"	7	OF	eet 🖸	S_	19	Feet	O E W	
ility ID 419 28	940	,	County	County Code			City/ or		ge					
ample									Soil	Prope	rties			
Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic	Well Diagram	PID/FID	Compressive Strength	Moisture	Liquid Limit	Plasticity Index	P 200	RQD/ Comments	
		Э.	Asphalt/Aggregate					0		Alexan Ar				
			silty clay with growel	4			45							
3/2	-													
			clusely sunt	SC			23							
		5'	clarely sund Clargey silt	ML										
							45							
412														
			s: Ity clay	CL			9.9							
		101					9.2							
5							12.6							
			Clargey silt	ML			12.6		7-01					
		15'	N. P.											
							aa		Satur	1-01				
5							- 34			.,00				
		20"												

cilit	y/Proje				License/	Pern	nit/Mo	nitorin	g Num	ber	Boring	Page Numl	er	_of _	
_	C	sris		Clenne 15	D . D .	***	0.		D . D		_	- 1	J-2	11	
rst N	ame: D	a By:	Name	of crew chief (first, last) and Firm Last Name: Stephenson	Date Dri				Date D				CAN WELLIAM	Contract Sections	nod Push
rm: Ur	ique W	Alleria Committee	0.	DNR Well ID No.   Well Name   The - 2	Final Sta	tic V	Vater I Feet N	Level ISL	Surfac	Eleva C9	ation Feet l	MSL	Borehole Diameter		
ite F	lane _	642	338	imated: ) or Boring Location N, 2 33 125 E	Lat	42	° 74'	48"	Local	Grid L	ocatio	n	11	-	D E
cilit	1/4 of y ID	280	1/4 of	Section 9, T 5 N, R 21 5  County	County Cod	le	Civil '	Town/	City/ or	Villag		<u>S</u> _		_ Feet	e w
am	ple										Soil I	Prope	rties		
and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	0	OSCS	Graphic	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				Asphalt/Aggregate clayeys: Itu/crushab stone		on L									
	Z			clayey sitted crushes some		26			45						
			-1												
			5'		4	L			45						
	3			Clayer Sunt		~L					dung				
	11		1-7						15						
0	_		101	as the cond	5	M			, _						
	34			Clayey Silt	1	AL CL			45						
			1 21	silty sunt clayer silt silty clay clayer silt		nL			42						
	-		(50						10						
	4								45						
									45						
	_		200												

State of Wisconsin	
Department of Natural Resources	

					-1	-	1.5-					Page	1	_ of _	1
Facilit	y/Proje	ct Na	me (1	enner 5	Licer	se/Pern	nit/Mo	nitorin	g Num	ber	Boring	Numb	er -3		
Boring	Drille	d By:	Name	of crew chief (first, last) and Firm	Date Drilling Started Date Drilling Completed Drilling Method										
	ame: D		SP	Last Name: Stephenson	08	131 d	1 2 0	1 6	08	31	70	1 5	0	rout	Push
Firm: WI Ur	ique V	1000	N.	DNR Well ID No. Well Name	Final	Static \	Water I	Level	Surfac	e Elev	ation		Boreho	ole Di	ameter
	Grid O	rigin	(est	timated:   O or Boring Location		8.5	and the second		Local	769 Grid I			2	i	nches
State F	lane _	687	338	N,73 123 E		Lat 47	0 54	48"	4		eet 💆		17		ďΕ
Facilit	1/4 of .	NE	1/4 of	Section 9 , T 5 N, R 21 (2)	Lo County (	ng 88			City/ or			S	16	Feet	□ W
	1197	1891	10	Milmaukel	4	[	O. I.	ira.	رادان	^					
Sam			rface)								Soil	Prope	ties	_	
. 9	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For		S		_	0	Compressive Strength	<b>9</b>		<i>y</i> .		nts
Number and Type	ngth	W C	pth in	Each Major Unit		SC	Graphic	Well Diagram	PID/FID	npre	Moisture	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
Z a	a §	Big	ದಿಕೆ			D	Grap	3 2	Ы	Str	žů	בני	Pla	Δ,	≅3
				Topsoi / Aggregate											
- 4				silfy clay w/ gravel		CL									
16	4					1			45						
				Sandy Ilay		CL			63						
			5	Sandy clay Clayer 5: It I'silty sand		ML			-						
				C 0= 40 1 2					45		Lua				
	31/2			1'silty sand		5m					000				
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orin	g Drille	d By:	Name	of crew chief (first, last) and Firm Last Name: Stepherser		Drilling				ing Completed Drilling Method						
Firm:	ES	7				11 t				$\frac{1}{d}\frac{1}{d}$		O 17 y Direct Pu				
	nique V			DNR Well ID No. Well Name	Final	Static 1	Water Feet N	Level ASL	Surfac	e Elev	ation Feet	MSL	Boreh	ANK.	ameter nches	
ocal ate I	Grid O	rigin 68	2 (esti	mated: D) or Boring Location D		Lat 42	0 54	48.94		Grid L	ocatio	n				
NE			1/4 of 5	Section 9 T 5 N. R 21	E Lo	ng <u>89</u>			6		eet 🖪	S_	15	Feet	U W	
Z	1172	19 9	40	County	County (	Lode	Civil		City/o		ge					
Sam		69	et urface)	Soil/Rock Description								Prope	rties			
and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	And Geologic Origin For Each Major Unit		uscs	Graphic	Well Diagram	PID/FID	Compressive Strength	Moisture	Liquid Limit	Plasticity Index	P 200	RQD/ Comments	
	2/2			Asphalt/Aggregate silty (lay		LL			45	J						
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		ect Na	i h	(1000015	ense/Peri	nit/Mo	nitori	ng Nun	nber	Borin	Page g Num		_ of _			
oring First N	Drille	d By:	Name	of crew chief (first, last) and Firm Dat	e Drilling		Completed Drilling Method									
irm:	ique V	51		m	SILL m d d					/ Z 0 y	$\frac{1}{y}\frac{f}{y}$					
			_	Mw. Z	al Static	Feet N	ISL		769	Feet	MSL	Boreh		ameter nches		
				imated: O or Boring Location N. 273 123 E  Section 7, T 5 N, R 21 E	Lat 47	054	48"	Local	gna L	eet	n I N	49		OF		
cilit	y ID (92				y Code	Civil	Town/	City/o	r Villa	ge	rs _		_ Feet	W		
am	ple 왕 (i		f. rrface)	Soil/Rode Description							Prope	rties				
and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	uscs	Graphic	Well Diagram	PID/FID	Compressive Strength	Moisture	Liquid Limit	Plasticity Index	P 200	RQD/ Comments		
	21/2			Asphalt / Aggregate Clayer gravelly sand	500			45								
			5"	Cornelly silty clay	4			45		dunp						
1	Z							45								
			2 _1					45								
	3		10'	Sifty clay, trace grave	ML			45								
			15"					45								
	3			filty clay , track grave !	CL			45								
			20'	Refusal												

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acilit	y/Proje	ct Na	me / La	nner3	Licer	License/Permit/Monitoring Number Boring Number											
Boring	Drille	d By:	Name	of crew chief (first, last) and Firm	Date Drilling Started Date Drilling Completed Drilling Method												
	First Name: Deret Last Name: Stephenson						1 2 0 y y	17	08		ZO	17 ×	Di	cct	Push		
Firm: VI Ur	ique V			DNR Well ID No. Well Name	Final	Static V	Water	Level	Surfac		ation		Borehole Diameter				
ocal	Grid O	rigin	esti	mated:   or Boring Location	$\overline{}$	at 42	_		Local					i	nches		
		and the same of	1/4 of S			_at <u>= 6</u> ng <u>86</u>	00'	40"	6°	l E	eet 🗆	N	3		E		
acilit	v ID			County	County C	ode	Civil	Town/	City/ or	Villa		3 _		raci	W L		
Sam	9 28	441		milwaukele				fra	261	in	Soil I	Prope	rtioc	_			
Sall	왕 (ii	ts	surface	Soil/Rock Description						υ		Tope	ues				
уре	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	And Geologic Origin For Each Major Unit		53	.0	am	QI.	Compressive Strength	ure	-	ity		RQD/ Comments		
Number and Type	Lecov	3low	Selow Below			USC	Graphic	Well	PID/FID	omp	Moisture Content	Liquid Limit	Plasticity Index	P 200	SOD I		
00	- E	htt	20	Asphalt/Asgresate			0 1			Oo	20			, juint;			
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Facili	BAC	kt Na	Clear	neis	Licen	se/Peri	mit/Mo	onitorin	g Num	ber	Boring	Page Num		_ of _	
First I	g Drille	ere le	Name	of crew chief (first, last) and Firm Last Name: Stephenson	08 m m	Drilling	1 2 0 y	$\frac{1}{y}\frac{3}{y}$	0 8 m m	d d	1 20 y	oleted	Drillin	200	Push
	nique V			DNR Well ID No.   Well Name   NA   Wall Name   NA   Wall Name   NA   NA   NA   NA   NA   NA   NA   N	_	Static	Feet N	ISL	Surfac	769	_Feet l	MSL	Boreho	ole Di	ameter nches
Pacilii Facilii	1/4 of	NE	1/4 of S	N, 273 23 E Section 1, T 5 N, R 21 E   County		ng88	00	46" 40" Town/6	S	F	eet 🖪	1.4	0	Fee	E W
Sarr	fig 2	289		Milwadeee	4							Prope	rties		
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit		uscs	Graphic	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
NR.	4'			Concrete 5:14y llay		در			25		Slight				
			4	fefusa 1					45						
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Facility .	Name	110	F	acili	y ID Number	Licens	e, Perm	it or Monitorin	g No. Date	- 1	2017	Comple	ted By (Name a	nd Firm)	-			1 1	,	
WI	ight	(ka)	ners	Dir.	1928940	Wall	Casing	Eleva			7017	10	e Becker	Ape	x (0 h	phony	25 1			-
Unique Well No	Well Name	DNR Well ID Number	Well Location		Date Established		Type	Ton of		Refer MSL (√)	Site Datum	Screen Top	Initial Groundwater	Well Depth	Screen Length					Distance to Waste
	Mw-1		68	V	8-11-17	Z	ρ	768.70	769.00			91/2	11.88	191/2	lo'	11/100	A	1	D	4) 7 '
	MW-Z		49	1	8-11-17	Z	P	768.95	769.25	/		91/2	11.97	191/2	10'	11/20	A	1	D	38'
	MW.3		69	V	8-11-17	2	P	769.31	769.61	/		5 '	8.40'	15	10'	11/20	A	1	U	15°
												ii								
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				1																
Sta	Coordina  Ate Plane C  Northe  Centra  Southe	cordinate	Local Grid System	La	rid Origin Locati .t. <u>42° 54</u> .Planc <u>682</u>	. 41	1.54 "	Long. 88	. 0 . 40	),15 C/N Z	"or	emarks:								

Describe    Describe   Tremie   Describe   Describe   Tremie   Describe   Describe   Tremie   Describe   Describe	G. Filter pack, top  ft. MSL or  7/2 ft.  b. Volume added  8. Filter pack material: Manufacturer, product name & mesh s  a. 155 100  b. Volume added 73.9 ft 3  9. Well casing: Flush threaded PVC schedule 40 92  Flush threaded PVC schedule 80 12  Flush threaded PVC schedule 80 12  Other 10. Screen material:  8. Filter pack material: Manufacturer, product name & mesh s  a. 155 100  b. Volume added 73.9 ft 3  9. Well casing: Flush threaded PVC schedule 40 92  Flush threaded PVC schedule 80 12  Other 10. Screen material:  a. Screen type: Factory cut 10. 10. Screen material:  Continuous slot 10. Continuous slot 10. Continuous slot 10. Continuous slot 10. Screen type: Factory cut 10. Screen type: Continuous slot 10. Screen	5. Drilling additives used?	es No	<b>***</b> *** ***		Bentonite-cement gro	
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	G. Filter pack, top  ft. MSL or  7/2 ft.  b. Volume added  8. Filter pack material: Manufacturer, product name & mesh s  a. 155 100  b. Volume added 73.9 ft 3  9. Well casing: Flush threaded PVC schedule 40 92  Flush threaded PVC schedule 80 12  Flush threaded PVC schedule 80 12  Other 10. Screen material:  8. Filter pack material: Manufacturer, product name & mesh s  a. 155 100  b. Volume added 73.9 ft 3  9. Well casing: Flush threaded PVC schedule 40 92  Flush threaded PVC schedule 80 12  Other 10. Screen material:  a. Screen type: Factory cut 10. 10. Screen material:  Continuous slot 10. Continuous slot 10. Continuous slot 10. Continuous slot 10. Screen type: Factory cut 10. Screen type: Continuous slot 10. Screen	b. Drilling additives used?	res M No			olume added for any of the above	
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	G. Filter pack, top  ft. MSL or  7/2 ft.  b. Volume added  8. Filter pack material: Manufacturer, product name & mesh s  a. 155 100  b. Volume added 73.9 ft 3  9. Well casing: Flush threaded PVC schedule 40 92  Flush threaded PVC schedule 80 12  Flush threaded PVC schedule 80 12  Other 10. Screen material:  8. Filter pack material: Manufacturer, product name & mesh s  a. 155 100  b. Volume added 73.9 ft 3  9. Well casing: Flush threaded PVC schedule 40 92  Flush threaded PVC schedule 80 12  Other 10. Screen material:  a. Screen type: Factory cut 10. 10. Screen material:  Continuous slot 10. Continuous slot 10. Continuous slot 10. Continuous slot 10. Screen type: Factory cut 10. Screen type: Continuous slot 10. Screen				Alteria gray and a second seco		
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	G. Filter pack, top  ft. MSL or  1/2 ft.  b. Volume added  8. Filter pack material: Manufacturer, product name & mesh s  a. 155 100  b. Volume added 3. 9 ft 3  9. Well casing: Flush threaded PVC schedule 40 92  Flush threaded PVC schedule 80 2	Describe		1 I	f. How installed:		- Table 1
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	a. b. Volume added	- ALLIAN CHARLES	Total (No.			Tremie pumpe	d D
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	a. b. Volume added	7. Source of water (attach analysis, if requ	ired):				
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	a. b. Volume added			6	5. Bentonite seal:		
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	a. b. Volume added			· ·			
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	a. Borehole, bottom  ft. MSL or 19/2 ft.  ft. MSL or 19/2 ft.  a. b. Volume added 6.  8. Filter pack material: Manufacturer, product name & mesh s  a. 15 100  b. Volume added 73.9 ft.  9. Well casing: Flush threaded PVC schedule 40 ft.  Filter pack, bottom ft. MSL or 19/2 ft.  Continuous slot 0  Continuous slot 0  Continuous slot 0  M. O.D. well casing 2.4 in.  A. Molume added 73.9 ft.  9. Well casing: Flush threaded PVC schedule 40 ft.  10. Screen material: 6. Screen type: Factory cut 10. Screen material: 6. Screen type: 6. Slot size: 7. Slo	D	10		b. Ш1/4 m. Ш3/8	The second secon	
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	a. b. Volume added	Bentonite seal, top ft. MSI	Lorft.		C	Othe	r 🗆 🖁
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	a. b. Volume added	Bellomic scar, up			C.		
Filter pack, top  ft. MSL or 7/2 ft.  b. Volume added 6  8. Filter pack material: Manufacturer, product name & mesh size a 15 100  b. Volume added 7. 9 ft.  Well bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  Borehole, diameter  6 in.  Other 6  b. Manufacturer 6  Continuous slot 6  Continuous slot 6  Continuous slot 6  Borehole, diameter 7  Continuous slot 8  Continuous slot 9  Co	a. Borehole, bottom  ft. MSL or 19/2 ft.  ft. MSL or 19/2 ft.  a. b. Volume added 6.  8. Filter pack material: Manufacturer, product name & mesh s  a. 15 100  b. Volume added 73.9 ft.  9. Well casing: Flush threaded PVC schedule 40 ft.  Filter pack, bottom ft. MSL or 19/2 ft.  Continuous slot 0  Continuous slot 0  Continuous slot 0  M. O.D. well casing 2.4 in.  A. Molume added 73.9 ft.  9. Well casing: Flush threaded PVC schedule 40 ft.  10. Screen material: 6. Screen type: Factory cut 10. Screen material: 6. Screen type: 6. Slot size: 7. Slo	\ /		M M / 7	I Fine and materials	Manufactures andust name &	manh ni
A. Borehole, bottom ft. MSL or 19/2 ft. Screen type:  Borehole, diameter fin.  Borehole, diameter fin.  Borehole, diameter fin.  Continuous slot fin.  Continuous slot fin.  Borehole, diameter fin.  Continuous slot fin.	a. b. Volume added	Fine sand ton ft MSI	or As	网 网 / 7	/. Fine sand moterial:	Manufacturer, product name &	mesh si
Screen joint, top	8. Filter pack material: Manufacturer, product name & mesh s  a. 15 100  b. Volume added 3.9 ft 3  b. Volume added 9VC schedule 40 9  Flush threaded PVC schedule 80 0  Flush threaded PVC schedule 80 0  Continuous slot 0  Borehole, diameter - 8 in.  M. O.D. well casing - 2 1 in.  8. Filter pack material: Manufacturer, product name & mesh s  a. 15 100  b. Volume added 3.9 ft 3  Flush threaded PVC schedule 80 0  Continuous slot 0  Continuous slot 0  Continuous slot 0  Continuous slot 0  Slot size: 0.01  A. Slotted length: 9  M. O.D. well casing - 2 1 in.	Fine cand, top ft. MSI	Lorft.	· / 図 図	. Fine sand moterial:	Manufacturer, product name ac	. mesn si
Screen joint, top	8. Filter pack material: Manufacturer, product name & mesh s  a. 15 100  b. Volume added 3.9 ft 3  b. Volume added 9VC schedule 40 9  Flush threaded PVC schedule 80 0  Flush threaded PVC schedule 80 0  Continuous slot 0  Borehole, diameter - 8 in.  M. O.D. well casing - 2 1 in.  8. Filter pack material: Manufacturer, product name & mesh s  a. 15 100  b. Volume added 3.9 ft 3  Flush threaded PVC schedule 80 0  Continuous slot 0  Continuous slot 0  Continuous slot 0  Continuous slot 0  Slot size: 0.01  A. Slotted length: 9  M. O.D. well casing - 2 1 in.	rine tand, wp	ru				- 38
Screen joint, top	8. Filter pack material: Manufacturer, product name & mesh s  a. 15 100  b. Volume added 3.9 ft 3  b. Volume added 9VC schedule 40 9  Flush threaded PVC schedule 80 0  Flush threaded PVC schedule 80 0  Continuous slot 0  Borehole, diameter - 8 in.  M. O.D. well casing - 2.4 in.  Other 0  M. MSL or 19 2 ft.  8. Filter pack material: Manufacturer, product name & mesh s  a. 15 100  b. Volume added 3.9 ft 3  Flush threaded PVC schedule 80 0  Cotten 0  Factory cut 10 1  Continuous slot 0  Continuous slot 0  Continuous slot 0  Slotted length: 0.01	/	1	图 图 /	a.		
Screen joint, top	8. Filter pack material: Manufacturer, product name & mesh s  a.		-1		a		2
Screen joint, top	8. Filter pack material: Manufacturer, product name & mesh s  a.		7/10		a		344
Screen joint, top	8. Filter pack material: Manufacturer, product name & mesh s  a.	Elternol, ten ft MSI	1 3 As			63	364
Screen joint, top	8. Filter pack material: Manufacturer, product name & mesh s  a.	Filter pack, top ft, MSI	Lor 7/2 ft.		b. Volume added	63	
Screen joint, topft. MSL or	A. Screen joint, topft. MSL or	Filter pack, top ft. MSl	Lor 1/2 ft.	4周 四/	b. Volume added	n <sup>3</sup>	
Screen joint, topft. MSL or	A. Screen joint, topft. MSL or	Filter pack, top IL IVISI	LOILZIL				
Screen joint, topft. MSL or	I. Screen joint, topft. MSL or						
Screen joint, topft. MSL or	Screen joint, top			8	R. Filter pack material:	Manufacturer, product name &	mesh s
Well bottom	b. Volume added 3.7 ft   b. Volume added 3.7 ft   9. Well casing: Flush threaded PVC schedule 40 to   Flush threaded PVC schedule 80 to   Flush threaded PVC schedule 80 to   Flush threaded PVC schedule 80 to   The schole, bottom to   The schedule 40 to   The schedule 40 to   Flush threaded PVC schedule 80 to   The schedule 40 to   Flush threaded PVC schedule 80 to   The schedule 40 to   Flush threaded PVC schedule 80 to   The schedule 40 to   The schedule 40 to   Flush threaded PVC schedule 80 to   The schedule 40 to   Flush threaded PVC schedule 80 to   Flush thr		01	<b>√</b> ■ ■ /8			z mesh s
Well bottom	b. Volume added 3.7 ft   b. Volume added 3.7 ft   9. Well casing: Flush threaded PVC schedule 40 to   Flush threaded PVC schedule 80 to   Flush threaded PVC schedule 80 to   Flush threaded PVC schedule 80 to   The schole, bottom to   The schedule 40 to   The schedule 40 to   Flush threaded PVC schedule 80 to   The schedule 40 to   Flush threaded PVC schedule 80 to   The schedule 40 to   Flush threaded PVC schedule 80 to   The schedule 40 to   The schedule 40 to   Flush threaded PVC schedule 80 to   The schedule 40 to   Flush threaded PVC schedule 80 to   Flush thr	C t-i ft MCI	91/2 0	通問し。			-
Well bottom	b. Volume added 3.7 ft 3  9. Well bottom ft. MSL or 19/2 ft. 9. Well casing: Flush threaded PVC schedule 40 to 2  Flush threaded PVC schedule 80 to 2  Flush th	Screen joint, top ft. MSI	L or ft.		1153,10	20	**
Well bottom	Well bourom  ft. MSL or 19/2 ft.  Filter pack, bottom  ft. MSL or 19/2 ft.  Borehole, bottom  ft. MSL or 19/2 ft.  The strength of the strengt	Screen Joint, top It. 19151		1911	We		2
Well bottom	Well bottom ft. MSL or 19/2 ft.  Filter pack, bottom ft. MSL or 19/2 ft.  Borehole, bottom ft. MSL or 19/2 ft.  Borehole, diameter ft.  Borehole, diameter ft. MSL or	A STATE OF THE STA		The state of the s	h Volume added	3. 9 ft 3	det
Filter pack, bottomft. MSL or19\sqrt{2}ft. \\  Borehole, bottomft. MSL or19\sqrt{2}ft. \\  Borehole, bottomft. MSL or19\sqrt{2}ft. \\  Borehole, diameter\text{0} in. \\  Continuous slot0  b. Manufacturer	Filter pack, bottomft. MSL or19\sqrt{2}ft.		101				/
Filter pack, bottomft. MSL or19\sqrt{2}ft. \\  Borehole, bottomft. MSL or19\sqrt{2}ft. \\  Borehole, bottomft. MSL or19\sqrt{2}ft. \\  Borehole, diameter\text{0} in. \\  Continuous slot0  b. Manufacturer	Flush threaded PVC schedule 80	Well bottom ft. MSI	or   9 /2 ft.	Q	Well casing: Fr	lush threaded PVC schedule 46	) 19 2
Filter pack, bottomft. MSL or19\(^1_2\)ft.	Tilter pack, bottomft. MSL or19/2ft	Well politorii IC MOI	T T. T.				The second second
Filter pack, bottomft. MSL or19\(^1_2\)ft.	Filter pack, bottomft. MSL or19\frac{1}{2}ft. \\  Borehole, bottomft. MSL or19\frac{1}{2}ft. \\  Borehole, bottomft. MSL or19\frac{1}{2}ft. \\  Borehole, diameter				F	lush threaded PVC schedule 80	) [ 3
Borehole, bottom ft. MSL or19 ft a. Screen material: a. Screen type: Factory cut 1	Borehole, bottomft. MSL or14\frac{1}{2}ft.		.01.	「湯子	FI	iush unreaged PVC schedule 80	
Borehole, bottom ft. MSL or19 ft a. Screen material: a. Screen type: Factory cut 1	Borehole, bottomft. MSL or14\frac{1}{2}ft.	Eilter nealt bettem	or 19% -	イ国・ア			
Borehole, bottom ft. MSL or19 ft a. Screen material: a. Screen type: Factory cut 1 Continuous slot 0 Continuous slot	Borehole, bottom ft. MSL or19 ft.   Borehole, diameter 8 in.    10. Screen material:  a. Screen type: Factory cut 11 1  Continuous slot    Other    b. Manufacturer    c. Slot size:  d. Slotted length:    10. Screen material:  Continuous slot    Other    11. O.D. well casing 2 ft. MSL or 19 ft.    Continuous slot    Other    Other    12. Slot size:  d. Slotted length:    13. Screen material:  Continuous slot    Other	Filter pack, bottom ft. MSI	or   7/2 ft.			Othe	
Borehole, bottom ft. MSL or192ft. a. Screen type: Factory cut [1] 1  Continuous slot [2] 0  Borehole, diameter 8 in. Other [3]  L. O.D. well casing 2 in. 11, Backfill material (below filter pack): None [3] 14	Borehole, bottomft. MSL or19 th 10. Screen material: a. Screen type: Factory cut [1] 1 Continuous slot	Filler pack, bottom IL MSI	01 1 211.			Othe	r 🗀 🚆
Borehole, bottom ft. MSL or 172ft.  Borehole, diameter 8 in.  Continuous slot 0  Other   b. Manufacturer 6 or 5 e  c. Slot size:  d. Slotted length:  1. D. well casing 2 in.  1. Backfill material (below filter pack):  None 12	Borehole, bottom ft. MSL or142ft.  Borehole, diameter 8 in.  Description in.  Borehole, diameter 8 in.  Description in.  Borehole, diameter 8 in.  Description in.  Descri	time back commit ic Mil	I - LIL	- Desired to the second		Othe	( L
Borehole, bottom ft. MSL or 172ft.  Borehole, diameter 8 in.  Continuous slot 0  Other   b. Manufacturer 6 or 5 e  c. Slot size:  d. Slotted length:  1. D. well casing 2 in.  1. Backfill material (below filter pack):  None 12	Borehole, bottom ft. MSL or142ft.  Borehole, diameter 8 in.  Continuous slot Continuous					C	
Borehole, bottom ft. MSL or 172ft.  Borehole, diameter 8 in.  Continuous slot 0  Other   b. Manufacturer 6 or 5 e  c. Slot size:  d. Slotted length:  1. D. well casing 2 in.  1. Backfill material (below filter pack):  None 12	Borehole, bottom ft. MSL or142ft.  Borehole, diameter 8 in.  Description in.  Borehole, diameter 8 in.  Description in.  Borehole, diameter 8 in.  Description in.  Descri	•			2.5	C	90
Borehole, bottom ft. MSL or 172ft.  Borehole, diameter 8 in.  Continuous slot 0  Other   b. Manufacturer 6 or 5 e  c. Slot size:  d. Slotted length:  1. D. well casing 2 in.  1. Backfill material (below filter pack):  None 12	Borehole, bottom ft. MSL or142ft.  Borehole, diameter 8 in.  Continuous slot Continuous			1	Company managing	( )	20
Borehole, bottom ft. MSL or 172ft.  Borehole, diameter 8 in.  Continuous slot 0  Other   b. Manufacturer 6 or 5 e  c. Slot size:  d. Slotted length:  1. D. well casing 2 in.  1. Backfill material (below filter pack):  None 12	Borehole, bottom ft. MSL or142ft.  Borehole, diameter 8 in.  Description in.  Borehole, diameter 8 in.  Description in.  Borehole, diameter 8 in.  Description in.  Descri			100	Sorger marasials	San	25
Borehole, bottom ft. MSL or 172ft.  Borehole, diameter 8 in.  Continuous slot 0  Other   b. Manufacturer 6 or 5 e  c. Slot size:  d. Slotted length:  1. D. well casing 2 in.  1. Backfill material (below filter pack):  None 12	Borehole, bottom ft. MSL or142ft.  Borehole, diameter 8 in.  Description in.  Borehole, diameter 8 in.  Description in.  Borehole, diameter 8 in.  Description in.  Descri			10	Screen material	Samo	18
Borehole, bottom ft. MSL or 172ft.  Borehole, diameter 8 in.  Continuous slot 0  Other   b. Manufacturer 6 or 5e  c. Slot size:  d. Slotted length:  1. D. well casing 2 in.  1. Backfill material (below filter pack):  None 12	Borehole, bottom ft. MSL or142ft.  Borehole, diameter 8 in.  Description in.  Borehole, diameter 8 in.  Description in.  Borehole, diameter 8 in.  Description in.  Descri		Andrew .	10	). Screen material:	Samo	/6
Borehole, diameter 8 in. Other 8  i. O.D. well casing 2.4 in.	Borehole, diameter 8 in.    Continuous slot		101	10	J. Screen material:	same.	_ /8
Borehole, diameter 8 in. Other 8  i. O.D. well casing 2.4 in.	Borehole, diameter 8 in.    Continuous slot		1010	10			- /2
Borehole, diameter 8 in. Other 8  i. O.D. well casing 2.4 in.	Borehole, diameter 8 in.    Continuous slot	Rorahola hottom ft MSI	or 19'5ft			E. attanta	. 117
Borehole, diameter 8 in. Other 8  i. O.D. well casing 2.4 in.	Borehole, diameter 8 in.    Continuous slot	Borehole, bottom ft. MSI	or 1 1 211.\		a. Screen type:	Factory of	at 💟 1
Borehole, diameter 8 in. Other □ Slot size:  O.D. well casing 2 in. Other □ Slot size:  d. Slotted length: 11, Backfill material (below filter pack): None □ 14	Borehole, diameter 8 in.  Other   b. Manufacturer	morenoic, bottom 1c 14151			a. Screen type:		Alexander Contract
Borehole, diameter 8 in.  b. Manufacturer 6 o pro 5 e  c. Slot size: d. Slotted length:  1. D. well casing 2 in.  1. Backfill material (below filter pack):  None 1 and 2 in.	Borehole, diameter 8 in.  b. Manufacturer 6eo pro 5e			FORESCO	The same state of the same		
Borehole, diameter 8 in.  b. Manufacturer 6 o pro 5 e  c. Slot size: d. Slotted length:  1. D. well casing 2 in.  1. Backfill material (below filter pack):  None 1 14	Borehole, diameter 8 in.  b. Manufacturer 6 o pro 5e			Transfer and the second		Continuous sle	E II
Borehole, diameter 8 in.  b. Manufacturer 6 open 5 e  c. Slot size:  d. Slotted length:  11. Backfill material (below filter pack):  None 11.	Borehole, diameter 8 in.  b. Manufacturer 6 to 900 5 to  c. Slot size: d. Slotted length:					Continuous slo	t D C
b. Manufacturer Geopes 5e  c. Slot size: d. Slotted length:  11. Backfill material (below filter pack):  None 11.	b. Manufacturer Geopes 5e c. Slot size: d. Slotted length:	<b>A</b>				COMMINGORS SIO	· L (
b. Manufacturer Geopeobe c. Slot size: d. Slotted length:  11. Backfill material (below filter pack):  None 11.	b. Manufacturer Geopes 5e c. Slot size: d. Slotted length:	A					_
b. Manufacturer Geopeobe c. Slot size: d. Slotted length:  11. Backfill material (below filter pack):  None 11.	b. Manufacturer Geopes 5e c. Slot size: d. Slotted length:	Porahola diameter 7 :-				Out	- T ×
b. Manufacturer Geopeobe c. Slot size: d. Slotted length:  11. Backfill material (below filter pack):  None 11.	b. Manufacturer Geoptobe c. Slot size: d. Slotted length:	Moranola dismeter					T L S
O.D. well casing 2 .4 in.  c. Slot size: d. Slotted length:  11. Backfill material (below filter pack):  None 11.	O.D. well casing 2 - 1 in. c. Slot size: 0. 0   d. Slotted length:					1 11714	A
O.D. well casing 2 .4 in.  c. Slot size: d. Slotted length:  1.D. well casing 2 in.  1.Backfill material (below filter pack):  None 1 in.	O.D. well casing 2 - 4 in. c. Slot size: 0. 0   d. Slotted length:	Dolonoio, Giamotti = 111.			phone and the second se		
O.D. well casing 2 .4 in.  c. Slot size: d. Slotted length:  1.D. well casing 2 in.  1.Backfill material (below filter pack):  None 1 in.	O.D. well casing 2 - 4 in. c. Slot size: 0. 0   d. Slotted length:	Boichole, diameter = III.					
I.D. well casing 2 in. 11. Backfill material (below filter pack): None 11.	d. Slotted length:	Doronoio, Granicott = m.			h Manufactures		
I.D. well casing 2 in. d. Slotted length: 21/21  11. Backfill material (below filter pack): None 🖾 1	d. Slotted length:					Geoprobe	
I.D. well casing 2 in. 11. Backfill material (below filter pack): None 1					And the second s	Geoprobe	0.01
I.D. well casing 2 in. 11. Backfill material (below filter pack): None 1					And the second s	Geoprobe	
I.D. well casing 2 in. 11. Backfill material (below filter pack): None 11.					c. Slot size:	Geoprobe	
	I.D. well casing in 11. Backfill material (below filter pack): None 11.				c. Slot size:	Geoprobe	
		O.D. well casing 2 in.			c. Slot size: d. Slotted length:	Geoprobe	9/2
Other 🗆 🎎		O.D. well casing 2 in.			c. Slot size: d. Slotted length:	Geoprobe	9/2
	Other 🗆 🖔	O.D. well casing 2 in.		111	c. Slot size: d. Slotted length:	Geoprobe	9/2
tereby certify that the information on this form is true and correct to the best of my knowledge.	**************************************	O.D. well casing 2 in.		11	c. Slot size: d. Slotted length:	clow filter pack): Nor	1e 1

Please complete both forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin Department of Natural Resources

#### MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Waste		Waste Management			
Remediation/Rec	A ST THE STATE OF	Other	1000 14 50		
Facility/Project Name  Bright Cleaners	County Name	a-ke e	Well Name	1	
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well N		DNR Well ID Num	oer
surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed and pumped compressed air bailed only pumped only	41 61 42 62 70 20	11. Depth to Water (from top of well casing)  Date  Time  12. Sediment in well bottom  13. Water clarity	a	inches	$\frac{7}{2}$ $\frac{0}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{7}{2}$ $\frac{7}{2}$ $\frac{7}{2}$ $\frac{7}{2}$ $\frac{7}{2}$ $\frac{7}{2}$ $\frac{1}{2}$ $\frac{1}$
4. Depth of well (from top of well casisng)	1 <u>5</u> min. 1 . <u>5</u> ft. 0 <u>0</u> in.		(Describe)	(Describe)	
7. Volume of water removed from well	∠.7 gal. 1,5 gal. 2.0 gal.	solids		mg/l	mg/l
10. Analysis performed on water added? Y (If yes, attach results)	es □ No		e	st) and Firm  Last Name: Beck	u)
17. Additional comments on development:  Name and Address of Facility Contact / Owner/Responsib	de Party	I hereby certify tha	at the above info	ormation is true and	correct to the best
First Last Name: Name: Street: 7249 5. 76th 5t.	s Elison	of my knowledge.  Signature:	1 m	ze/	
City/State/Zip: franklin, w/ 53	132	Firm: Ap	vex (on	paries, L	LL

		Waste Management	MONITORING WELL CONSTRUCTION Form 4400-113A Rev. 7-98
Facility/Project Name  Dright Cleaners	Local Grid Location of Well  Tt. US.	Otherft. DW.	Well Name
Facility License, Permit or Monitoring No.	Local Grid Origin (estimated Lat. 42° 57° 46.54 "Lon	: 🔲 ) or Well Location 🗆	Wis. Unique Well No. DNR Well ID No.
Facility ID 2 4 1 9 2 8 9 4 0	St. Plane 687 338 ft. N.	9	Date Well Installed 8 / 1 1 / 2 0 1 7
Type of Well Well Code		T. 5 N. R. ZI HW	Well Installed By: Name (first, last) and Fir
Distance from Waste/ Enf. Stds. Source 38 ft. Apply		e/Source   Gov. Lot Number   degradient   ot Known	ESP
A. Protective pipe, top elevation _ 76	. 25 ft. MSL	1. Cap and lock? 2. Protective cover p	Yes No
B. Well casing, top elevation 36	8,95ft. MSL	a. Inside diameter	P 1
C. Land surface elevation _ 76	9.25 ft. MSL	b. Length:	ft.
D. Surface seal, bottom ft. MS	Lor ft.	c. Material:	Steel 🗹 0
12. USCS classification of soil near screen	\$24.5000 PM	d. Additional pro	tection? Other I No
GP □ GM □ GC □ GW □ S	W   SP CH	If yes, describe	
Bedrock 🗆		3. Surface scal:	Concrete 1 01
The second secon	es □ No	\	Other 🗆
	ary 50	<ol> <li>Material between</li> </ol>	well casing and protective pipe:
Hollow Stem Au	ger 🗆 41	Lone	Bentonite 30
		5. Annular space sea	1
	Air 🗆 Ø 1		nud weight Bentonite-sand slurry 3 3
Drilling Mud □ 0 3 N	one ■ 99		nud weight Bentonite slurry 3
16. Drilling additives used?	es 🗆 No		ite Bentonite-cement grout 5 (
		f. How installed:	
Describe		I, How installed.	Tremie pumped 🗆 /0.2
17. Source of water (attach analysis, if requ	ired):		Gravity 🗖 08
		6. Bentonite seal:	a. Bentonite granules 3 3
E. Bentonite seal, topft. MSI	or ft.	b. 11/4 in. 11	3/8 in. □ 1/2 in. Bentonite chips □ 3 2 Other □
F. Fine sand, top ft. MSI	orft.	7. Fine sand materia	il: Manufacturer, product name & mesh size
G. Filter pack, top ft. MSI	or	b. Volume added	n³
H. Screen joint, top ft. MSI	or1/2 ft.	8. Filter pack materi	al: Manufacturer, product name & mesh size
. Well bottom ft. MSI	or19½ft.	b. Volume added 9. Well casing:	Flush threaded PVC schedule 40 💆 23
. Filter pack, bottomft. MSI	or 19/4n.		Flush threaded PVC schedule 80  24
. Borehole, bottom ft. MSI	or19'4n.	10. Screen material: a. Screen type:	Factory cut 11
Borehole, diameter in.			Continuous slot  Other  Other
1. O.D. well casing 2.4 in.		b. Manufacturer c. Slot size:	0. <u>0</u> 1_in.
N. I.D. well casing in.		d. Slotted length:	(below filter pack): None 14
hereby certify that the information on this i	form is true and correct to the best	of my knowledge.	Other 🗆 🥷
The state of the s		D	

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin Department of Natural Resources

#### MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Waste		Waste Management			
Remediation/Red		Other			
Facility/Project Name	County Name		Well Name	7	
Bright Ueuners	Milwa			nw-Z	
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well N	umber ————	DNR Well	ID Number
1. Can this well be purged dry?	es 🗆 No	11. Depth to Water	-		After Development
2. Well development method		(from top of	a	7 1 ft.	ft.
surged with bailer and bailed	4 1	well casing)			
surged with bailer and pumped	б 1		A .	Va.	
surged with block and bailed	42	Date	b. 001	1/201	7 08/14/2017 y m m d d y y y y
surged with block and pumped	62				
surged with block, bailed and pumped	70	Name of the last o	175 4	a.m.	10:55 a.m.
	20	Time	c:	up.m.	p.m.
	10	10.0 11 11	/2	().	0.00
pumped only		12. Sediment in well bottom		inches	_ O O inches
St. Control of the Co	5.0		Cl		Clear 20
Other		13. Water clarity	Clear   Turbid		Turbid □ 25
2 771	1 < .		(Describe)		Describe)
3. Time spent developing well	15 min.		CAN TO SECTION OF THE PERSON O	-~	<i>Describe</i>
4. Depth of well (from top of well casisng)	<u>1 . 5</u> ft.				
5. Inside diameter of well	20 in.				
< X7.1 C					
6. Volume of water in filter pack and well casing	2. F gal.		-		
casing	2. 1 gal.	Fill in if drilling fluid	de were weed s	and well is at	eolid waste facility:
7. Volume of water removed from well	1 5 gal.	I'm m n drining nun	us were used a	ind wen is at	solid waste facility.
7. Volume of water removed from werr	1 8	14 Total suspended		mg/l	mg/l
8. Volume of water added (if any)	) O gal.	solids			
9. Source of water added		15. COD		mg/l	mg/l
		7			
		16. Well developed b	The second secon		2 1
10. Analysis performed on water added?	es 🗆 No	First Name: Joe	e	Last Name:	Beck /
(If yes, attach results)		Firm: Ages	longa	ics 1	LLC
17. Additional comments on development:		Tim. Prop		١	
17. Additional Collinolis on Covelephient.			· ·		
Name and Address of Facility Contact/Owner/Responsib	le Party	1 2 2 2			
First Last	ic i aity			formation is	true and correct to the best
Name:Name:		of my knowledge.			
Facility/Firm: Franklin Centre / phillips 1	Elisun	Signature:	10		
Street: 7249 S. 76th St.		Print Name:	Joe B	celes	
September 1	32	Firm:	nex la	mounes	LLC
City/State/Zip: Franklin, WI 531	, -	Philis / T		The same	

	atershed/Wastewater emediation/Redevelopment	waste Management	MONITORING WELL CONSTRUCTION Form 4400-113A Rev. 7-98
Facility/Project Name   I	emediation/Redevelopment	1 17/P	Well Name
Bright Cleaners	_69 n. =	N. 3 ft. □ E. S.	MW-3
acility License, Permit or Monitoring No. II	Local Grid Origin ( estimate	ted: $\square$ ) or Well Location $\square$ ong. 80° $O$ 40.15 or	Wis. Unique Well No. DNR Well ID No.
Facility ID	St. Plane 682 338 ft. N.	273 123 ft. E. C)C/N	Date Well Installed 11/2017
Type of Well	Section Location of Waste/Sour		m m d d y y y y Well Installed By: Name (first, last) and Fire
Well Code//	ocation of Well Relative to W	aste/Source Gov. Lot Number	
Distance from Waste/ Enf. Stds.	u <b>Upgradient</b> s □	Not Known —	
	ft. MSL	1. Cap and lock?	Yes No
material bibet of an area = -i	9.3 I ft. MSL	2. Protective cover p	ipe:
. Well casing, top elevation = = = =	1.2 tt. MSL -	a. Inside diameter	5.1 in.
Land surface elevation _ 36	9.61 ft. MSL	b. Length:	l ft.
	-	c. Material:	Steel W 04
). Surface seal, bottom ft. MSI	Lor ft.		Other 🗆 🚬
12. USCS classification of soil near screen:	1 7 - 7	d. Additional pro	tection?
GP □ GM □ GC □ GW □ ST	W - SP -	If yes, describe	
SM SC ML MH C	L CH CH CH		Bentonite 🗆 , 30
Bedrock 🗆		3, Surface scal:	Concrete 01
13. Sieve analysis performed?	es 🗆 No		Other 🗆
4. Drilling method used: Rota	пу □ 5 0	4. Material between	well casing and protective pipe:
Hollow Stem Aug		200	Pentonite 7 30
	her 🗆 🔛	Lonora	Other 🖾
		MC0	
15. Drilling fluid used: Water □ 0 2	Air 🗆 01	5. Annular space sea	
Drilling Mud 🗆 0 3 N	one 1 99		nud weight Bentonite-sand slurry 35
		cLbs/gal m	nud weight Bentonite slurry 2 31
16. Drilling additives used? ☐ Y	es 🗹 No		ite Bentonite-cement grout 🗆 50
		KWA	volume added for any of the above
Describe		f. How installed:	
17. Source of water (attach analysis, if requi	rad):		Tremie pumped 1 0 2
7. Source of water (auden analysis, il legul	ioa).		Gravity 🖾 08
1		6. Bentonite seal:	a. Bentonite granules 33
The state of the s	<u> </u>	b. □1/4 in. ☑	3/8 in. 🗆 1/2 in. Bentonite chips 🛂 3 2
Bentonite seal, top ft, MSL	orft.	c	Other 🗆 🎎
Fine sand, top ft. MSI	orft.	7. Fine sand materia	il: Manufacturer, product name & mesh size
	13	a	
Filter pack, top ft. MSL	or ft.	b. Volume added	ft <sup>3</sup>
I. Screen joint, top ft. MSI	or5 ft.	8. Filter pack materi	al: Manufacturer, product name & mesh size
. Control Johns, top		h Volume added	3.9 ft3
Well bottom ft. MSL	or ft.	9. Well casing:	Flush threaded PVC schedule 40 2 3
Filter pack, bottom ft. MSL	or15 ft.		Other 🗆 🏬
	12	10. Screen material:	- Sure
. Borehole, bottom ft. MSL	or ft.	a. Screen type:	Factory cut 11 Continuous slot 0 01
Borehole, diameter 8 in.			Other 🗆
Annual State of the Control of the C		b. Manufacturer	Geoprobe
1. O.D. well casing 2.1 in.		c. Slot size: d. Slotted length	0. <u>Ql</u> _in
N. I.D. well casing Z in.		11. Backfill material	and the state of t
		<u> </u>	Out I W
hereby certify that the information on this I	form is true and correct to the h	est of my knowledge	

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin Department of Natural Resources

#### MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Was	tewater	Waste Management			
Remediation/Re	edevelopment 🗹	Other			
Facility/Project Name	County Name		Well Name	-	
Dright Cleaners		nikel		MW.3	
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well N	umber	DNR Well ID	Number
1. Can this well be purged dry?	Yes 🗆 No	11. Depth to Water			fter Development
2. Well development method		(from top of	a <u>&amp;</u> . <u>!</u>	<u>40</u> ft	1300 ft.
surged with bailer and bailed	41	well casing)			
surged with block and bailed surged with block and pumped surged with block, bailed and pumped	61 42 62 70 20	Date Time	b. $\frac{08}{m}$ / $\frac{14}{d}$ d.	$ \frac{\frac{7}{y} \frac{0}{y} \frac{1}{y} \frac{3}{y}}{y \frac{3}{y}} $ $ \frac{1}{y} \frac{a.m.}{p.m.} $	$\frac{68}{m m} / \frac{14}{d} / \frac{2017}{y y y}$ $10: 150 p.m.$
bailed only	10		ž.		0.0
	51	12. Sediment in well	_ 0,0	inches	inches
pumped slowly	5.0	bottom			
Other		13. Water clarity	Clear 1 1		ar 20
3. Time spent developing well	<u> </u>		(Describe)	(De	rbid□ 25 scribe)
	<u>∫ . O</u> ft.				
5. Inside diameter of well $-\frac{2}{2}$ .	O O in.		-	=	
	5.8 gal.	Fill in if drilling fluid	ds were used and	d well is at sol	lid waste facility:
8. Volume of water added (if any)	Ogal.	14. Total suspended solids		_ mg/l _	mg/l
9. Source of water added ~ ~ ~ ~ ~		15. COD-			mg/l
10. Analysis performed on water added?  (If yes, attach results)	Yes 🗆 No	First Name: 500		Last Name: B	
17. Additional comments on development:			,		
Name and Address of Facility Contact /Owner/Responsi First Last Name: Name:	ble Party	I hereby certify that	at the above info	ormation is tru	e and correct to the best
Facility/Firm: Franklin Centre/Phillips	Ed:aun	Signature:	1/m	*	
Street: 7249 S. 76th St.		Print Name:	Joe Ber	lee	
City/State/Zip: Franklin, W1 531	32	Firm: Ap	ex lomp	aries, L	LL

### Appendix D

Groundwater Elevation Measurements & Slug Test Analysis



## Groundwater Elevation Measurements Franklin Centre 7249 South 76th Street, Franklin, Wisconsin

Apex Project No.: PECO\_2017-68

Well Number	Top of Casing Elevation (ft - MSL)	Well Depth (ft)	Screened Interval (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft - MSL)	Difference (ft)
				August 14, 2017	11.88	756.82	
MW-1	768.70	19.5	9.5 to 19.5	August 17, 2017	11.88	756.82	0.00
				September 12, 2017	12.05	756.65	-0.17
				August 14, 2017	11.96	756.99	
MW-2	768.95	19.5	9.5 to 19.5	August 17, 2017	11.97	756.98	-0.01
				September 12, 2017	11.97	756.98	0.00
				August 14, 2017	8.40	760.91	
MW-3	769.31	15.0	5 to 15	August 17, 2017	8.40	760.91	0.00
				September 12, 2017	8.54	760.77	-0.14

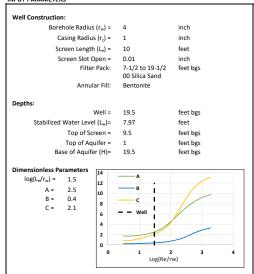
Notes: MSL - Mean Sea Level

#### Results of Hydraulic Slug Testing: MW-1

#### WELL INFORMATION

Well ID: MW-1 Tuesday, September 12, 2017 Date: Test No.: 1 Start Time: 16:00 Test Type: Rising Head Test Method: Bail down Ground Elev.: feet AMSL TOC Elev.: 768.70 feet AMSL Lithology: 3 inches asphalt; 4 inches aggregate; silty clay (CL) to a depth of 3 feet bgs; a 3 inch clayey silt (ML) lens at 3 feet bgs; silty clay (CL) with trace gravel to a depth of 15 feet bgs, where refusal was encountered.

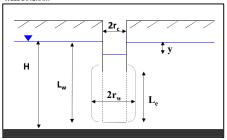
#### INPUT PARAMETERS



#### CALCULATIONS

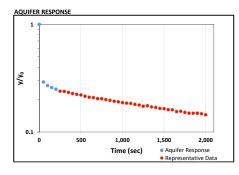


#### WELL DIAGRAM



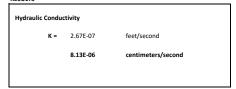
#### BOUWER & RICE SLUG TEST EQUATIONS<sup>1</sup>

ŀ	Hydraulic Conductivity
	$K = \frac{r_e^2 ln \left(\frac{R_e}{r_w}\right)}{2L_e} \frac{1}{t} ln \frac{y_0}{y_t}$
E	Effective Radius of Influence Partially Penetrating Well $(L_w < H)$ :
	$ln\!\left(\frac{R_c}{r_w}\right)\!=\!\left[\frac{1.1}{ln\!\left(\frac{L_w}{r_w}\right)}\!+\!\frac{A+Bln\!\left[\frac{\left(\!H-L_w\right)}{r_w}\!\right]}{\left(\frac{L_c}{r_w}\right)}\right]^{-1}$
	Fully Penetrating Well (L <sub>w</sub> = H):
	$\ln \left( \frac{R_{c}}{r_{w}} \right) = \left[ \frac{1.1}{\ln \left( \frac{L_{w}}{r_{w}} \right)} + \frac{C}{\left( \frac{L_{c}}{r_{w}} \right)} \right]^{-1}$



#### AQUIFER RESPONSE

Time (sec)	Hydraulic Head	y (ft)	y/y <sub>o</sub> (ft)
	(ft)		
0	6.78	1.20	1.00
50	7.62	0.35	0.29
100	7.65	0.32	0.27
150	7.66	0.31	0.26
200	7.67	0.30	0.25
250	7.68	0.29	0.24
300	7.69	0.29	0.24
350	7.69	0.28	0.23
400	7.70	0.27	0.23
450	7.70	0.27	0.22
500	7.71	0.26	0.22
550	7.71	0.26	0.22
600	7.72	0.25	0.21
650	7.72	0.25	0.21
700	7.73	0.24	0.20
750	7.73	0.24	0.20
800	7.73	0.24	0.20
850	7.74	0.23	0.20
900	7.74	0.23	0.19
950	7.74	0.23	0.19
1,000	7.75	0.22	0.19
1,050	7.75	0.22	0.19
1,100	7.75	0.22	0.18
1,150	7.75	0.22	0.18
1,200	7.76	0.21	0.18
1,250	7.76	0.21	0.17
1,300	7.76	0.21	0.18
1,350	7.77	0.20	0.17
1,400	7.77	0.20	0.17
1,450	7.77	0.20	0.17
1,500	7.77	0.20	0.16
1,550	7.78	0.19	0.16
1,600	7.78	0.19	0.16
1,650	7.79	0.19	0.15
1,700	7.78	0.19	0.16
1,750	7.79	0.18	0.15
1,800	7.79	0.18	0.15
1,850	7.79	0.18	0.15
1,900	7.79	0.18	0.15
1,950	7.79	0.18	0.15
2,000	7.80	0.17	0.14



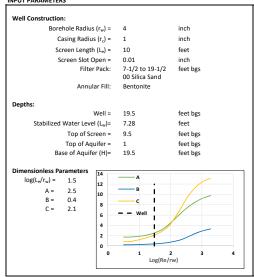
<sup>&</sup>lt;sup>1</sup> Bouwer, Herman. 1989. The Bouwer and Rice Slug Test - An Update. Ground Water, Vol. 27, No. 3: 304-309.

#### Results of Hydraulic Slug Testing: MW-2

#### WELL INFORMATION

Well ID: MW-2 Tuesday, September 12, 2017 Date: Test No.: 1 Start Time: 17:00 Test Type: Rising Head Test Method: Bail down Ground Elev.: feet AMSL TOC Elev.: 768.95 feet AMSL Lithology: 3 inches asphalt; 4 inches aggregate; clayey gravelly sand (SW) to a depth of 4 feet bgs; gravelly silty clay (CL) do a depth of 10 feet bgs; glayey gravelly sand (SW) to a depth of 11 feet bgs; clayey silt (ML) with trace gravel to a depth of 15-1/2 feet; and silty clay (CL) to a depth of 18 feet bgs, where refusal was encountered.

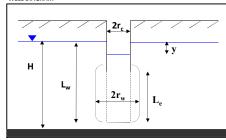
#### INPUT PARAMETERS



#### CALCULATIONS

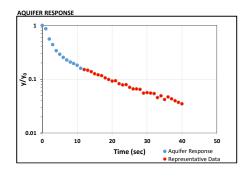


#### WELL DIAGRAM



#### BOUWER & RICE SLUG TEST EQUATIONS1

Hydraulic Conductivity
$K = \frac{r_{c}^{2} ln \left(\frac{R_{e}}{r_{w}}\right)}{2L_{e}} \frac{1}{t} ln \frac{y_{0}}{y_{t}}$
Effective Radius of Influence Partially Penetrating Well $(L_w < H)$ :
$\ln\!\left(\frac{R_{\rm e}}{r_{\rm w}}\right)\!=\!\left[\frac{1.1}{\ln\!\left(\frac{L_{\rm w}}{r_{\rm w}}\right)\!+\!\frac{A+B\!\ln\!\left[\frac{\left(H-L_{\rm w}}{r_{\rm w}}\right)\!\right]}{\left(\frac{L_{\rm e}}{r_{\rm w}}\right)}\right]^{\!-1}$
Fully Penetrating Well (L <sub>w</sub> = H):
$\ln\left(\frac{R_{c}}{r_{w}}\right) = \left[\frac{1.1}{\ln\left(\frac{L_{w}}{r_{w}}\right)} + \frac{C}{\left(\frac{L_{c}}{r_{w}}\right)}\right]^{-1}$



#### AQUIFER RESPONSE

Time (sec)	Hydraulic Head	y (ft)	y/y <sub>0</sub> (ft)
	(ft)		
0	6.45	0.83	1.00
1	6.56	0.72	0.86
2	6.82	0.46	0.56
3	6.91	0.37	0.44
4	7.00	0.28	0.34
5	7.04	0.24	0.29
6	7.07	0.21	0.25
7	7.09	0.19	0.23
8	7.11	0.17	0.21
9	7.12	0.16	0.20
10	7.13	0.15	0.18
11	7.15	0.13	0.16
12	7.15	0.13	0.15
13	7.16	0.12	0.15
14	7.17	0.12	0.14
15	7.18	0.11	0.13
16	7.18	0.10	0.12
17	7.18	0.10	0.12
18	7.19	0.09	0.11
19	7.20	0.08	0.10
20	7.20	0.08	0.09
21	7.20	0.08	0.09
22	7.21	0.07	0.08
23	7.22	0.07	0.08
24	7.21	0.07	0.08
25	7.22	0.06	0.07
26	7.23	0.06	0.07
27	7.23	0.06	0.07
28	7.23	0.05	0.06
29	7.23	0.05	0.06
30	7.23	0.05	0.06
31	7.23	0.05	0.06
32	7.24	0.04	0.05
33	7.24	0.04	0.05
34	7.24	0.04	0.05
35	7.25	0.04	0.04
36	7.24	0.04	0.05
37	7.24	0.04	0.04
38	7.25	0.03	0.04
39	7.25	0.03	0.04
40	7.25	0.03	0.03

	К =	4.68E-05	reet/second	
Hydraulic	Conduc	4.68E-05	feet/second	

<sup>&</sup>lt;sup>1</sup> Bouwer, Herman. 1989. The Bouwer and Rice Slug Test - An Update. Ground Water, Vol. 27, No. 3: 304-309.

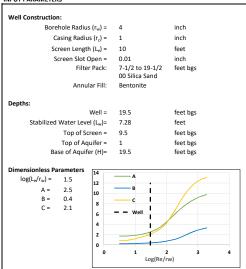
#### Results of Hydraulic Slug Testing: MW-2

#### WELL INFORMATION

Well ID: MW-2 Date: Tuesday, September 12, 2017 Test No.: 2 Start Time: 17:08 Test Type: Rising Head Test Method: Bail down Ground Elev.: feet AMSL TOC Elev.: 768.95 feet AMSL Lithology: 3 inches asphalt; 4 inches aggregate; clayey gravelly sand (SW) to a depth of 4 feet bgs; gravelly silty clay (CL) do a depth of 10 feet bgs; glayey gravelly sand (SW) to a depth of 11 feet bgs; clayey

silt (ML) with trace gravel to a depth of 15-1/2 feet; and silty clay (CL) to a depth of 18 feet bgs, where refusal was encountered.

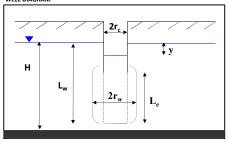
#### INPUT PARAMETERS



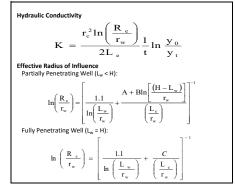
#### CALCULATIONS

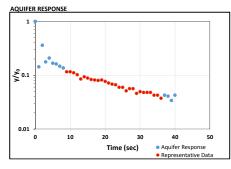


#### WELL DIAGRAM



#### BOUWER & RICE SLUG TEST EQUATIONS<sup>1</sup>





#### AQUIFER RESPONSE

Time (sec)	Hydraulic Head	y (ft)	y/y <sub>0</sub> (ft)
0	(ft)	0.59	4.00
	6.69		1.00
1 2	7.20	0.08 0.21	0.14 0.36
3	7.07		
4	7.18 7.16	0.10	0.18
5	7.16	0.12	0.21 0.17
6	-	0.10	
7	7.19	0.10	0.16
8	7.19	0.09	0.15
	7.20	0.08	0.14
9	7.21	0.07	0.12
10	7.21	0.07	0.12
11	7.22	0.07	0.11
12	7.22	0.06	0.10
13	7.23	0.05	0.09
14	7.23	0.06	0.09
15	7.23	0.05	0.09
16	7.23	0.05	0.08
17	7.23	0.05	0.08
18	7.23	0.05	0.08
19	7.23	0.05	0.08
20	7.24	0.04	0.08
21	7.24	0.04	0.07
22	7.24	0.04	0.07
23	7.24	0.04	0.07
24	7.25	0.04	0.06
25	7.25	0.04	0.06
26	7.25	0.03	0.05
27	7.25	0.03	0.06
28	7.25	0.03	0.06
29	7.25	0.03	0.05
30	7.25	0.03	0.05
31	7.25	0.03	0.05
32	7.25	0.03	0.05
33	7.25	0.03	0.05
34	7.26	0.03	0.04
35	7.26	0.03	0.04
36	7.26	0.02	0.04
37	7.26	0.03	0.04
38	7.26	0.02	0.04
39	7.26	0.02	0.03
40	7.26	0.03	0.04

Hydraulic Conductivity										
K =	3.62E-05	feet/second								
	1.10E-03	centimeters/second								

<sup>&</sup>lt;sup>1</sup> Bouwer, Herman. 1989. The Bouwer and Rice Slug Test - An Update. Ground Water, Vol. 27, No. 3: 304-309.

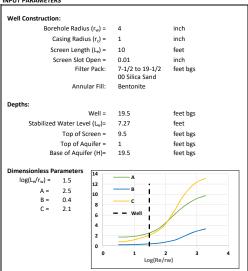
#### Results of Hydraulic Slug Testing: MW-2

#### WELL INFORMATION

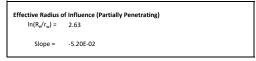
Well ID: MW-2 Tuesday, September 12, 2017 Date: Test No.: 3 Start Time: 17:15 Test Type: Rising Head Test Method: Bail down Ground Elev.: feet AMSL TOC Elev.: 768.95 feet AMSL Lithology: 3 inches asphalt; 4 inches aggregate; clayey gravelly sand (SW) to a depth of 4 feet bgs; gravelly silty clay (CL) do a depth of 10 feet bgs; glayey gravelly sand (SW) to a depth of 11 feet bgs; clayey silt (ML) with trace gravel to a depth of 15-1/2 feet; and silty clay

(CL) to a depth of 18 feet bgs, where refusal was encountered.

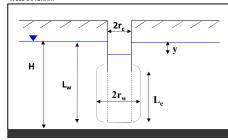
#### INPUT PARAMETERS



#### CALCULATIONS

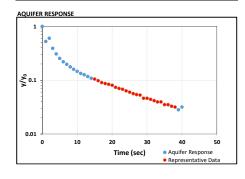


#### WELL DIAGRAM



#### BOUWER & RICE SLUG TEST EQUATIONS1

Hydraulic Conductivity
$K = \frac{r_{c}^{2} ln\left(\frac{R_{c}}{r_{w}}\right)}{2L_{c}} \frac{1}{t} ln \frac{y_{0}}{y_{t}}$
Effective Radius of Influence Partially Penetrating Well $(L_w < H)$ :
$ln\!\left(\frac{R_{\rm e}}{r_{\rm w}}\right)\!=\!\left[\frac{1.1}{ln\!\left(\frac{L_{\rm w}}{r_{\rm w}}\right)}\!+\!\frac{A+Bln\!\left[\frac{\left(H-L_{\rm w}\right)}{r_{\rm w}}\right]}{\left(\frac{L_{\rm e}}{r_{\rm w}}\right)}\right]^{\!-1}$
Fully Penetrating Well (L <sub>w</sub> = H):
$\ln\left(\frac{R_{c}}{r_{w}}\right) = \left[\frac{1.1}{\ln\left(\frac{L_{w}}{r_{w}}\right)} + \frac{C}{\left(\frac{L_{c}}{r_{w}}\right)}\right]^{-1}$



#### AQUIFER RESPONSE

AQUIFER RESPONS	Hydraulic Head	(6.)	(64)
Time (sec)	(ft)	y (ft)	y/y <sub>0</sub> (ft)
0	6.39	0.89	1.00
1	6.81	0.47	0.53
2	6.74	0.53	0.60
3	6.93	0.35	0.39
4	7.00	0.27	0.31
5	7.05	0.23	0.25
6	7.08	0.19	0.22
7	7.10	0.17	0.20
8	7.11	0.16	0.18
9	7.13	0.14	0.16
10	7.14	0.13	0.15
11	7.15	0.12	0.13
12	7.16	0.11	0.13
13	7.17	0.10	0.12
14	7.17	0.10	0.11
15	7.18	0.09	0.11
16	7.18	0.09	0.10
17	7.19	0.08	0.09
18	7.19	0.08	0.09
19	7.20	0.07	0.08
20	7.20	0.07	0.08
21	7.21	0.06	0.07
22	7.21	0.06	0.07
23	7.21	0.06	0.07
24	7.21	0.06	0.06
25	7.22	0.05	0.06
26	7.22	0.05	0.06
27	7.22	0.05	0.05
28	7.22	0.05	0.05
29	7.23	0.04	0.05
30	7.23	0.04	0.05
31	7.23	0.04	0.04
32	7.23	0.04	0.04
33	7.24	0.03	0.04
34	7.24	0.03	0.04
35	7.24	0.03	0.04
36	7.24	0.03	0.04
37	7.24	0.03	0.03
38	7.24	0.03	0.03
39	7.25	0.02	0.03
40	7.24	0.03	0.03

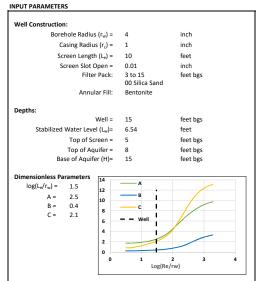
Hydraulic	K =	4.74E-05	feet/second
		1.45E-03	centimeters/second

<sup>&</sup>lt;sup>1</sup> Bouwer, Herman. 1989. The Bouwer and Rice Slug Test - An Update. Ground Water, Vol. 27, No. 3: 304-309.

#### Results of Hydraulic Slug Testing: MW-3

#### WELL INFORMATION

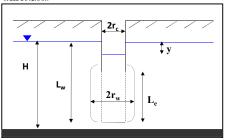
Well ID: MW-3 Tuesday, September 12, 2017 Date: Test No.: 1 Start Time: 17:20 Test Type: Rising Head Test Method: Bail down Ground Elev.: feet AMSL TOC Elev.: 769.31 feet AMSL Lithology: 5 inches asphalt; 8 inches aggregate; silty clay (CL) to a depth of 8 feet bgs; clayey silt (ML) to a depth of 12 feet bgs, where refusal was encountered.



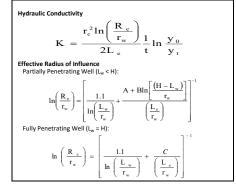
#### CALCULATIONS

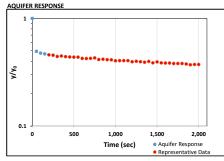
Effective Radius of Influence (Partially Penetrating)  $ln(R_{\omega}/r_{\omega}) = 2.62$  Slope = -1.12E-04

#### WELL DIAGRAM



#### BOUWER & RICE SLUG TEST EQUATIONS<sup>1</sup>





#### AQUIFER RESPONSE

Time (see)	Hydraulic Head	(6)	y/y <sub>o</sub> (ft)
Time (sec)	(ft)	y (ft)	
0	6.03	0.51	1.00
50	6.29	0.25	0.49
100	6.30	0.24	0.48
150	6.30	0.24	0.47
200	6.31	0.24	0.46
250	6.31	0.23	0.45
300	6.31	0.23	0.44
350	6.31	0.23	0.45
400	6.31	0.23	0.44
450	6.32	0.23	0.44
500	6.32	0.22	0.44
550	6.32	0.22	0.44
600	6.32	0.22	0.42
650	6.32	0.22	0.42
700	6.32	0.22	0.42
750	6.32	0.22	0.43
800	6.33	0.21	0.42
850	6.33	0.21	0.42
900	6.33	0.21	0.41
950	6.33	0.21	0.41
1,000	6.33	0.21	0.40
1,050	6.33	0.21	0.41
1,100	6.33	0.21	0.41
1,150	6.33	0.21	0.41
1,200	6.34	0.20	0.40
1,250	6.34	0.21	0.40
1,300	6.34	0.20	0.40
1,350	6.34	0.20	0.39
1,400	6.34	0.20	0.40
1,450	6.34	0.20	0.39
1,500	6.34	0.20	0.39
1,550	6.34	0.20	0.39
1,600	6.34	0.20	0.38
1,650	6.34	0.20	0.38
1,700	6.35	0.20	0.38
1,750	6.35	0.20	0.38
1,800	6.35	0.20	0.38
1,850	6.35	0.19	0.38
1,900	6.35	0.19	0.37
1,950	6.35	0.19	0.37
2,000	6.35	0.19	0.37



<sup>&</sup>lt;sup>1</sup> Bouwer, Herman. 1989. The Bouwer and Rice Slug Test - An Update. Ground Water, Vol. 27, No. 3: 304-309.

# Appendix E Laboratory Reports



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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

September 09, 2016

Apex Companies, LLC 1701 East Woodfield Rd, Suite 333 Schaumburg, IL 60173

Telephone: (847) 956-8589 Fax: (847) 956-8619

Analytical Report for STAT Work Order: 16081298 Revision 0

RE: PECO-216-78, Bright Cleaners-Franklin Centre, 7249 S. 76th St., Franklin

Dear Joseph Becker:

STAT Analysis received 8 samples for the referenced project on 8/31/2016 4:45:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements specified in WAC DNR Chapter NR 149 (Certification Number 399099910). Analyses were performed in accordance with methods as referenced on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. A listing of accredited methods/parameters can also be provided.

For sample results requiring adjustment for dilutions, the detection and reporting limits are adjusted for the corresponding dilution factor. Analytical results expressed on a dry weight basis have units of mg/Kg-dry or µg/Kg-dry on the analytical report. Corresponding reporting limits are adjusted for dry weight.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Craig Chawla

Project Manager

The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples tested. If you have received this report in error, please notify us immediately by phone. This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This analytical report shall become property of the Customer upon payment in full. Otherwise, STAT will be under no obligation to support, defend or discuss the analytical report.



Date: September 09, 2016

**Client:** Apex Companies, LLC

**Work Order Sample Summary Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

Work Order: 16081298 Revision 0

Lab Sample ID	Client Sample ID	Tag Number	<b>Collection Date</b>	<b>Date Received</b>
16081298-001A	TW-1 @ 14'		8/31/2016 10:00:00 AM	8/31/2016
16081298-001B	TW-1 @ 14'		8/31/2016 10:00:00 AM	8/31/2016
16081298-002A	TW-2 @ 11'		8/31/2016 10:30:00 AM	8/31/2016
16081298-002B	TW-2 @ 11'		8/31/2016 10:30:00 AM	8/31/2016
16081298-003A	TW-3 @ 12'		8/31/2016 11:00:00 AM	8/31/2016
16081298-003B	TW-3 @ 12'		8/31/2016 11:00:00 AM	8/31/2016
16081298-004A	TW-1		8/31/2016 11:15:00 AM	8/31/2016
16081298-005A	TW-3		8/31/2016 12:40:00 PM	8/31/2016
16081298-006A	SV-1		8/31/2016 12:28:00 PM	8/31/2016
16081298-007A	SV-2		8/31/2016 12:32:00 PM	8/31/2016
16081298-008A	SV-3		8/31/2016 12:34:00 PM	8/31/2016

2 of 22

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Date: September 09, 2016

**CLIENT:** Apex Companies, LLC

Project: PECO-216-78, Bright Cleaners-Franklin Centre, 7249 S. 76t CASE NARRATIVE

Work Order: 16081298 Revision 0

TO-15 results that are reported in mg/m³ are calculated based on a temperature of 25°C, atmospheric pressure of 760 mm Hg, and the molecular weight of the analyte.

The TO-15 LCS analyzed 09/06/2016 had the following outside of control limits:

1,2,4-Trimethylbenzene: 133.6% (LCS) recovery (QC Limits 70-130%) 1,3-Dichlorobenzene: 131.2% (LCS) recovery (QC Limits 70-130%)

Ethylbenzene: 134.8% (LCS) recovery (QC Limits 70-130%) Naphthalene: 138.8% (LCS) recovery (QC Limits 70-130%) Total Xylenes: 132.5% (LCS) recovery (QC Limits 70-130%)

2242 West Harrison St., Suite 200, Chicago, IL 60612-3766

Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com

Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: September 09, 2016

**ANALYTICAL RESULTS** 

**Collection Date:** 8/31/2016 10:00:00 AM

Client Sample ID: TW-1 @ 14'

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

Matrix: SOIL 16081298-001 Lab ID:

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	SV	N5035/826	<u></u> 0В	Prep	Date: 8/31/2	2016	Analyst: <b>PS</b>
Acetone	0.029	0.073	0.0022	JB	mg/Kg-dry	1	9/2/2016
Benzene	0.0018	0.0049	0.00019	J	mg/Kg-dry	1	9/2/2016
Bromodichloromethane	ND	0.0049	0.00039		mg/Kg-dry	1	9/2/2016
Bromoform	ND	0.0049	0.00039		mg/Kg-dry	1	9/2/2016
Bromomethane	ND	0.0097	0.00049		mg/Kg-dry	1	9/2/2016
2-Butanone	ND	0.073	0.0015		mg/Kg-dry	1	9/2/2016
Carbon disulfide	0.00019	0.049	0.00019	J	mg/Kg-dry	1	9/2/2016
Carbon tetrachloride	ND	0.0049	0.00029		mg/Kg-dry	1	9/2/2016
Chlorobenzene	ND	0.0049	0.00019		mg/Kg-dry	1	9/2/2016
Chloroethane	ND	0.0097	0.00039		mg/Kg-dry	1	9/2/2016
Chloroform	ND	0.0049	0.00019		mg/Kg-dry	1	9/2/2016
Chloromethane	ND	0.0097	0.00029		mg/Kg-dry	1	9/2/2016
Dibromochloromethane	ND	0.0049	0.00039		mg/Kg-dry	1	9/2/2016
1,1-Dichloroethane	ND	0.0049	0.00029		mg/Kg-dry	1	9/2/2016
1,2-Dichloroethane	ND	0.0049	0.00058		mg/Kg-dry	1	9/2/2016
1,1-Dichloroethene	ND	0.0049	0.00029		mg/Kg-dry	1	9/2/2016
cis-1,2-Dichloroethene	ND	0.0049	0.00029		mg/Kg-dry	1	9/2/2016
trans-1,2-Dichloroethene	ND	0.0049	0.00029		mg/Kg-dry	1	9/2/2016
1,2-Dichloropropane	ND	0.0049	0.00039		mg/Kg-dry	1	9/2/2016
cis-1,3-Dichloropropene	ND	0.0019	0.00019		mg/Kg-dry	1	9/2/2016
trans-1,3-Dichloropropene	ND	0.0019	0.00029		mg/Kg-dry	1	9/2/2016
Ethylbenzene	0.00026	0.0049	0.000097	J	mg/Kg-dry	1	9/2/2016
2-Hexanone	ND	0.019	0.00078		mg/Kg-dry	1	9/2/2016
4-Methyl-2-pentanone	ND	0.019	0.00029		mg/Kg-dry	1	9/2/2016
Methylene chloride	0.0019	0.0097	0.00078	JB	mg/Kg-dry	1	9/2/2016
Methyl tert-butyl ether	ND	0.0049	0.00019		mg/Kg-dry	1	9/2/2016
Styrene	ND	0.0049	0.00019		mg/Kg-dry	1	9/2/2016
1,1,2,2-Tetrachloroethane	ND	0.0049	0.00019		mg/Kg-dry	1	9/2/2016
Tetrachloroethene	ND	0.0049	0.00029		mg/Kg-dry	1	9/2/2016
Toluene	0.0017	0.0049	0.00019	J	mg/Kg-dry	1	9/2/2016
1,1,1-Trichloroethane	ND	0.0049	0.00019		mg/Kg-dry	1	9/2/2016
1,1,2-Trichloroethane	ND	0.0049	0.00049		mg/Kg-dry	1	9/2/2016
Trichloroethene	ND	0.0049	0.00019		mg/Kg-dry	1	9/2/2016
Vinyl chloride	ND	0.0049	0.00039		mg/Kg-dry	1	9/2/2016
Xylenes, Total	ND	0.015	0.00039		mg/Kg-dry	1	9/2/2016
Percent Moisture		2974			Date: 9/1/20	16	Analyst: <b>GH</b>
Percent Moisture	13.5	0.2	0.1	*	wt%	1	9/2/2016

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** September 09, 2016

September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

**Lab ID:** 16081298-002

**Date Printed:** 

**ANALYTICAL RESULTS** 

Client Sample ID: TW-2 @ 11'

**Collection Date:** 8/31/2016 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	SV	N5035/8260	 DB	Prep	Date: 8/31/2	2016	Analyst: <b>JNM</b>
Acetone	ND	0.053	0.0016	-1	mg/Kg-dry	1	9/6/2016
Benzene	0.00044	0.0035	0.00014	J	mg/Kg-dry	1	9/6/2016
Bromodichloromethane	ND	0.0035	0.00028		mg/Kg-dry	1	9/6/2016
Bromoform	ND	0.0035	0.00028		mg/Kg-dry	1	9/6/2016
Bromomethane	ND	0.0070	0.00035		mg/Kg-dry	1	9/6/2016
2-Butanone	ND	0.053	0.0011		mg/Kg-dry	1	9/6/2016
Carbon disulfide	0.00051	0.035	0.00014	J	mg/Kg-dry	1	9/6/2016
Carbon tetrachloride	ND	0.0035	0.00021		mg/Kg-dry	1	9/6/2016
Chlorobenzene	ND	0.0035	0.00014		mg/Kg-dry	1	9/6/2016
Chloroethane	ND	0.0070	0.00028		mg/Kg-dry	1	9/6/2016
Chloroform	ND	0.0035	0.00014		mg/Kg-dry	1	9/6/2016
Chloromethane	ND	0.0070	0.00021		mg/Kg-dry	1	9/6/2016
Dibromochloromethane	ND	0.0035	0.00028		mg/Kg-dry	1	9/6/2016
1,1-Dichloroethane	ND	0.0035	0.00021		mg/Kg-dry	1	9/6/2016
1,2-Dichloroethane	ND	0.0035	0.00042		mg/Kg-dry	1	9/6/2016
1,1-Dichloroethene	ND	0.0035	0.00021		mg/Kg-dry	1	9/6/2016
cis-1,2-Dichloroethene	ND	0.0035	0.00021		mg/Kg-dry	1	9/6/2016
trans-1,2-Dichloroethene	ND	0.0035	0.00021		mg/Kg-dry	1	9/6/2016
1,2-Dichloropropane	ND	0.0035	0.00028		mg/Kg-dry	1	9/6/2016
cis-1,3-Dichloropropene	ND	0.0014	0.00014		mg/Kg-dry	1	9/6/2016
trans-1,3-Dichloropropene	ND	0.0014	0.00021		mg/Kg-dry	1	9/6/2016
Ethylbenzene	ND	0.0035	0.00007		mg/Kg-dry	1	9/6/2016
2-Hexanone	ND	0.014	0.00056		mg/Kg-dry	1	9/6/2016
4-Methyl-2-pentanone	ND	0.014	0.00021		mg/Kg-dry	1	9/6/2016
Methylene chloride	ND	0.0070	0.00056		mg/Kg-dry	1	9/6/2016
Methyl tert-butyl ether	ND	0.0035	0.00014		mg/Kg-dry	1	9/6/2016
Styrene	ND	0.0035	0.00014		mg/Kg-dry	1	9/6/2016
1,1,2,2-Tetrachloroethane	ND	0.0035	0.00014		mg/Kg-dry	1	9/6/2016
Tetrachloroethene	ND	0.0035	0.00021		mg/Kg-dry	1	9/6/2016
Toluene	0.00046	0.0035	0.00014	J	mg/Kg-dry	1	9/6/2016
1,1,1-Trichloroethane	ND	0.0035	0.00014		mg/Kg-dry	1	9/6/2016
1,1,2-Trichloroethane	ND	0.0035	0.00035		mg/Kg-dry	1	9/6/2016
Trichloroethene	ND	0.0035	0.00014		mg/Kg-dry	1	9/6/2016
Vinyl chloride	ND	0.0035	0.00028		mg/Kg-dry	1	9/6/2016
Xylenes, Total	ND	0.011	0.00028		mg/Kg-dry	1	9/6/2016
Percent Moisture	D2	2974			Date: 9/1/20	16	Analyst: <b>GH</b>
Percent Moisture	6.7	0.2	0.1	*	wt%	1	9/2/2016

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Accreditations; IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

September 09, 2016 **Date Reported:** 

ANALYTICAL RESULTS

**Collection Date:** 8/31/2016 11:00:00 AM

**Date Printed:** September 09, 2016

Lab ID:

Xylenes, Total

**Qualifiers:** 

**Percent Moisture** 

Percent Moisture

**CLIENT:** Apex Companies, LLC Work Order: 16081298 Revision 0

16081298-003

PECO-216-78, Bright Cleaners-Franklin Centre, 7249

**Project:** 

Matrix: SOIL

Client Sample ID: TW-3 @ 12'

**Analyses** Result **RL MDL** Qualifier Units DF **Date Analyzed** Volatile Organic Compounds by GC/MS SW5035/8260B Prep Date: 8/31/2016 Analyst: JNM Acetone ND 0.058 0.0018 9/6/2016 mg/Kg-dry 0.00045 0.0039 0.00015 9/6/2016 Benzene mg/Kg-dry 1 0.0039 1 Bromodichloromethane ND 0.00031 9/6/2016 mg/Kg-dry 0.0039 Bromoform ND 0.00031 mg/Kg-dry 1 9/6/2016 Bromomethane ND 0.0077 0.00039 mg/Kg-dry 1 9/6/2016 2-Butanone ND 0.058 0.0012 mg/Kg-dry 1 9/6/2016 Carbon disulfide ND 0.039 0.00015 mg/Kg-dry 1 9/6/2016 Carbon tetrachloride ND 0.0039 0.00023 1 9/6/2016 mg/Kg-dry Chlorobenzene ND 0.0039 0.00015 mg/Kg-dry 1 9/6/2016 Chloroethane ND 0.0077 0.00031 mg/Kg-dry 1 9/6/2016 Chloroform ND 0.0039 0.00015 1 9/6/2016 mg/Kg-dry ND 0.0077 1 Chloromethane 0.00023 mg/Kg-dry 9/6/2016 ND 0.0039 0.00031 Dibromochloromethane mg/Kg-dry 9/6/2016 ND 0.0039 1,1-Dichloroethane 0.00023 mg/Kg-dry 1 9/6/2016 1,2-Dichloroethane ND 0.0039 0.00046 mg/Kg-dry 1 9/6/2016 1,1-Dichloroethene ND 0.0039 0.00023 mg/Kg-dry 1 9/6/2016 cis-1,2-Dichloroethene ND 0.0039 0.00023 mg/Kg-dry 1 9/6/2016 trans-1,2-Dichloroethene ND 0.0039 0.00023 mg/Kg-dry 1 9/6/2016 9/6/2016 ND 0.0039 0.00031 1 1,2-Dichloropropane mg/Kg-dry cis-1,3-Dichloropropene ND 0.0015 0.00015 mg/Kg-dry 1 9/6/2016 ND 0.0015 trans-1,3-Dichloropropene 0.00023 mg/Kg-dry 1 9/6/2016 Ethylbenzene ND 0.0039 0.000077 1 9/6/2016 mg/Kg-dry ND 0.015 0.00062 1 2-Hexanone mg/Kg-dry 9/6/2016 ND 0.015 0.00023 1 4-Methyl-2-pentanone mg/Kg-dry 9/6/2016 Methylene chloride ND 0.0077 0.00062 mg/Kg-dry 1 9/6/2016 Methyl tert-butyl ether ND 0.0039 0.00015 mg/Kg-dry 1 9/6/2016 Styrene ND 0.0039 0.00015 mg/Kg-dry 1 9/6/2016 1,1,2,2-Tetrachloroethane ND 0.0039 0.00015 mg/Kg-dry 1 9/6/2016 ND Tetrachloroethene 0.0039 0.00023 mg/Kg-dry 1 9/6/2016 Toluene 0.00041 0.0039 0.00015 mg/Kg-dry 1 9/6/2016 1,1,1-Trichloroethane ND 0.0039 0.00015 mg/Kg-dry 1 9/6/2016 ND 0.0039 1 1,1,2-Trichloroethane 0.00039 mg/Kg-dry 9/6/2016 Trichloroethene ND 0.0039 0.00015 1 9/6/2016 mg/Kg-dry ND Vinyl chloride 0.0039 0.00031 1 9/6/2016 mg/Kg-dry mg/Kg-dry

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

ND

11.1

0.012

0.2

D2974

HT - Sample received past holding time

\* - Non-accredited parameter

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

Prep Date: 9/1/2016

wt%

9/6/2016

9/2/2016

Analyst: GH

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

H - Holding time exceeded

0.00031

0.1

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Date Reported: September 09, 2016

**ANALYTICAL RESULTS** 

**Collection Date:** 8/31/2016 11:15:00 AM

Client Sample ID: TW-1

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

Matrix: AQUEOUS 16081298-004 Lab ID:

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	S	W8260B (S	W5030B)	Prep [	Date:		Analyst: RRS
Acetone	ND	0.020	0.0031		mg/L	1	9/1/2016
Benzene	ND	0.00050	0.0002		mg/L	1	9/1/2016
Bromodichloromethane	ND	0.00050	0.0002		mg/L	1	9/1/2016
Bromoform	ND	0.0010	0.0003		mg/L	1	9/1/2016
Bromomethane	ND	0.0050	0.002		mg/L	1	9/1/2016
2-Butanone	ND	0.010	0.0016		mg/L	1	9/1/2016
Carbon disulfide	ND	0.0050	0.0003		mg/L	1	9/1/2016
Carbon tetrachloride	ND	0.00050	0.001		mg/L	1	9/1/2016
Chlorobenzene	ND	0.00050	0.0002		mg/L	1	9/1/2016
Chloroethane	ND	0.0050	0.0005		mg/L	1	9/1/2016
Chloroform	ND	0.00050	0.0001		mg/L	1	9/1/2016
Chloromethane	ND	0.0050	0.0003		mg/L	1	9/1/2016
Dibromochloromethane	ND	0.00050	0.0002		mg/L	1	9/1/2016
1,1-Dichloroethane	ND	0.00050	0.0002		mg/L	1	9/1/2016
1,2-Dichloroethane	ND	0.0010	0.0002		mg/L	1	9/1/2016
1,1-Dichloroethene	ND	0.0010	0.0004		mg/L	1	9/1/2016
cis-1,2-Dichloroethene	ND	0.0010	0.0002		mg/L	1	9/1/2016
trans-1,2-Dichloroethene	ND	0.0010	0.0005		mg/L	1	9/1/2016
1,2-Dichloropropane	ND	0.0010	0.0001		mg/L	1	9/1/2016
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	9/1/2016
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	9/1/2016
Ethylbenzene	ND	0.00050	0.0003		mg/L	1	9/1/2016
2-Hexanone	ND	0.010	0.0002		mg/L	1	9/1/2016
4-Methyl-2-pentanone	ND	0.010	0.0007		mg/L	1	9/1/2016
Methylene chloride	ND	0.0050	0.0002		mg/L	1	9/1/2016
Methyl tert-butyl ether	ND	0.00050	0.0003		mg/L	1	9/1/2016
Styrene	ND	0.0010	0.0003		mg/L	1	9/1/2016
1,1,2,2-Tetrachloroethane	ND	0.00050	0.0001		mg/L	1	9/1/2016
Tetrachloroethene	ND	0.0010	0.0003		mg/L	1	9/1/2016
Toluene	ND	0.00050	0.0004		mg/L	1	9/1/2016
1,1,1-Trichloroethane	ND	0.0010	0.0002		mg/L	1	9/1/2016
1,1,2-Trichloroethane	ND	0.00050	0.0001		mg/L	1	9/1/2016
Trichloroethene	ND	0.0010	0.0003		mg/L	1	9/1/2016
Vinyl chloride	ND	0.0010	0.0003		mg/L	1	9/1/2016
Xylenes, Total	ND	0.0030	0.001		mg/L	1	9/1/2016

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

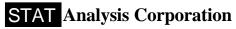
Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: September 09, 2016

**ANALYTICAL RESULTS** 

**Collection Date:** 8/31/2016 12:40:00 PM

**Client Sample ID:** TW-3

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

Matrix: AQUEOUS Lab ID: 16081298-005

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	s	W8260B (S	W5030B)	Prep	Date:		Analyst: RRS
Acetone	0.012	0.020	0.0031	J	mg/L	1	9/1/2016
Benzene	0.00024	0.00050	0.0002	J	mg/L	1	9/1/2016
Bromodichloromethane	ND	0.00050	0.0002		mg/L	1	9/1/2016
Bromoform	ND	0.0010	0.0003		mg/L	1	9/1/2016
Bromomethane	ND	0.0050	0.002		mg/L	1	9/1/2016
2-Butanone	ND	0.010	0.0016		mg/L	1	9/1/2016
Carbon disulfide	0.00034	0.0050	0.0003	J	mg/L	1	9/1/2016
Carbon tetrachloride	ND	0.00050	0.001		mg/L	1	9/1/2016
Chlorobenzene	ND	0.00050	0.0002		mg/L	1	9/1/2016
Chloroethane	ND	0.0050	0.0005		mg/L	1	9/1/2016
Chloroform	ND	0.00050	0.0001		mg/L	1	9/1/2016
Chloromethane	ND	0.0050	0.0003		mg/L	1	9/1/2016
Dibromochloromethane	ND	0.00050	0.0002		mg/L	1	9/1/2016
1,1-Dichloroethane	ND	0.00050	0.0002		mg/L	1	9/1/2016
1,2-Dichloroethane	ND	0.0010	0.0002		mg/L	1	9/1/2016
1,1-Dichloroethene	ND	0.0010	0.0004		mg/L	1	9/1/2016
cis-1,2-Dichloroethene	ND	0.0010	0.0002		mg/L	1	9/1/2016
trans-1,2-Dichloroethene	ND	0.0010	0.0005		mg/L	1	9/1/2016
1,2-Dichloropropane	ND	0.0010	0.0001		mg/L	1	9/1/2016
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	9/1/2016
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	9/1/2016
Ethylbenzene	ND	0.00050	0.0003		mg/L	1	9/1/2016
2-Hexanone	ND	0.010	0.0002		mg/L	1	9/1/2016
4-Methyl-2-pentanone	ND	0.010	0.0007		mg/L	1	9/1/2016
Methylene chloride	ND	0.0050	0.0002		mg/L	1	9/1/2016
Methyl tert-butyl ether	ND	0.00050	0.0003		mg/L	1	9/1/2016
Styrene	ND	0.0010	0.0003		mg/L	1	9/1/2016
1,1,2,2-Tetrachloroethane	ND	0.00050	0.0001		mg/L	1	9/1/2016
Tetrachloroethene	ND	0.0010	0.0003		mg/L	1	9/1/2016
Toluene	ND	0.00050	0.0004		mg/L	1	9/1/2016
1,1,1-Trichloroethane	ND	0.0010	0.0002		mg/L	1	9/1/2016
1,1,2-Trichloroethane	ND	0.00050	0.0001		mg/L	1	9/1/2016
Trichloroethene	ND	0.0010	0.0003		mg/L	1	9/1/2016
Vinyl chloride	ND	0.0010	0.0003		mg/L	1	9/1/2016
Xylenes, Total	ND	0.0030	0.001		mg/L	1	9/1/2016

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

2242 West Harrison St., Suite 200, Chicago, IL 60612-3766

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: September 09, 2016

September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

16081298-006 Lab ID:

**Date Printed:** 

**ANALYTICAL RESULTS** 

Client Sample ID: SV-1

**Collection Date:** 8/31/2016 12:28:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in Air	by GC/MS TO	-15		Prep	Date: <b>9/2/2</b>	016	Analyst: <b>NLM</b>
1,1,1-Trichloroethane	ND	0.46	0.024		ppbv	1	9/6/2016
1,1,2,2-Tetrachloroethane	ND	0.46	0.032		ppbv	1	9/6/2016
1,1,2-Trichloroethane	ND	0.46	0.045		ppbv	1	9/6/2016
1,1-Dichloroethane	ND	0.46	0.022		ppbv	1	9/6/2016
1,1-Dichloroethene	ND	0.46	0.029		ppbv	1	9/6/2016
1,2,4-Trichlorobenzene	0.25	0.46	0.1	J	ppbv	1	9/6/2016
1,2,4-Trimethylbenzene	1.0	0.46	0.042		ppbv	1	9/6/2016
1,2-Dibromoethane	ND	0.46	0.052		ppbv	1	9/6/2016
1,2-Dichlorobenzene	0.069	0.46	0.038	J	ppbv	1	9/6/2016
1,2-Dichloroethane	ND	0.46	0.053		ppbv	1	9/6/2016
1,2-Dichloropropane	ND	0.46	0.032		ppbv	1	9/6/2016
1,3,5-Trimethylbenzene	0.28	0.46	0.032	J	ppbv	1	9/6/2016
1,3-Butadiene	ND	0.46	0.059		ppbv	1	9/6/2016
1,3-Dichlorobenzene	0.32	0.46	0.039	J	ppbv	1	9/6/2016
1,4-Dichlorobenzene	ND	0.46	0.049		ppbv	1	9/6/2016
1,4-Dioxane	ND	1.2	0.13		ppbv	1	9/6/2016
2-Butanone	2.3	1.2	0.11		ppbv	1	9/6/2016
2-Hexanone	0.76	2.3	0.13	J	ppbv	1	9/6/2016
4-Ethyltoluene	0.28	0.46	0.048	J	ppbv	1	9/6/2016
4-Methyl-2-pentanone	3.0	2.3	0.069		ppbv	1	9/6/2016
Acetone	34	4.6	0.16	*	ppbv	1	9/6/2016
Benzene	0.92	0.46	0.033		ppbv	1	9/6/2016
Benzyl chloride	ND	1.2	0.46		ppbv	1	9/6/2016
Bromodichloromethane	ND	0.46	0.032		ppbv	1	9/6/2016
Bromoform	ND	1.2	0.024		ppbv	1	9/6/2016
Bromomethane	0.14	1.2	0.054	J	ppbv	1	9/6/2016
Carbon disulfide	0.16	0.46	0.12	J	ppbv	1	9/6/2016
Carbon tetrachloride	ND	0.46	0.064		ppbv	1	9/6/2016
Chlorobenzene	ND	0.46	0.029		ppbv	1	9/6/2016
Chloroethane	ND	0.46	0.46		ppbv	1	9/6/2016
Chloroform	0.046	0.46	0.025	J	ppbv	1	9/6/2016
Chloromethane	ND	1.2	0.11		ppbv	1	9/6/2016
cis-1,2-Dichloroethene	0.44	0.46	0.034	J	ppbv	1	9/6/2016
cis-1,3-Dichloropropene	ND	0.46	0.054		ppbv	1	9/6/2016
Cyclohexane	0.71	0.46	0.098		ppbv	1	9/6/2016
Dibromochloromethane	ND	0.46	0.037		ppbv	1	9/6/2016
Dichlorodifluoromethane	0.46	0.46	0.015		ppbv	1	9/6/2016
Ethyl acetate	ND	1.2	0.092		ppbv	1	9/6/2016

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

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E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** September 09, 2016

**ANALYTICAL RESULTS** 

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

**Lab ID:** 16081298-006

**Client Sample ID:** SV-1

**Collection Date:** 8/31/2016 12:28:00 PM

Matrix: AIR

Analyses	Resul	t RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in	Air by GC/MS	TO-15		Prep	Date: 9/2/2	016	Analyst: <b>NLM</b>
Ethylbenzene	0.90	0.46	0.036		ppbv	1	9/6/2016
Freon-113	ND	0.46	0.017		ppbv	1	9/6/2016
Freon-114	ND	2.3	0.066		ppbv	1	9/6/2016
Heptane	1.3	0.46	0.045		ppbv	1	9/6/2016
Hexachlorobutadiene	0.069	0.46	0.052	J	ppbv	1	9/6/2016
Hexane	1.8	1.2	0.032		ppbv	1	9/6/2016
Isopropyl Alcohol	130	58	4.5		ppbv	25	9/7/2016
m,p-Xylene	2.0	0.92	0.068		ppbv	1	9/6/2016
Methyl tert-butyl ether	0.069	0.46	0.038	J	ppbv	1	9/6/2016
Methylene chloride	0.28	4.6	0.25	J	ppbv	1	9/6/2016
Naphthalene	0.53	0.46	0.13		ppbv	1	9/6/2016
o-Xylene	0.83	0.46	0.029		ppbv	1	9/6/2016
Propene	3.7	4.6	0.46	J	ppbv	1	9/6/2016
Styrene	0.18	0.46	0.049	J	ppbv	1	9/6/2016
Tetrachloroethene	1800	12	0.83		ppbv	25	9/7/2016
Tetrahydrofuran	2.8	1.2	0.1		ppbv	1	9/6/2016
Toluene	22	0.46	0.052		ppbv	1	9/6/2016
trans-1,2-Dichloroethene	ND	0.46	0.032		ppbv	1	9/6/2016
trans-1,3-Dichloropropene	ND	0.46	0.063		ppbv	1	9/6/2016
Trichloroethene	4.0	0.46	0.035		ppbv	1	9/6/2016
Trichlorofluoromethane	0.28	0.46	0.029	J	ppbv	1	9/6/2016
Vinyl acetate	ND	4.6	0.062		ppbv	1	9/6/2016
Vinyl chloride	ND	0.46	0.039		ppbv	1	9/6/2016
Xylenes, Total	2.9	1.4	0.096		ppbv	1	9/6/2016
olatile Organic Compounds in	Air by GC/MS	TO-15		Prep	Date: 9/2/2	016	Analyst: <b>NLM</b>
1,1,1-Trichloroethane	ND	0.0025	0.00013		mg/m³	1	9/6/2016
1,1,2,2-Tetrachloroethane	ND	0.0032	0.00022		mg/m³	1	9/6/2016
1,1,2-Trichloroethane	ND	0.0025	0.00024		mg/m³	1	9/6/2016
1,1-Dichloroethane	ND	0.0019	0.00009		mg/m³	1	9/6/2016
1,1-Dichloroethene	ND	0.0018	0.00012		mg/m³	1	9/6/2016
1,2,4-Trichlorobenzene	0.0019	0.0034	0.00076	J	mg/m³	1	9/6/2016
1,2,4-Trimethylbenzene	0.0051	0.0023	0.00021		mg/m³	1	9/6/2016
1,2-Dibromoethane	ND	0.0035	0.0004		mg/m³	1	9/6/2016
1,2-Dichlorobenzene	0.00042	0.0028	0.00023	J	mg/m³	1	9/6/2016
1,2-Dichloroethane	ND	0.0019	0.00021		mg/m³	1	9/6/2016
1,2-Dichloropropane	ND	0.0021	0.00015		mg/m³	1	9/6/2016
1,3,5-Trimethylbenzene	0.0014	0.0023	0.00016	J	mg/m³	1	9/6/2016
1,3-Butadiene	ND	0.0010	0.00013		mg/m³	1	9/6/2016

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

 $RL/\!MDL$  - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** September 09, 2016

**ANALYTICAL RESULTS** 

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

**Lab ID:** 16081298-006

**Client Sample ID:** SV-1

**Collection Date:** 8/31/2016 12:28:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	MDL Qualifier Units DF				
Volatile Organic Compounds i	in Air by GC/MS To	O-15		Prep	Date: <b>9/2/2</b>	016	Analyst: <b>NLM</b>	
1,3-Dichlorobenzene	0.0019	0.0028	0.00023	J	mg/m³	1	9/6/2016	
1,4-Dichlorobenzene	ND	0.0028	0.00029		mg/m³	1	9/6/2016	
1,4-Dioxane	ND	0.0041	0.00048		mg/m³	1	9/6/2016	
2-Butanone	0.0067	0.0034	0.00031		mg/m³	1	9/6/2016	
2-Hexanone	0.0031	0.0094	0.00051	J	mg/m³	1	9/6/2016	
4-Ethyltoluene	0.0014	0.0023	0.00024	J	mg/m³	1	9/6/2016	
4-Methyl-2-pentanone	0.012	0.0094	0.00028		mg/m³	1	9/6/2016	
Acetone	0.082	0.011	0.00039	*	mg/m³	1	9/6/2016	
Benzene	0.0029	0.0015	0.00011		mg/m³	1	9/6/2016	
Benzyl chloride	ND	0.0060	0.0024		mg/m³	1	9/6/2016	
Bromodichloromethane	ND	0.0031	0.00021		mg/m³	1	9/6/2016	
Bromoform	ND	0.012	0.00025		mg/m³	1	9/6/2016	
Bromomethane	0.00054	0.0045	0.00021	J	mg/m³	1	9/6/2016	
Carbon disulfide	0.00050	0.0014	0.00036	J	mg/m³	1	9/6/2016	
Carbon tetrachloride	ND	0.0029	0.00041		mg/m³	1	9/6/2016	
Chlorobenzene	ND	0.0021	0.00013		mg/m³	1	9/6/2016	
Chloroethane	ND	0.0012	0.0012		mg/m³	1	9/6/2016	
Chloroform	0.00022	0.0022	0.00012	J	mg/m³	1	9/6/2016	
Chloromethane	ND	0.0024	0.00024		mg/m³	1	9/6/2016	
cis-1,2-Dichloroethene	0.0017	0.0018	0.00013	J	mg/m³	1	9/6/2016	
cis-1,3-Dichloropropene	ND	0.0021	0.00025		mg/m³	1	9/6/2016	
Cyclohexane	0.0025	0.0016	0.00034		mg/m³	1	9/6/2016	
Dibromochloromethane	ND	0.0039	0.00032		mg/m³	1	9/6/2016	
Dichlorodifluoromethane	0.0023	0.0022	0.000074		mg/m³	1	9/6/2016	
Ethyl acetate	ND	0.0041	0.00033		mg/m³	1	9/6/2016	
Ethylbenzene	0.0039	0.0020	0.00016		mg/m³	1	9/6/2016	
Freon-113	ND	0.0035	0.00013		mg/m³	1	9/6/2016	
Freon-114	ND	0.016	0.00046		mg/m³	1	9/6/2016	
Heptane	0.0055	0.0019	0.00019		mg/m³	1	9/6/2016	
Hexachlorobutadiene	0.00074	0.0049	0.00055	J	mg/m³	1	9/6/2016	
Hexane	0.0064	0.0041	0.00011		mg/m³	1	9/6/2016	
Isopropyl Alcohol	0.31	0.14	0.011		mg/m³	25	9/7/2016	
m,p-Xylene	0.0088	0.0040	0.00029		mg/m³	1	9/6/2016	
Methyl tert-butyl ether	0.00025	0.0017	0.00014	J	mg/m³	1	9/6/2016	
Methylene chloride	0.00096	0.016	0.00086	J	mg/m³	1	9/6/2016	
Naphthalene	0.0028	0.0024	0.00069		mg/m³	1	9/6/2016	
o-Xylene	0.0036	0.0020	0.00013		mg/m³	1	9/6/2016	
Propene	0.0063	0.0079	0.00079	J	mg/m³	1	9/6/2016	

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

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R - RPD outside accepted recovery limits

E - Value above quantitation range



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**Date Reported:** September 09, 2016

ANALYTICAL RESULTS

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

**Lab ID:** 16081298-006

Client Sample ID: SV-1

**Collection Date:** 8/31/2016 12:28:00 PM

Matrix: AIR

Analyses	Resul	t RL	MDL	Qualifier	Units	DF	Date Analyzed	
Volatile Organic Compounds in Ai	r by GC/MS	TO-15		Prep	Date: <b>9/2/2</b>	016	Analyst: <b>NLM</b>	
Styrene	0.00078	0.0020	0.00021	J	mg/m³	1	9/6/2016	
Tetrachloroethene	12	0.078	0.0056		mg/m³	25	9/7/2016	
Tetrahydrofuran	0.0084	0.0034	0.00031		mg/m³	1	9/6/2016	
Toluene	0.081	0.0017	0.0002		mg/m³	1	9/6/2016	
trans-1,2-Dichloroethene	ND	0.0018	0.00013		mg/m³	1	9/6/2016	
trans-1,3-Dichloropropene	ND	0.0021	0.00028		mg/m³	1	9/6/2016	
Trichloroethene	0.022	0.0025	0.00019		mg/m³	1	9/6/2016	
Trichlorofluoromethane	0.0016	0.0026	0.00016	J	mg/m³	1	9/6/2016	
Vinyl acetate	ND	0.016	0.00022		mg/m³	1	9/6/2016	
Vinyl chloride	ND	0.0012	0.000099		mg/m³	1	9/6/2016	
Xylenes, Total	0.012	0.0060	0.00042		mg/m³	1	9/6/2016	

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Date Reported: September 09, 2016

**ANALYTICAL RESULTS** 

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

PECO-216-78, Bright Cleaners-Franklin Centre, 7249

Lab ID: 16081298-007

**Project:** 

Client Sample ID: SV-2

**Collection Date:** 8/31/2016 12:32:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units DF Date Analyzed				
Volatile Organic Compounds in Ai	r by GC/MS TO	-15		Prep	Date: <b>9/2/2</b>	016	Analyst: <b>NLM</b>		
1,1,1-Trichloroethane	ND	0.37	0.019		ppbv	1	9/6/2016		
1,1,2,2-Tetrachloroethane	ND	0.37	0.026		ppbv	1	9/6/2016		
1,1,2-Trichloroethane	ND	0.37	0.036		ppbv	1	9/6/2016		
1,1-Dichloroethane	ND	0.37	0.018		ppbv	1	9/6/2016		
1,1-Dichloroethene	ND	0.37	0.023		ppbv	1	9/6/2016		
1,2,4-Trichlorobenzene	0.13	0.37	0.082	J	ppbv	1	9/6/2016		
1,2,4-Trimethylbenzene	0.80	0.37	0.034		ppbv	1	9/6/2016		
1,2-Dibromoethane	ND	0.37	0.042		ppbv	1	9/6/2016		
1,2-Dichlorobenzene	ND	0.37	0.031		ppbv	1	9/6/2016		
1,2-Dichloroethane	ND	0.37	0.043		ppbv	1	9/6/2016		
1,2-Dichloropropane	ND	0.37	0.025		ppbv	1	9/6/2016		
1,3,5-Trimethylbenzene	0.19	0.37	0.026	J	ppbv	1	9/6/2016		
1,3-Butadiene	ND	0.37	0.048		ppbv	1	9/6/2016		
1,3-Dichlorobenzene	0.19	0.37	0.031	J	ppbv	1	9/6/2016		
1,4-Dichlorobenzene	ND	0.37	0.039		ppbv	1	9/6/2016		
1,4-Dioxane	0.74	0.93	0.11	J	ppbv	1	9/6/2016		
2-Butanone	2.6	0.93	0.085		ppbv	1	9/6/2016		
2-Hexanone	0.70	1.9	0.1	J	ppbv	1	9/6/2016		
4-Ethyltoluene	0.19	0.37	0.039	J	ppbv	1	9/6/2016		
4-Methyl-2-pentanone	1.5	1.9	0.056	J	ppbv	1	9/6/2016		
Acetone	61	3.7	0.13	*	ppbv	1	9/6/2016		
Benzene	0.45	0.37	0.027		ppbv	1	9/6/2016		
Benzyl chloride	ND	0.93	0.37		ppbv	1	9/6/2016		
Bromodichloromethane	ND	0.37	0.025		ppbv	1	9/6/2016		
Bromoform	ND	0.93	0.02		ppbv	1	9/6/2016		
Bromomethane	0.13	0.93	0.043	J	ppbv	1	9/6/2016		
Carbon disulfide	ND	0.37	0.093		ppbv	1	9/6/2016		
Carbon tetrachloride	ND	0.37	0.052		ppbv	1	9/6/2016		
Chlorobenzene	ND	0.37	0.023		ppbv	1	9/6/2016		
Chloroethane	ND	0.37	0.37		ppbv	1	9/6/2016		
Chloroform	0.074	0.37	0.02	J	ppbv	1	9/6/2016		
Chloromethane	ND	0.93	0.092		ppbv	1	9/6/2016		
cis-1,2-Dichloroethene	4.5	0.37	0.027		ppbv	1	9/6/2016		
cis-1,3-Dichloropropene	ND	0.37	0.044		ppbv	1	9/6/2016		
Cyclohexane	0.37	0.37	0.079		ppbv	1	9/6/2016		
Dibromochloromethane	ND	0.37	0.03		ppbv	1	9/6/2016		
Dichlorodifluoromethane	0.46	0.37	0.012		ppbv	1	9/6/2016		
Ethyl acetate	ND	0.93	0.074		ppbv	1	9/6/2016		

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

2242 West Harrison St., Suite 200, Chicago, IL 60612-3766

Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com

Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** September 09, 2016

**ANALYTICAL RESULTS** 

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

**Lab ID:** 16081298-007

Client Sample ID: SV-2

**Collection Date:** 8/31/2016 12:32:00 PM

Matrix: AIR

Analyses	Resul	t RL	MDL	Qualifier	ualifier Units DF Date An				
Volatile Organic Compounds in	Air by GC/MS	TO-15		Prep	Date: 9/2/2	016	Analyst: <b>NLM</b>		
Ethylbenzene	0.65	0.37	0.029		ppbv	1	9/6/2016		
Freon-113	0.074	0.37	0.014	J	ppbv	1	9/6/2016		
Freon-114	ND	1.9	0.053		ppbv	1	9/6/2016		
Heptane	0.65	0.37	0.037		ppbv	1	9/6/2016		
Hexachlorobutadiene	ND	0.37	0.042		ppbv	1	9/6/2016		
Hexane	0.76	0.93	0.026	J	ppbv	1	9/6/2016		
Isopropyl Alcohol	43	1.9	0.15		ppbv	1	9/6/2016		
m,p-Xylene	1.4	0.74	0.055		ppbv	1	9/6/2016		
Methyl tert-butyl ether	0.093	0.37	0.03	J	ppbv	1	9/6/2016		
Methylene chloride	ND	3.7	0.2		ppbv	1	9/6/2016		
Naphthalene	0.33	0.37	0.11	J	ppbv	1	9/6/2016		
o-Xylene	0.56	0.37	0.024		ppbv	1	9/6/2016		
Propene	2.1	3.7	0.37	J	ppbv	1	9/6/2016		
Styrene	0.074	0.37	0.039	J	ppbv	1	9/6/2016		
Tetrachloroethene	6500	190	13		ppbv	500	9/7/2016		
Tetrahydrofuran	1.4	0.93	0.084		ppbv	1	9/6/2016		
Toluene	12	0.37	0.042		ppbv	1	9/6/2016		
trans-1,2-Dichloroethene	0.037	0.37	0.025	J	ppbv	1	9/6/2016		
trans-1,3-Dichloropropene	ND	0.37	0.05		ppbv	1	9/6/2016		
Trichloroethene	7.6	0.37	0.028		ppbv	1	9/6/2016		
Trichlorofluoromethane	0.28	0.37	0.023	J	ppbv	1	9/6/2016		
Vinyl acetate	ND	3.7	0.05		ppbv	1	9/6/2016		
Vinyl chloride	ND	0.37	0.031		ppbv	1	9/6/2016		
Xylenes, Total	1.9	1.1	0.078		ppbv	1	9/6/2016		
/olatile Organic Compounds in	Air by GC/MS	TO-15		Prep	Date: 9/2/2	016	Analyst: <b>NLM</b>		
1,1,1-Trichloroethane	ND	0.0020	0.00011		mg/m³	1	9/6/2016		
1,1,2,2-Tetrachloroethane	ND	0.0025	0.00018		mg/m³	1	9/6/2016		
1,1,2-Trichloroethane	ND	0.0020	0.0002		mg/m³	1	9/6/2016		
1,1-Dichloroethane	ND	0.0015	0.000073		mg/m³	1	9/6/2016		
1,1-Dichloroethene	ND	0.0015	0.000093		mg/m³	1	9/6/2016		
1,2,4-Trichlorobenzene	0.00096	0.0028	0.00061	J	mg/m³	1	9/6/2016		
1,2,4-Trimethylbenzene	0.0039	0.0018	0.00017		mg/m³	1	9/6/2016		
1,2-Dibromoethane	ND	0.0029	0.00032		mg/m³	1	9/6/2016		
1,2-Dichlorobenzene	ND	0.0022	0.00019		mg/m³	1	9/6/2016		
1,2-Dichloroethane	ND	0.0015	0.00017		mg/m³	1	9/6/2016		
1,2-Dichloropropane	ND	0.0017	0.00012		mg/m³	1	9/6/2016		
1,3,5-Trimethylbenzene	0.00091	0.0018	0.00013	J	mg/m³	1	9/6/2016		
1,3-Butadiene	ND	0.00082	0.00011		mg/m³	1	9/6/2016		

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

 $\boldsymbol{B}$  - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

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Date Reported: September 09, 2016

**ANALYTICAL RESULTS** 

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

16081298-007 Lab ID:

Client Sample ID: SV-2

**Collection Date:** 8/31/2016 12:32:00 PM

Matrix: AIR

Volatile Organic Compounds in Air by GC/ 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane	0.0011 ND 0.0027 0.0077 0.0029 0.00091 0.0061	TO-15 0.0022 0.0022 0.0033 0.0027 0.0076	0.00019 0.00024 0.00039 0.00025	Prep J J	Date: <b>9/2/2</b> mg/m³ mg/m³ mg/m³	1 1	Analyst: <b>NLM</b> 9/6/2016 9/6/2016
1,3-Dichlorobenzene 1,4-Dichlorobenzene	0.0011 ND 0.0027 0.0077 0.0029 0.00091	0.0022 0.0033 0.0027 0.0076	0.00024 0.00039 0.00025	J	mg/m³ mg/m³	1 1	9/6/2016
,	0.0027 0.0077 0.0029 0.00091	0.0033 0.0027 0.0076	0.00039 0.00025	J	Ū		9/6/2016
1,4-Dioxane	0.0077 0.0029 0.00091	0.0027 0.0076	0.00025	J	ma/m³	4	
	0.0029 0.00091	0.0076			9,	1	9/6/2016
2-Butanone	0.00091		0.00044		mg/m³	1	9/6/2016
2-Hexanone			0.00041	J	mg/m³	1	9/6/2016
4-Ethyltoluene	0.0061	0.0018	0.00019	J	mg/m³	1	9/6/2016
4-Methyl-2-pentanone	0.000.	0.0076	0.00023	J	mg/m³	1	9/6/2016
Acetone	0.14	0.0088	0.00031	*	mg/m³	1	9/6/2016
Benzene	0.0014	0.0012	0.000085		mg/m³	1	9/6/2016
Benzyl chloride	ND	0.0048	0.0019		mg/m³	1	9/6/2016
Bromodichloromethane	ND	0.0025	0.00017		mg/m³	1	9/6/2016
Bromoform	ND	0.0096	0.0002		mg/m³	1	9/6/2016
Bromomethane	0.00050	0.0036	0.00017	J	mg/m³	1	9/6/2016
Carbon disulfide	ND	0.0012	0.00029		mg/m³	1	9/6/2016
Carbon tetrachloride	ND	0.0023	0.00033		mg/m³	1	9/6/2016
Chlorobenzene	ND	0.0017	0.00011		mg/m³	1	9/6/2016
Chloroethane	ND	0.00098	0.00098		mg/m³	1	9/6/2016
Chloroform	0.00036	0.0018	0.000099	J	mg/m³	1	9/6/2016
Chloromethane	ND	0.0019	0.00019		mg/m³	1	9/6/2016
cis-1,2-Dichloroethene	0.018	0.0015	0.00011		mg/m³	1	9/6/2016
cis-1,3-Dichloropropene	ND	0.0017	0.0002		mg/m³	1	9/6/2016
Cyclohexane	0.0013	0.0012	0.00027		mg/m³	1	9/6/2016
Dibromochloromethane	ND	0.0032	0.00025		mg/m³	1	9/6/2016
Dichlorodifluoromethane	0.0023	0.0018	0.00006		mg/m³	1	9/6/2016
Ethyl acetate	ND	0.0033	0.00027		mg/m³	1	9/6/2016
Ethylbenzene	0.0028	0.0016	0.00013		mg/m³	1	9/6/2016
Freon-113	0.00057	0.0028	0.00011	J	mg/m³	1	9/6/2016
Freon-114	ND	0.013	0.00037		mg/m³	1	9/6/2016
Heptane	0.0027	0.0015	0.00015		mg/m³	1	9/6/2016
Hexachlorobutadiene	ND	0.0040	0.00045		mg/m³	1	9/6/2016
Hexane	0.0027	0.0033	0.000092	J	mg/m³	1	9/6/2016
Isopropyl Alcohol	0.11	0.0046	0.00036		mg/m³	1	9/6/2016
m,p-Xylene	0.0060	0.0032	0.00024		mg/m³	1	9/6/2016
Methyl tert-butyl ether	0.00033	0.0013	0.00011	J	mg/m³	1	9/6/2016
Methylene chloride	ND	0.013	0.00069		mg/m³	1	9/6/2016
Naphthalene	0.0018	0.0019	0.00056	J	mg/m³	1	9/6/2016
o-Xylene	0.0024	0.0016	0.0001		mg/m³	1	9/6/2016
Propene	0.0036	0.0064	0.00064	J	mg/m³	1	9/6/2016

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

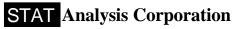
Qualifiers:

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** September 09, 2016

September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

**Lab ID:** 16081298-007

**Date Printed:** 

**ANALYTICAL RESULTS** 

**Client Sample ID:** SV-2

**Collection Date:** 8/31/2016 12:32:00 PM

Matrix: AIR

Analyses	Resul	t RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in A	Air by GC/MS	TO-15		Prep	Date: 9/2/2	016	Analyst: <b>NLM</b>
Styrene	0.00032	0.0016	0.00017	J	mg/m³	1	9/6/2016
Tetrachloroethene	44	1.3	0.091		mg/m³	500	9/7/2016
Tetrahydrofuran	0.0041	0.0027	0.00025		mg/m³	1	9/6/2016
Toluene	0.046	0.0014	0.00016		mg/m³	1	9/6/2016
trans-1,2-Dichloroethene	0.00015	0.0015	0.0001	J	mg/m³	1	9/6/2016
trans-1,3-Dichloropropene	ND	0.0017	0.00023		mg/m³	1	9/6/2016
Trichloroethene	0.041	0.0020	0.00015		mg/m³	1	9/6/2016
Trichlorofluoromethane	0.0016	0.0021	0.00013	J	mg/m³	1	9/6/2016
Vinyl acetate	ND	0.013	0.00018		mg/m³	1	9/6/2016
Vinyl chloride	ND	0.00095	80000.0		mg/m³	1	9/6/2016
Xylenes, Total	0.0085	0.0048	0.00034		mg/m³	1	9/6/2016

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

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Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

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Date Reported: September 09, 2016

September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

Lab ID: 16081298-008

**Date Printed:** 

**ANALYTICAL RESULTS** 

**Client Sample ID:** SV-3

**Collection Date:** 8/31/2016 12:34:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units DF Date Analyzed				
Volatile Organic Compounds in	Air by GC/MS TO	-15		Prep	Date: <b>9/2/2</b>	016	Analyst: <b>NLM</b>		
1,1,1-Trichloroethane	ND	0.51	0.027		ppbv	1	9/6/2016		
1,1,2,2-Tetrachloroethane	ND	0.51	0.035		ppbv	1	9/6/2016		
1,1,2-Trichloroethane	ND	0.51	0.049		ppbv	1	9/6/2016		
1,1-Dichloroethane	ND	0.51	0.025		ppbv	1	9/6/2016		
1,1-Dichloroethene	ND	0.51	0.032		ppbv	1	9/6/2016		
1,2,4-Trichlorobenzene	0.15	0.51	0.11	J	ppbv	1	9/6/2016		
1,2,4-Trimethylbenzene	1.5	0.51	0.046		ppbv	1	9/6/2016		
1,2-Dibromoethane	ND	0.51	0.057		ppbv	1	9/6/2016		
1,2-Dichlorobenzene	ND	0.51	0.042		ppbv	1	9/6/2016		
1,2-Dichloroethane	ND	0.51	0.059		ppbv	1	9/6/2016		
1,2-Dichloropropane	ND	0.51	0.035		ppbv	1	9/6/2016		
1,3,5-Trimethylbenzene	0.41	0.51	0.035	J	ppbv	1	9/6/2016		
1,3-Butadiene	ND	0.51	0.065		ppbv	1	9/6/2016		
1,3-Dichlorobenzene	0.82	0.51	0.043		ppbv	1	9/6/2016		
1,4-Dichlorobenzene	ND	0.51	0.054		ppbv	1	9/6/2016		
1,4-Dioxane	0.66	1.3	0.15	J	ppbv	1	9/6/2016		
2-Butanone	4.1	1.3	0.12		ppbv	1	9/6/2016		
2-Hexanone	1.2	2.6	0.14	J	ppbv	1	9/6/2016		
4-Ethyltoluene	0.33	0.51	0.053	J	ppbv	1	9/6/2016		
4-Methyl-2-pentanone	2.3	2.6	0.077	J	ppbv	1	9/6/2016		
Acetone	44	5.1	0.18	*	ppbv	1	9/6/2016		
Benzene	1.1	0.51	0.037		ppbv	1	9/6/2016		
Benzyl chloride	ND	1.3	0.51		ppbv	1	9/6/2016		
Bromodichloromethane	ND	0.51	0.035		ppbv	1	9/6/2016		
Bromoform	ND	1.3	0.027		ppbv	1	9/6/2016		
Bromomethane	0.20	1.3	0.06	J	ppbv	1	9/6/2016		
Carbon disulfide	0.15	0.51	0.13	J	ppbv	1	9/6/2016		
Carbon tetrachloride	ND	0.51	0.071		ppbv	1	9/6/2016		
Chlorobenzene	ND	0.51	0.032		ppbv	1	9/6/2016		
Chloroethane	ND	0.51	0.51		ppbv	1	9/6/2016		
Chloroform	0.13	0.51	0.028	J	ppbv	1	9/6/2016		
Chloromethane	ND	1.3	0.13		ppbv	1	9/6/2016		
cis-1,2-Dichloroethene	8.1	0.51	0.038		ppbv	1	9/6/2016		
cis-1,3-Dichloropropene	ND	0.51	0.06		ppbv	1	9/6/2016		
Cyclohexane	1.3	0.51	0.11		ppbv	1	9/6/2016		
Dibromochloromethane	ND	0.51	0.041		ppbv	1	9/6/2016		
Dichlorodifluoromethane	0.43	0.51	0.017	J	ppbv	1	9/6/2016		
Ethyl acetate	ND	1.3	0.1		ppbv	1	9/6/2016		

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

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**Date Reported:** September 09, 2016

September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

**Lab ID:** 16081298-008

**Date Printed:** 

**ANALYTICAL RESULTS** 

Client Sample ID: SV-3

**Collection Date:** 8/31/2016 12:34:00 PM

Matrix: AIR

Analyses	Resul	t RL	MDL	Qualifier	alifier Units DF Date Analy				
Volatile Organic Compounds in	Air by GC/MS	TO-15		Prep	Date: 9/2/2	2016	Analyst: <b>NLM</b>		
Ethylbenzene	1.4	0.51	0.04		ppbv	1	9/6/2016		
Freon-113	0.077	0.51	0.019	J	ppbv	1	9/6/2016		
Freon-114	ND	2.6	0.073		ppbv	1	9/6/2016		
Heptane	3.1	0.51	0.05		ppbv	1	9/6/2016		
Hexachlorobutadiene	ND	0.51	0.058		ppbv	1	9/6/2016		
Hexane	3.2	1.3	0.036		ppbv	1	9/6/2016		
Isopropyl Alcohol	26	2.6	0.2		ppbv	1	9/6/2016		
m,p-Xylene	2.7	1.0	0.075		ppbv	1	9/6/2016		
Methyl tert-butyl ether	0.077	0.51	0.042	J	ppbv	1	9/6/2016		
Methylene chloride	ND	5.1	0.27		ppbv	1	9/6/2016		
Naphthalene	0.79	0.51	0.15		ppbv	1	9/6/2016		
o-Xylene	1.1	0.51	0.033		ppbv	1	9/6/2016		
Propene	3.2	5.1	0.51	J	ppbv	1	9/6/2016		
Styrene	0.13	0.51	0.054	J	ppbv	1	9/6/2016		
Tetrachloroethene	280	260	18		ppbv	500	9/7/2016		
Tetrahydrofuran	1.9	1.3	0.12		ppbv	1	9/6/2016		
Toluene	13	0.51	0.058		ppbv	1	9/6/2016		
trans-1,2-Dichloroethene	ND	0.51	0.035		ppbv	1	9/6/2016		
trans-1,3-Dichloropropene	ND	0.51	0.069		ppbv	1	9/6/2016		
Trichloroethene	4.7	0.51	0.039		ppbv	1	9/6/2016		
Trichlorofluoromethane	0.23	0.51	0.032	J	ppbv	1	9/6/2016		
Vinyl acetate	ND	5.1	0.069		ppbv	1	9/6/2016		
Vinyl chloride	ND	0.51	0.043		ppbv	1	9/6/2016		
Xylenes, Total	3.8	1.5	0.11		ppbv	1	9/6/2016		
olatile Organic Compounds in	Air by GC/MS	TO-15		Prep	Date: 9/2/2	2016	Analyst: <b>NLM</b>		
1,1,1-Trichloroethane	ND	0.0028	0.00015		mg/m³	1	9/6/2016		
1,1,2,2-Tetrachloroethane	ND	0.0035	0.00024		mg/m³	1	9/6/2016		
1,1,2-Trichloroethane	ND	0.0028	0.00027		mg/m³	1	9/6/2016		
1,1-Dichloroethane	ND	0.0021	0.0001		mg/m³	1	9/6/2016		
1,1-Dichloroethene	ND	0.0020	0.00013		mg/m³	1	9/6/2016		
1,2,4-Trichlorobenzene	0.0011	0.0038	0.00084	J	mg/m³	1	9/6/2016		
1,2,4-Trimethylbenzene	0.0075	0.0025	0.00023		mg/m³	1	9/6/2016		
1,2-Dibromoethane	ND	0.0039	0.00044		mg/m³	1	9/6/2016		
1,2-Dichlorobenzene	ND	0.0031	0.00026		mg/m³	1	9/6/2016		
1,2-Dichloroethane	ND	0.0021	0.00024		mg/m³	1	9/6/2016		
1,2-Dichloropropane	ND	0.0024	0.00016		mg/m³	1	9/6/2016		
1,3,5-Trimethylbenzene	0.0020	0.0025	0.00017	J	mg/m³	1	9/6/2016		
1,3-Butadiene	ND	0.0011	0.00014		mg/m³	1	9/6/2016		

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

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Qualifiers:

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E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** September 09, 2016

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

**Project:** PECO-216-78, Bright Cleaners-Franklin Centre, 7249

**Lab ID:** 16081298-008

**ANALYTICAL RESULTS** 

**Client Sample ID:** SV-3

**Collection Date:** 8/31/2016 12:34:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Date Analyzed		
Volatile Organic Compounds in <i>I</i>	Air by GC/MS TO	D-15		Prep	Date: <b>9/2/2</b>	016	Analyst: <b>NLM</b>
1,3-Dichlorobenzene	0.0049	0.0031	0.00026	-	mg/m³	1	9/6/2016
1,4-Dichlorobenzene	ND	0.0031	0.00032		mg/m³	1	9/6/2016
1,4-Dioxane	0.0024	0.0046	0.00054	J	mg/m³	1	9/6/2016
2-Butanone	0.012	0.0038	0.00034		mg/m³	1	9/6/2016
2-Hexanone	0.0049	0.010	0.00057	J	mg/m³	1	9/6/2016
4-Ethyltoluene	0.0016	0.0025	0.00026	J	mg/m³	1	9/6/2016
4-Methyl-2-pentanone	0.0094	0.010	0.00031	J	mg/m³	1	9/6/2016
Acetone	0.10	0.012	0.00043	*	mg/m³	1	9/6/2016
Benzene	0.0034	0.0016	0.00012		mg/m³	1	9/6/2016
Benzyl chloride	ND	0.0066	0.0026		mg/m³	1	9/6/2016
Bromodichloromethane	ND	0.0034	0.00023		mg/m³	1	9/6/2016
Bromoform	ND	0.013	0.00028		mg/m³	1	9/6/2016
Bromomethane	0.00079	0.0050	0.00023	J	mg/m³	1	9/6/2016
Carbon disulfide	0.00048	0.0016	0.0004	J	mg/m³	1	9/6/2016
Carbon tetrachloride	ND	0.0032	0.00045		mg/m³	1	9/6/2016
Chlorobenzene	ND	0.0024	0.00015		mg/m³	1	9/6/2016
Chloroethane	ND	0.0013	0.0013		mg/m³	1	9/6/2016
Chloroform	0.00062	0.0025	0.00014	J	mg/m³	1	9/6/2016
Chloromethane	ND	0.0026	0.00026		mg/m³	1	9/6/2016
cis-1,2-Dichloroethene	0.032	0.0020	0.00015		mg/m³	1	9/6/2016
cis-1,3-Dichloropropene	ND	0.0023	0.00027		mg/m³	1	9/6/2016
Cyclohexane	0.0046	0.0018	0.00037		mg/m³	1	9/6/2016
Dibromochloromethane	ND	0.0043	0.00035		mg/m³	1	9/6/2016
Dichlorodifluoromethane	0.0021	0.0025	0.000082	J	mg/m³	1	9/6/2016
Ethyl acetate	ND	0.0046	0.00037		mg/m³	1	9/6/2016
Ethylbenzene	0.0061	0.0022	0.00017		mg/m³	1	9/6/2016
Freon-113	0.00059	0.0039	0.00015	J	mg/m³	1	9/6/2016
Freon-114	ND	0.018	0.00051		mg/m³	1	9/6/2016
Heptane	0.013	0.0021	0.00021		mg/m³	1	9/6/2016
Hexachlorobutadiene	ND	0.0054	0.00061		mg/m³	1	9/6/2016
Hexane	0.011	0.0045	0.00013		mg/m³	1	9/6/2016
Isopropyl Alcohol	0.065	0.0063	0.00049		mg/m³	1	9/6/2016
m,p-Xylene	0.012	0.0044	0.00033		mg/m³	1	9/6/2016
Methyl tert-butyl ether	0.00028	0.0018	0.00015	J	mg/m³	1	9/6/2016
Methylene chloride	ND	0.018	0.00095		mg/m³	1	9/6/2016
Naphthalene	0.0041	0.0027	0.00076		mg/m³	1	9/6/2016
o-Xylene	0.0048	0.0022	0.00014		mg/m³	1	9/6/2016
Propene	0.0055	0.0088	0.00088	J	mg/m³	1	9/6/2016

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

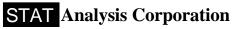
Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



2242 West Harrison St., Suite 200, Chicago, IL 60612-3766

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: September 09, 2016

**ANALYTICAL RESULTS** 

**Date Printed:** September 09, 2016

**CLIENT:** Apex Companies, LLC

Work Order: 16081298 Revision 0

PECO-216-78, Bright Cleaners-Franklin Centre, 7249

**Project:** Lab ID: 16081298-008 **Collection Date:** 8/31/2016 12:34:00 PM

Matrix: AIR

**Client Sample ID:** SV-3

Analyses	Resul	lt RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in Air I	oy GC/MS	TO-15		Prep	Date: 9/2/2	016	Analyst: <b>NLM</b>
Styrene	0.00054	0.0022	0.00023	J	mg/m³	1	9/6/2016
Tetrachloroethene	1.9	1.7	0.13		mg/m³	500	9/7/2016
Tetrahydrofuran	0.0056	0.0038	0.00034		mg/m³	1	9/6/2016
Toluene	0.047	0.0019	0.00022		mg/m³	1	9/6/2016
trans-1,2-Dichloroethene	ND	0.0020	0.00014		mg/m³	1	9/6/2016
trans-1,3-Dichloropropene	ND	0.0023	0.00032		mg/m³	1	9/6/2016
Trichloroethene	0.026	0.0027	0.00021		mg/m³	1	9/6/2016
Trichlorofluoromethane	0.0013	0.0029	0.00018	J	mg/m³	1	9/6/2016
Vinyl acetate	ND	0.018	0.00024		mg/m³	1	9/6/2016
Vinyl chloride	ND	0.0013	0.00011		mg/m³	1	9/6/2016
Xylenes, Total	0.017	0.0066	0.00046		mg/m³	1	9/6/2016

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Company: Apex Companies Project Number: P560-2016	- 78		Client			No.:		O marcon and a mar													
Project Name: Bright Clear Project Location: 7249 5.76 <sup>th</sup>	ners - F.	rankli.	n Cer	tre	-													P.O. N	lo.:		
Project Location: 72 49 5.76th	St. Fr	naklin	, WI					9	1/2												
Sampler(s): Joe Becker								28	0						ı						
Report To: Joe Becker		Phone:	847.	- 95	6-	858	19	,	-									Turn A	Around Time (D	ays <u>):</u>	_
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### Sample Receipt Checklist

Client Name APEX		Date and Tim	e Received:	8/31/2016 4:45:00 PM
Work Order Number 16081298	ı	Received by:	JDR	
Checklist completed by:  Skinature  Bate  Bate	31 /16	Reviewed by:	JOC	7/1/16
Section 1.			initials	( Date
Matrix: Carrier name	Client Delivered			
Shipping container/cooler in good condition?	Yes 🗸	No 🗌	Not Present	
Custody seals intact on shippping container/cooler?	Yes	No 🗌	Not Present	
Custody seals intact on sample bottles?	Yes	No 🗌	Not Present 🗹	
Chain of custody present?	Yes 🗸	No 🗌		
Chain of custody signed when relinquished and received?	Yes 🗹	No 🗌		
Chain of custody agrees with sample labels/containers?	Yes 🗸	No 🗆		
Samples in proper container/bottle?	Yes 🗸	No 🗌		
Sample containers intact?	Yes 🗸	No 🗌		
Sufficient sample volume for indicated test?	Yes 🔽	No 🗌		
All samples received within holding time?	Yes 🗹	No 🗌		
Container or Temp Blank temperature in compliance?	Yes 🗸	No 🗌	Temperature	e 4.7 °C <b>X</b>
Water - VOA vials have zero headspace?  No VOA vials subr	mitted	Yes 🗹	No 🗌	<i>γ</i> -
Water - Samples pH checked?	Yes	No 🔣	Checked by:	
Water <sup>⊆</sup> -Samples properly preserved?	Yes 📗	No 💹	pH Adjusted?	
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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

August 25, 2017

Fax:

Apex Companies, LLC 1701 East Woodfield Rd, Suite 333 Schaumburg, IL 60173 Telephone: (847) 956-8589

(847) 956-8619

Analytical Report for STAT Work Order: 17080520 Revision 0

RE: PELO-2017-68, Franklin Centre, 7201 S. 76th St., Franklin, WI

Dear Joseph Becker:

STAT Analysis received 6 samples for the referenced project on 8/15/2017 1:30:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements specified in WI DNR Chapter NR 149 (Certification Number 399099910). Analyses were performed in accordance with methods as referenced on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. A listing of accredited methods/parameters can also be provided.

For sample results requiring adjustment for dilutions, the detection and reporting limits are adjusted for the corresponding dilution factor. Analytical results expressed on a dry weight basis have units of mg/Kg-dry or  $\mu$ g/Kg-dry on the analytical report. Corresponding reporting limits are adjusted for dry weight.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Craig Chawla

Project Manager

The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples tested. If you have received this report in error, please notify us immediately by phone. The report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This analytical report shall become property of the Customer upon payment in full. Otherwise, STAT will be under no obligation to support, defend or discuss the analytical report.



**Date:** August 25, 2017

Client: Apex Companies, LLC

Project: PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fra Work Order Sample Summary

Work Order: 17080520 Revision 0

Lab Sample ID	Client Sample ID	Tag Number	<b>Collection Date</b>	Date Received
17080520-001A	MW-1 @ 4'		8/11/2017 8:00:00 AM	8/15/2017
17080520-001B	MW-1 @ 4'		8/11/2017 8:00:00 AM	8/15/2017
17080520-002A	MW-2 @ 6'		8/11/2017 10:40:00 AM	8/15/2017
17080520-002B	MW-2 @ 6'		8/11/2017 10:40:00 AM	8/15/2017
17080520-003A	B-1 @ 2'		8/11/2017 9:10:00 AM	8/15/2017
17080520-003B	B-1 @ 2'		8/11/2017 9:10:00 AM	8/15/2017
17080520-004A	SV-4		8/14/2017 12:24:00 PM	8/15/2017
17080520-005A	SV-5		8/14/2017 12:30:00 PM	8/15/2017
17080520-006A	SV-6		8/14/2017 12:35:00 PM	8/15/2017

**Date:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Project: PELO-2017-68, Franklin Centre, 7201 S. 76th St., Franklin, CASE NARRATIVE

Work Order: 17080520 Revision 0

STAT Analysis Corp is accredited for TO-15 analysis by Oregon Environmental Accreditation Progam (ORELAP, Accreditation Number IL300001).

TO-15 results that are reported in mg/m³ are calculated based on a temperature of 25°C, atmospheric pressure of 760 mm Hg, and the molecular weight of the analyte.

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 25, 2017

ANALYTICAL RESULTS

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

**Lab ID:** 17080520-001

Client Sample ID: MW-1 @ 4'

**Collection Date:** 8/11/2017 8:00:00 AM

Matrix: SOIL

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	SI	W5035/8260	 DB	Prep	Date: <b>8/16/2</b>	017	Analyst: RRS
Acetone	0.075	0.068	0.0021		mg/Kg-dry	1	8/22/2017
Benzene	0.0025	0.0045	0.00018	J	mg/Kg-dry	1	8/22/2017
Bromodichloromethane	ND	0.0045	0.00036		mg/Kg-dry	1	8/22/2017
Bromoform	ND	0.0045	0.00036		mg/Kg-dry	1	8/22/2017
Bromomethane	ND	0.0090	0.00045		mg/Kg-dry	1	8/22/2017
2-Butanone	0.011	0.068	0.0014	J	mg/Kg-dry	1	8/22/2017
Carbon disulfide	ND	0.045	0.00018		mg/Kg-dry	1	8/22/2017
Carbon tetrachloride	ND	0.0045	0.00027		mg/Kg-dry	1	8/22/2017
Chlorobenzene	ND	0.0045	0.00018		mg/Kg-dry	1	8/22/2017
Chloroethane	ND	0.0090	0.00036		mg/Kg-dry	1	8/22/2017
Chloroform	ND	0.0045	0.00018		mg/Kg-dry	1	8/22/2017
Chloromethane	ND	0.0090	0.00027		mg/Kg-dry	1	8/22/2017
Dibromochloromethane	ND	0.0045	0.00036		mg/Kg-dry	1	8/22/2017
1,1-Dichloroethane	ND	0.0045	0.00027		mg/Kg-dry	1	8/22/2017
1,2-Dichloroethane	ND	0.0045	0.00054		mg/Kg-dry	1	8/22/2017
1,1-Dichloroethene	ND	0.0045	0.00027		mg/Kg-dry	1	8/22/2017
cis-1,2-Dichloroethene	ND	0.0045	0.00027		mg/Kg-dry	1	8/22/2017
trans-1,2-Dichloroethene	ND	0.0045	0.00027		mg/Kg-dry	1	8/22/2017
1,2-Dichloropropane	ND	0.0045	0.00036		mg/Kg-dry	1	8/22/2017
cis-1,3-Dichloropropene	ND	0.0018	0.00018		mg/Kg-dry	1	8/22/2017
trans-1,3-Dichloropropene	ND	0.0018	0.00027		mg/Kg-dry	1	8/22/2017
Ethylbenzene	0.0013	0.0045	0.00009	J	mg/Kg-dry	1	8/22/2017
2-Hexanone	ND	0.018	0.00072		mg/Kg-dry	1	8/22/2017
4-Methyl-2-pentanone	ND	0.018	0.00027		mg/Kg-dry	1	8/22/2017
Methylene chloride	0.0015	0.0090	0.00072	J	mg/Kg-dry	1	8/22/2017
Methyl tert-butyl ether	ND	0.0045	0.00018		mg/Kg-dry	1	8/22/2017
Styrene	ND	0.0045	0.00018		mg/Kg-dry	1	8/22/2017
1,1,2,2-Tetrachloroethane	ND	0.0045	0.00018		mg/Kg-dry	1	8/22/2017
Tetrachloroethene	ND	0.0045	0.00027		mg/Kg-dry	1	8/22/2017
Toluene	0.0044	0.0045	0.00018	J	mg/Kg-dry	1	8/22/2017
1,1,1-Trichloroethane	ND	0.0045	0.00018		mg/Kg-dry	1	8/22/2017
1,1,2-Trichloroethane	ND	0.0045	0.00045		mg/Kg-dry	1	8/22/2017
Trichloroethene	ND	0.0045	0.00018		mg/Kg-dry	1	8/22/2017
Vinyl chloride	ND	0.0045	0.00036		mg/Kg-dry	1	8/22/2017
Xylenes, Total	0.0025	0.014	0.00036	J	mg/Kg-dry	1	8/22/2017
Percent Moisture	D	2974		-	Date: 8/17/2	017	Analyst: KKA
Percent Moisture	15.8	0.2	0.1	*	wt%	1	8/18/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: August 25, 2017

**ANALYTICAL RESULTS** 

**Collection Date:** 8/11/2017 10:40:00 AM

DF Date Analyzed

Client Sample ID: MW-2 @ 6'

Units

MDL Qualifier

**Date Printed:** August 25, 2017

Analyses

**CLIENT:** Apex Companies, LLC Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

Matrix: SOIL Lab ID: 17080520-002

RI.

Result

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	SV	N5035/826	0B	Prep	Date: 8/16/2	2017	Analyst: RRS
Acetone	0.025	0.065	0.002	J	mg/Kg-dry	1	8/22/2017
Benzene	0.0021	0.0043	0.00017	J	mg/Kg-dry	1	8/22/2017
Bromodichloromethane	ND	0.0043	0.00035		mg/Kg-dry	1	8/22/2017
Bromoform	ND	0.0043	0.00035		mg/Kg-dry	1	8/22/2017
Bromomethane	ND	0.0087	0.00043		mg/Kg-dry	1	8/22/2017
2-Butanone	0.0040	0.065	0.0013	J	mg/Kg-dry	1	8/22/2017
Carbon disulfide	ND	0.043	0.00017		mg/Kg-dry	1	8/22/2017
Carbon tetrachloride	ND	0.0043	0.00026		mg/Kg-dry	1	8/22/2017
Chlorobenzene	ND	0.0043	0.00017		mg/Kg-dry	1	8/22/2017
Chloroethane	ND	0.0087	0.00035		mg/Kg-dry	1	8/22/2017
Chloroform	ND	0.0043	0.00017		mg/Kg-dry	1	8/22/2017
Chloromethane	ND	0.0087	0.00026		mg/Kg-dry	1	8/22/2017
Dibromochloromethane	ND	0.0043	0.00035		mg/Kg-dry	1	8/22/2017
1,1-Dichloroethane	ND	0.0043	0.00026		mg/Kg-dry	1	8/22/2017
1,2-Dichloroethane	ND	0.0043	0.00052		mg/Kg-dry	1	8/22/2017
1,1-Dichloroethene	ND	0.0043	0.00026		mg/Kg-dry	1	8/22/2017
cis-1,2-Dichloroethene	ND	0.0043	0.00026		mg/Kg-dry	1	8/22/2017
trans-1,2-Dichloroethene	ND	0.0043	0.00026		mg/Kg-dry	1	8/22/2017
1,2-Dichloropropane	ND	0.0043	0.00035		mg/Kg-dry	1	8/22/2017
cis-1,3-Dichloropropene	ND	0.0017	0.00017		mg/Kg-dry	1	8/22/2017
trans-1,3-Dichloropropene	ND	0.0017	0.00026		mg/Kg-dry	1	8/22/2017
Ethylbenzene	0.00088	0.0043	0.000087	J	mg/Kg-dry	1	8/22/2017
2-Hexanone	ND	0.017	0.00069		mg/Kg-dry	1	8/22/2017
4-Methyl-2-pentanone	ND	0.017	0.00026		mg/Kg-dry	1	8/22/2017
Methylene chloride	ND	0.0087	0.00069		mg/Kg-dry	1	8/22/2017
Methyl tert-butyl ether	ND	0.0043	0.00017		mg/Kg-dry	1	8/22/2017
Styrene	ND	0.0043	0.00017		mg/Kg-dry	1	8/22/2017
1,1,2,2-Tetrachloroethane	ND	0.0043	0.00017		mg/Kg-dry	1	8/22/2017
Tetrachloroethene	ND	0.0043	0.00026		mg/Kg-dry	1	8/22/2017
Toluene	0.0028	0.0043	0.00017	J	mg/Kg-dry	1	8/22/2017
1,1,1-Trichloroethane	ND	0.0043	0.00017		mg/Kg-dry	1	8/22/2017
1,1,2-Trichloroethane	ND	0.0043	0.00043		mg/Kg-dry	1	8/22/2017
Trichloroethene	ND	0.0043	0.00017		mg/Kg-dry	1	8/22/2017
Vinyl chloride	ND	0.0043	0.00035		mg/Kg-dry	1	8/22/2017
Xylenes, Total	0.0012	0.013	0.00035	J	mg/Kg-dry	1	8/22/2017
Percent Moisture	D2	2974		Prep	Date: 8/17/2	2017	Analyst: KKA
Percent Moisture	16.6	0.2	0.1	*	wt%	1	8/18/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: August 25, 2017

**ANALYTICAL RESULTS** 

**Collection Date:** 8/11/2017 9:10:00 AM

Client Sample ID: B-1 @ 2'

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

Matrix: SOIL 17080520-003 Lab ID:

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	S	W5035/826	0B	Prep	Date: 8/16/2	2017	Analyst: <b>RRS</b>
Acetone	0.064	0.056	0.0017	·	mg/Kg-dry	1	8/22/2017
Benzene	0.0015	0.0037	0.00015	J	mg/Kg-dry	1	8/22/2017
Bromodichloromethane	ND	0.0037	0.0003		mg/Kg-dry	1	8/22/2017
Bromoform	ND	0.0037	0.0003		mg/Kg-dry	1	8/22/2017
Bromomethane	ND	0.0075	0.00037		mg/Kg-dry	1	8/22/2017
2-Butanone	0.0099	0.056	0.0011	J	mg/Kg-dry	1	8/22/2017
Carbon disulfide	ND	0.037	0.00015		mg/Kg-dry	1	8/22/2017
Carbon tetrachloride	ND	0.0037	0.00022		mg/Kg-dry	1	8/22/2017
Chlorobenzene	ND	0.0037	0.00015		mg/Kg-dry	1	8/22/2017
Chloroethane	ND	0.0075	0.0003		mg/Kg-dry	1	8/22/2017
Chloroform	ND	0.0037	0.00015		mg/Kg-dry	1	8/22/2017
Chloromethane	ND	0.0075	0.00022		mg/Kg-dry	1	8/22/2017
Dibromochloromethane	ND	0.0037	0.0003		mg/Kg-dry	1	8/22/2017
1,1-Dichloroethane	ND	0.0037	0.00022		mg/Kg-dry	1	8/22/2017
1,2-Dichloroethane	ND	0.0037	0.00045		mg/Kg-dry	1	8/22/2017
1,1-Dichloroethene	ND	0.0037	0.00022		mg/Kg-dry	1	8/22/2017
cis-1,2-Dichloroethene	ND	0.0037	0.00022		mg/Kg-dry	1	8/22/2017
trans-1,2-Dichloroethene	ND	0.0037	0.00022		mg/Kg-dry	1	8/22/2017
1,2-Dichloropropane	ND	0.0037	0.0003		mg/Kg-dry	1	8/22/2017
cis-1,3-Dichloropropene	ND	0.0015	0.00015		mg/Kg-dry	1	8/22/2017
trans-1,3-Dichloropropene	ND	0.0015	0.00022		mg/Kg-dry	1	8/22/2017
Ethylbenzene	0.0010	0.0037	0.000075	J	mg/Kg-dry	1	8/22/2017
2-Hexanone	ND	0.015	0.0006		mg/Kg-dry	1	8/22/2017
4-Methyl-2-pentanone	ND	0.015	0.00022		mg/Kg-dry	1	8/22/2017
Methylene chloride	ND	0.0075	0.0006		mg/Kg-dry	1	8/22/2017
Methyl tert-butyl ether	ND	0.0037	0.00015		mg/Kg-dry	1	8/22/2017
Styrene	ND	0.0037	0.00015		mg/Kg-dry	1	8/22/2017
1,1,2,2-Tetrachloroethane	ND	0.0037	0.00015		mg/Kg-dry	1	8/22/2017
Tetrachloroethene	0.00067	0.0037	0.00022	J	mg/Kg-dry	1	8/22/2017
Toluene	0.0028	0.0037	0.00015	J	mg/Kg-dry	1	8/22/2017
1,1,1-Trichloroethane	ND	0.0037	0.00015		mg/Kg-dry	1	8/22/2017
1,1,2-Trichloroethane	ND	0.0037	0.00037		mg/Kg-dry	1	8/22/2017
Trichloroethene	0.0010	0.0037	0.00015	J	mg/Kg-dry	1	8/22/2017
Vinyl chloride	ND	0.0037	0.0003		mg/Kg-dry	1	8/22/2017
Xylenes, Total	0.0014	0.011	0.0003	J	mg/Kg-dry	1	8/22/2017
Percent Moisture	D	2974			Date: 8/17/2	2017	Analyst: KKA
Percent Moisture	10.2	0.2	0.1	*	wt%	1	8/18/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: August 25, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

Lab ID: 17080520-004 Client Sample ID: SV-4

**Collection Date:** 8/14/2017 12:24:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in	Air by GC/MS TO	-15		Prep	Date: <b>8/16/</b>	2017	Analyst: AOA
1,1,1-Trichloroethane	ND	0.81	0.039		ppbv	2	8/16/2017
1,1,2,2-Tetrachloroethane	ND	0.81	0.056		ppbv	2	8/16/2017
1,1,2-Trichloroethane	ND	0.81	0.1		ppbv	2	8/16/2017
1,1-Dichloroethane	ND	0.81	0.035		ppbv	2	8/16/2017
1,1-Dichloroethene	ND	0.81	0.051		ppbv	2	8/16/2017
1,2,4-Trichlorobenzene	ND	0.81	0.15		ppbv	2	8/16/2017
1,2,4-Trimethylbenzene	0.081	0.81	0.045	J	ppbv	2	8/16/2017
1,2-Dibromoethane	ND	0.81	0.089		ppbv	2	8/16/2017
1,2-Dichlorobenzene	ND	0.81	0.065		ppbv	2	8/16/2017
1,2-Dichloroethane	ND	0.81	0.094		ppbv	2	8/16/2017
1,2-Dichloropropane	ND	0.81	0.15		ppbv	2	8/16/2017
1,3,5-Trimethylbenzene	ND	0.81	0.056		ppbv	2	8/16/2017
1,3-Butadiene	ND	0.81	0.19		ppbv	2	8/16/2017
1,3-Dichlorobenzene	ND	0.81	0.061		ppbv	2	8/16/2017
1,4-Dichlorobenzene	ND	0.81	0.07		ppbv	2	8/16/2017
1,4-Dioxane	ND	2.0	0.32		ppbv	2	8/16/2017
2-Butanone	0.57	2.0	0.34	J	ppbv	2	8/16/2017
2-Hexanone	ND	4.1	0.52		ppbv	2	8/16/2017
4-Ethyltoluene	ND	0.81	0.085		ppbv	2	8/16/2017
4-Methyl-2-pentanone	ND	4.1	0.28		ppbv	2	8/16/2017
Acetone	6.6	8.1	0.75	J*	ppbv	2	8/16/2017
Benzene	0.081	0.81	0.068	J	ppbv	2	8/16/2017
Benzyl chloride	ND	2.0	0.25		ppbv	2	8/16/2017
Bromodichloromethane	ND	0.81	0.042		ppbv	2	8/16/2017
Bromoform	ND	2.0	0.04		ppbv	2	8/16/2017
Bromomethane	0.12	2.0	0.095	J	ppbv	2	8/16/2017
Carbon disulfide	ND	0.81	0.084		ppbv	2	8/16/2017
Carbon tetrachloride	ND	0.81	0.18		ppbv	2	8/16/2017
Chlorobenzene	ND	0.81	0.2		ppbv	2	8/16/2017
Chloroethane	ND	0.81	0.17		ppbv	2	8/16/2017
Chloroform	ND	0.81	0.045		ppbv	2	8/16/2017
Chloromethane	ND	2.0	0.46		ppbv	2	8/16/2017
cis-1,2-Dichloroethene	ND	0.81	0.16		ppbv	2	8/16/2017
cis-1,3-Dichloropropene	ND	0.81	0.097		ppbv	2	8/16/2017
Cyclohexane	ND	0.81	0.17		ppbv	2	8/16/2017
Dibromochloromethane	ND	0.81	0.051		ppbv	2	8/16/2017
Dichlorodifluoromethane	0.41	0.81	0.05	J	ppbv	2	8/16/2017
Ethyl acetate	ND	2.0	0.29		ppbv	2	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: August 25, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

Lab ID: 17080520-004 Client Sample ID: SV-4

**Collection Date:** 8/14/2017 12:24:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed	
Volatile Organic Compounds in Air by	GC/MS T	O-15		Prep	Date: <b>8/16/</b>	2017	Analyst: <b>AOA</b>	
Ethylbenzene	ND	0.81	0.059		ppbv	2	8/16/2017	
Freon-113	0.041	0.81	0.031	J	ppbv	2	8/16/2017	
Freon-114	ND	4.1	0.042		ppbv	2	8/16/2017	
Heptane	ND	0.81	0.068		ppbv	2	8/16/2017	
Hexachlorobutadiene	ND	0.81	0.085		ppbv	2	8/16/2017	
Hexane	ND	2.0	0.14		ppbv	2	8/16/2017	
Isopropyl Alcohol	20	4.1	0.31		ppbv	2	8/16/2017	
m,p-Xylene	ND	1.6	0.1		ppbv	2	8/16/2017	
Methyl tert-butyl ether	ND	0.81	0.046		ppbv	2	8/16/2017	
Methylene chloride	1.1	8.1	0.81	J	ppbv	2	8/16/2017	
Naphthalene	ND	0.81	0.23		ppbv	2	8/16/2017	
o-Xylene	ND	0.81	0.052		ppbv	2	8/16/2017	
Propene	0.24	8.1	0.23	J	ppbv	2	8/16/2017	
Styrene	ND	0.81	0.19		ppbv	2	8/16/2017	
Tetrachloroethene	350	10	0.74		ppbv	25	8/16/2017	
Tetrahydrofuran	ND	2.0	0.39		ppbv	2	8/16/2017	
Toluene	ND	0.81	0.092		ppbv	2	8/16/2017	
trans-1,2-Dichloroethene	ND	0.81	0.056		ppbv	2	8/16/2017	
trans-1,3-Dichloropropene	ND	0.81	0.81		ppbv	2	8/16/2017	
Trichloroethene	2.2	0.81	0.062		ppbv	2	8/16/2017	
Trichlorofluoromethane	0.24	0.81	0.051	J	ppbv	2	8/16/2017	
Vinyl acetate	ND	8.1	0.33		ppbv	2	8/16/2017	
Vinyl chloride	ND	0.81	0.069		ppbv	2	8/16/2017	
Xylenes, Total	ND	2.4	0.15		ppbv	2	8/16/2017	
Volatile Organic Compounds in Air by	GC/MS T	O-15		Prep Date: 8/16/2017 Analyst: AOA				
1,1,1-Trichloroethane	ND	0.0044	0.00021		mg/m³	2	8/16/2017	
1,1,2,2-Tetrachloroethane	ND	0.0056	0.00038		mg/m³	2	8/16/2017	
1,1,2-Trichloroethane	ND	0.0044	0.00056		mg/m³	2	8/16/2017	
1,1-Dichloroethane	ND	0.0033	0.00014		mg/m³	2	8/16/2017	
1,1-Dichloroethene	ND	0.0032	0.0002		mg/m³	2	8/16/2017	
1,2,4-Trichlorobenzene	ND	0.0060	0.0011		mg/m³	2	8/16/2017	
1,2,4-Trimethylbenzene	0.00040	0.0040	0.00022	J	mg/m³	2	8/16/2017	
1,2-Dibromoethane	ND	0.0063	0.00068		mg/m³	2	8/16/2017	
1,2-Dichlorobenzene	ND	0.0049	0.00039		mg/m³	2	8/16/2017	
1,2-Dichloroethane	ND	0.0033	0.00038		mg/m³	2	8/16/2017	
1,2-Dichloropropane	ND	0.0038	0.0007		mg/m³	2	8/16/2017	
1,3,5-Trimethylbenzene	ND	0.0040	0.00028		mg/m³	2	8/16/2017	
1,3-Butadiene	ND	0.0018	0.00042		mg/m³	2	8/16/2017	

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

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E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 25, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

**Lab ID:** 17080520-004

Client Sample ID: SV-4

**Collection Date:** 8/14/2017 12:24:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in Air	by GC/MS To	O-15		Prep	Date: <b>8/16/</b>	2017	Analyst: AOA
1,3-Dichlorobenzene	ND	0.0049	0.00037	•	mg/m³	2	8/16/2017
1,4-Dichlorobenzene	ND	0.0049	0.00042		mg/m³	2	8/16/2017
1,4-Dioxane	ND	0.0073	0.0012		mg/m³	2	8/16/2017
2-Butanone	0.0017	0.0060	0.00099	J	mg/m³	2	8/16/2017
2-Hexanone	ND	0.017	0.0021		mg/m³	2	8/16/2017
4-Ethyltoluene	ND	0.0040	0.00042		mg/m³	2	8/16/2017
4-Methyl-2-pentanone	ND	0.017	0.0011		mg/m³	2	8/16/2017
Acetone	0.016	0.019	0.0018	J*	mg/m³	2	8/16/2017
Benzene	0.00026	0.0026	0.00022	J	mg/m³	2	8/16/2017
Benzyl chloride	ND	0.011	0.0013		mg/m³	2	8/16/2017
Bromodichloromethane	ND	0.0055	0.00028		mg/m³	2	8/16/2017
Bromoform	ND	0.021	0.00041		mg/m³	2	8/16/2017
Bromomethane	0.00047	0.0079	0.00037	J	mg/m³	2	8/16/2017
Carbon disulfide	ND	0.0025	0.00026		mg/m³	2	8/16/2017
Carbon tetrachloride	ND	0.0051	0.0012		mg/m³	2	8/16/2017
Chlorobenzene	ND	0.0038	0.00094		mg/m³	2	8/16/2017
Chloroethane	ND	0.0021	0.00044		mg/m³	2	8/16/2017
Chloroform	ND	0.0040	0.00022		mg/m³	2	8/16/2017
Chloromethane	ND	0.0042	0.00095		mg/m³	2	8/16/2017
cis-1,2-Dichloroethene	ND	0.0032	0.00063		mg/m³	2	8/16/2017
cis-1,3-Dichloropropene	ND	0.0037	0.00044		mg/m³	2	8/16/2017
Cyclohexane	ND	0.0028	0.0006		mg/m³	2	8/16/2017
Dibromochloromethane	ND	0.0069	0.00043		mg/m³	2	8/16/2017
Dichlorodifluoromethane	0.0020	0.0040	0.00025	J	mg/m³	2	8/16/2017
Ethyl acetate	ND	0.0073	0.001		mg/m³	2	8/16/2017
Ethylbenzene	ND	0.0035	0.00026		mg/m³	2	8/16/2017
Freon-113	0.00031	0.0062	0.00023	J	mg/m³	2	8/16/2017
Freon-114	ND	0.028	0.00029		mg/m³	2	8/16/2017
Heptane	ND	0.0033	0.00028		mg/m³	2	8/16/2017
Hexachlorobutadiene	ND	0.0087	0.0009		mg/m³	2	8/16/2017
Hexane	ND	0.0072	0.0005		mg/m³	2	8/16/2017
Isopropyl Alcohol	0.050	0.010	0.00077		mg/m³	2	8/16/2017
m,p-Xylene	ND	0.0071	0.00044		mg/m³	2	8/16/2017
Methyl tert-butyl ether	ND	0.0029	0.00017		mg/m³	2	8/16/2017
Methylene chloride	0.0040	0.028	0.0028	J	mg/m³	2	8/16/2017
Naphthalene	ND	0.0043	0.0012		mg/m³	2	8/16/2017
o-Xylene	ND	0.0035	0.00023		mg/m³	2	8/16/2017
Propene	0.00042	0.014	0.00039	J	mg/m³	2	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

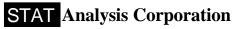
Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 25, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

**Lab ID:** 17080520-004

Client Sample ID: SV-4

**Collection Date:** 8/14/2017 12:24:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in A	Air by GC/MS T	O-15		Prep	Date: <b>8/16/</b>	2017	Analyst: AOA
Styrene	ND	0.0035	0.00082		mg/m³	2	8/16/2017
Tetrachloroethene	2.4	0.069	0.005		mg/m³	25	8/16/2017
Tetrahydrofuran	ND	0.0060	0.0011		mg/m³	2	8/16/2017
Toluene	ND	0.0031	0.00035		mg/m³	2	8/16/2017
trans-1,2-Dichloroethene	ND	0.0032	0.00022		mg/m³	2	8/16/2017
trans-1,3-Dichloropropene	ND	0.0037	0.0037		mg/m³	2	8/16/2017
Trichloroethene	0.012	0.0044	0.00033		mg/m³	2	8/16/2017
Trichlorofluoromethane	0.0014	0.0046	0.00029	J	mg/m³	2	8/16/2017
Vinyl acetate	ND	0.029	0.0011		mg/m³	2	8/16/2017
Vinyl chloride	ND	0.0021	0.00018		mg/m³	2	8/16/2017
Xylenes, Total	ND	0.011	0.00065		mg/m³	2	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: August 25, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

Lab ID: 17080520-005 **Client Sample ID:** SV-5

**Collection Date:** 8/14/2017 12:30:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	<b>Date Analyzed</b>
Volatile Organic Compounds in Air	by GC/MS TO	-15		Prep	Date: <b>8/16/</b>	2017	Analyst: AOA
1,1,1-Trichloroethane	0.16	0.81	0.039	J	ppbv	2	8/16/2017
1,1,2,2-Tetrachloroethane	ND	0.81	0.056		ppbv	2	8/16/2017
1,1,2-Trichloroethane	ND	0.81	0.1		ppbv	2	8/16/2017
1,1-Dichloroethane	ND	0.81	0.035		ppbv	2	8/16/2017
1,1-Dichloroethene	ND	0.81	0.051		ppbv	2	8/16/2017
1,2,4-Trichlorobenzene	ND	0.81	0.15		ppbv	2	8/16/2017
1,2,4-Trimethylbenzene	ND	0.81	0.045		ppbv	2	8/16/2017
1,2-Dibromoethane	ND	0.81	0.088		ppbv	2	8/16/2017
1,2-Dichlorobenzene	ND	0.81	0.064		ppbv	2	8/16/2017
1,2-Dichloroethane	ND	0.81	0.094		ppbv	2	8/16/2017
1,2-Dichloropropane	ND	0.81	0.15		ppbv	2	8/16/2017
1,3,5-Trimethylbenzene	ND	0.81	0.056		ppbv	2	8/16/2017
1,3-Butadiene	ND	0.81	0.19		ppbv	2	8/16/2017
1,3-Dichlorobenzene	ND	0.81	0.061		ppbv	2	8/16/2017
1,4-Dichlorobenzene	ND	0.81	0.069		ppbv	2	8/16/2017
1,4-Dioxane	ND	2.0	0.32		ppbv	2	8/16/2017
2-Butanone	ND	2.0	0.33		ppbv	2	8/16/2017
2-Hexanone	ND	4.0	0.51		ppbv	2	8/16/2017
4-Ethyltoluene	ND	0.81	0.084		ppbv	2	8/16/2017
4-Methyl-2-pentanone	ND	4.0	0.27		ppbv	2	8/16/2017
Acetone	5.8	8.1	0.74	J*	ppbv	2	8/16/2017
Benzene	0.081	0.81	0.067	J	ppbv	2	8/16/2017
Benzyl chloride	ND	2.0	0.25		ppbv	2	8/16/2017
Bromodichloromethane	ND	0.81	0.041		ppbv	2	8/16/2017
Bromoform	ND	2.0	0.039		ppbv	2	8/16/2017
Bromomethane	ND	2.0	0.095		ppbv	2	8/16/2017
Carbon disulfide	ND	0.81	0.083		ppbv	2	8/16/2017
Carbon tetrachloride	ND	0.81	0.18		ppbv	2	8/16/2017
Chlorobenzene	ND	0.81	0.2		ppbv	2	8/16/2017
Chloroethane	ND	0.81	0.16		ppbv	2	8/16/2017
Chloroform	ND	0.81	0.044		ppbv	2	8/16/2017
Chloromethane	ND	2.0	0.46		ppbv	2	8/16/2017
cis-1,2-Dichloroethene	ND	0.81	0.16		ppbv	2	8/16/2017
cis-1,3-Dichloropropene	ND	0.81	0.096		ppbv	2	8/16/2017
Cyclohexane	ND	0.81	0.17		ppbv	2	8/16/2017
Dibromochloromethane	ND	0.81	0.05		ppbv	2	8/16/2017
Dichlorodifluoromethane	0.40	0.81	0.05	J	ppbv	2	8/16/2017
Ethyl acetate	ND	2.0	0.29	-	ppbv	2	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 25, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

**Lab ID:** 17080520-005

**Client Sample ID:** SV-5

**Collection Date:** 8/14/2017 12:30:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in <i>I</i>	Air by GC/MS	ΓΟ-15		Prep	Date: <b>8/16/</b> 2	2017	Analyst: AOA
Ethylbenzene	ND	0.81	0.059		ppbv	2	8/16/2017
Freon-113	0.081	0.81	0.03	J	ppbv	2	8/16/2017
Freon-114	ND	4.0	0.042		ppbv	2	8/16/2017
Heptane	ND	0.81	0.067		ppbv	2	8/16/2017
Hexachlorobutadiene	ND	0.81	0.084		ppbv	2	8/16/2017
Hexane	ND	2.0	0.14		ppbv	2	8/16/2017
Isopropyl Alcohol	14	4.0	0.31		ppbv	2	8/16/2017
m,p-Xylene	ND	1.6	0.1		ppbv	2	8/16/2017
Methyl tert-butyl ether	ND	0.81	0.046		ppbv	2	8/16/2017
Methylene chloride	1.1	8.1	0.81	J	ppbv	2	8/16/2017
Naphthalene	ND	0.81	0.23		ppbv	2	8/16/2017
o-Xylene	ND	0.81	0.052		ppbv	2	8/16/2017
Propene	ND	8.1	0.22		ppbv	2	8/16/2017
Styrene	ND	0.81	0.19		ppbv	2	8/16/2017
Tetrachloroethene	76	0.81	0.059		ppbv	2	8/16/2017
Tetrahydrofuran	ND	2.0	0.38		ppbv	2	8/16/2017
Toluene	ND	0.81	0.091		ppbv	2	8/16/2017
trans-1,2-Dichloroethene	ND	0.81	0.056		ppbv	2	8/16/2017
trans-1,3-Dichloropropene	ND	0.81	0.81		ppbv	2	8/16/2017
Trichloroethene	4.8	0.81	0.062		ppbv	2	8/16/2017
Trichlorofluoromethane	0.32	0.81	0.051	J	ppbv	2	8/16/2017
Vinyl acetate	ND	8.1	0.32		ppbv	2	8/16/2017
Vinyl chloride	ND	0.81	0.068		ppbv	2	8/16/2017
Xylenes, Total	ND	2.4	0.15		ppbv	2	8/16/2017
olatile Organic Compounds in A	Air by GC/MS	ΓΟ-15		Prep	Date: <b>8/16/</b> 2	2017	Analyst: AOA
1,1,1-Trichloroethane	0.00088	0.0044	0.00021	J	mg/m³	2	8/16/2017
1,1,2,2-Tetrachloroethane	ND	0.0056	0.00038		mg/m³	2	8/16/2017
1,1,2-Trichloroethane	ND	0.0044	0.00056		mg/m³	2	8/16/2017
1,1-Dichloroethane	ND	0.0033	0.00014		mg/m³	2	8/16/2017
1,1-Dichloroethene	ND	0.0032	0.0002		mg/m³	2	8/16/2017
1,2,4-Trichlorobenzene	ND	0.0060	0.0011		mg/m³	2	8/16/2017
1,2,4-Trimethylbenzene	ND	0.0040	0.00022		mg/m³	2	8/16/2017
1,2-Dibromoethane	ND	0.0062	0.00068		mg/m³	2	8/16/2017
1,2-Dichlorobenzene	ND	0.0049	0.00039		mg/m³	2	8/16/2017
1,2-Dichloroethane	ND	0.0033	0.00038		mg/m³	2	8/16/2017
1,2-Dichloropropane	ND	0.0037	0.00069		mg/m³	2	8/16/2017
1,3,5-Trimethylbenzene	ND	0.0040	0.00027		mg/m³	2	8/16/2017
1,3-Butadiene	ND	0.0018	0.00042		mg/m³	2	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

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E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: August 25, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

17080520-005 Lab ID:

Matrix: AIR

Client Sample ID: SV-5

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in Air by	GC/MS TO	D-15		Prep I	Prep Date: <b>8/16/2017</b> Analyst: <b>AOA</b> mg/m³ 2 8/16/2017  J* mg/m³ 2 8/16/2017  J* mg/m³ 2 8/16/2017  J* mg/m³ 2 8/16/2017  J* mg/m³ 2 8/16/2017  mg/m³ 2 8/16/2017		
1,3-Dichlorobenzene	ND	0.0049	0.00036	·			
1,4-Dichlorobenzene	ND	0.0049	0.00042		mg/m³	2	8/16/2017
1,4-Dioxane	ND	0.0073	0.0012		mg/m³	2	8/16/2017
2-Butanone	ND	0.0060	0.00099		mg/m³	2	8/16/2017
2-Hexanone	ND	0.017	0.0021		mg/m³	2	8/16/2017
4-Ethyltoluene	ND	0.0040	0.00041		mg/m³	2	8/16/2017
4-Methyl-2-pentanone	ND	0.017	0.0011		mg/m³	2	8/16/2017
Acetone	0.014	0.019	0.0018	J*	mg/m³	2	8/16/2017
Benzene	0.00026	0.0026	0.00022	J	mg/m³	2	8/16/2017
Benzyl chloride	ND	0.010	0.0013		mg/m³	2	8/16/2017
Bromodichloromethane	ND	0.0054	0.00028		mg/m³	2	8/16/2017
Bromoform	ND	0.021	0.00041		mg/m³	2	8/16/2017
Bromomethane	ND	0.0079	0.00037		mg/m³	2	8/16/2017
Carbon disulfide	ND	0.0025	0.00026		mg/m³	2	8/16/2017
Carbon tetrachloride	ND	0.0051	0.0011		mg/m³	2	8/16/2017
Chlorobenzene	ND	0.0037	0.00093		mg/m³	2	8/16/2017
Chloroethane	ND	0.0021	0.00043		mg/m³	2	8/16/2017
Chloroform	ND	0.0039	0.00022		mg/m³	2	8/16/2017
Chloromethane	ND	0.0042	0.00095		mg/m³	2	8/16/2017
cis-1,2-Dichloroethene	ND	0.0032	0.00062		mg/m³	2	8/16/2017
cis-1,3-Dichloropropene	ND	0.0037	0.00044		mg/m³	2	8/16/2017
Cyclohexane	ND	0.0028	0.00059		mg/m³	2	8/16/2017
Dibromochloromethane	ND	0.0069	0.00043		mg/m³	2	8/16/2017
Dichlorodifluoromethane	0.0020	0.0040	0.00025	J	mg/m³	2	8/16/2017
Ethyl acetate	ND	0.0073	0.001		mg/m³	2	8/16/2017
Ethylbenzene	ND	0.0035	0.00026		mg/m³	2	8/16/2017
Freon-113	0.00062	0.0062	0.00023	J	mg/m³	2	8/16/2017
Freon-114	ND	0.028	0.00029		mg/m³	2	8/16/2017
Heptane	ND	0.0033	0.00028		mg/m³	2	8/16/2017
Hexachlorobutadiene	ND	0.0086	0.0009		mg/m³	2	8/16/2017
Hexane	ND	0.0071	0.0005		mg/m³	2	8/16/2017
Isopropyl Alcohol	0.036	0.0099	0.00077		mg/m³	2	8/16/2017
m,p-Xylene	ND	0.0070	0.00044		mg/m³	2	8/16/2017
Methyl tert-butyl ether	ND	0.0029	0.00017		mg/m³	2	8/16/2017
Methylene chloride	0.0038	0.028	0.0028	J	mg/m³	2	8/16/2017
Naphthalene	ND	0.0042	0.0012		mg/m³	2	8/16/2017
o-Xylene	ND	0.0035	0.00022		mg/m³	2	8/16/2017
Propene	ND	0.014	0.00039		mg/m³	2	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

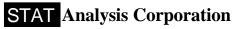
Qualifiers:

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R - RPD outside accepted recovery limits

E - Value above quantitation range



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**Date Reported:** August 25, 2017

ANALYTICAL RESULTS

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

**Lab ID:** 17080520-005

**Client Sample ID:** SV-5

**Collection Date:** 8/14/2017 12:30:00 PM

Matrix: AIR

Analyses	Resul	t RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in A	Air by GC/MS	TO-15		Prep	Date: <b>8/16/</b>	2017	Analyst: AOA
Styrene	ND	0.0034	0.00081		mg/m³	2	8/16/2017
Tetrachloroethene	0.52	0.0055	0.0004		mg/m³	2	8/16/2017
Tetrahydrofuran	ND	0.0060	0.0011		mg/m³	2	8/16/2017
Toluene	ND	0.0030	0.00034		mg/m³	2	8/16/2017
trans-1,2-Dichloroethene	ND	0.0032	0.00022		mg/m³	2	8/16/2017
trans-1,3-Dichloropropene	ND	0.0037	0.0037		mg/m³	2	8/16/2017
Trichloroethene	0.026	0.0043	0.00033		mg/m³	2	8/16/2017
Trichlorofluoromethane	0.0018	0.0045	0.00029	J	mg/m³	2	8/16/2017
Vinyl acetate	ND	0.028	0.0011		mg/m³	2	8/16/2017
Vinyl chloride	ND	0.0021	0.00017		mg/m³	2	8/16/2017
Xylenes, Total	ND	0.011	0.00065		mg/m³	2	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

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R - RPD outside accepted recovery limits

E - Value above quantitation range

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**Date Reported:** August 25, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

**Lab ID:** 17080520-006

**Client Sample ID:** SV-6

**Collection Date:** 8/14/2017 12:35:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in	Air by GC/MS TC	)-15		Prep l	Date: <b>8/16/</b>	2017	Analyst: AOA
1,1,1-Trichloroethane	ND	0.37	0.018		ppbv	1	8/16/2017
1,1,2,2-Tetrachloroethane	ND	0.37	0.026		ppbv	1	8/16/2017
1,1,2-Trichloroethane	ND	0.37	0.048		ppbv	1	8/16/2017
1,1-Dichloroethane	ND	0.37	0.016		ppbv	1	8/16/2017
1,1-Dichloroethene	ND	0.37	0.024		ppbv	1	8/16/2017
1,2,4-Trichlorobenzene	ND	0.37	0.071		ppbv	1	8/16/2017
1,2,4-Trimethylbenzene	0.075	0.37	0.021	J	ppbv	1	8/16/2017
1,2-Dibromoethane	ND	0.37	0.041		ppbv	1	8/16/2017
1,2-Dichlorobenzene	ND	0.37	0.03		ppbv	1	8/16/2017
1,2-Dichloroethane	ND	0.37	0.043		ppbv	1	8/16/2017
1,2-Dichloropropane	ND	0.37	0.069		ppbv	1	8/16/2017
1,3,5-Trimethylbenzene	ND	0.37	0.026		ppbv	1	8/16/2017
1,3-Butadiene	ND	0.37	0.088		ppbv	1	8/16/2017
1,3-Dichlorobenzene	ND	0.37	0.028		ppbv	1	8/16/2017
1,4-Dichlorobenzene	ND	0.37	0.032		ppbv	1	8/16/2017
1,4-Dioxane	ND	0.94	0.15		ppbv	1	8/16/2017
2-Butanone	0.24	0.94	0.16	J	ppbv	1	8/16/2017
2-Hexanone	ND	1.9	0.24		ppbv	1	8/16/2017
4-Ethyltoluene	ND	0.37	0.039		ppbv	1	8/16/2017
4-Methyl-2-pentanone	ND	1.9	0.13		ppbv	1	8/16/2017
Acetone	2.2	3.7	0.34	J*	ppbv	1	8/16/2017
Benzene	0.037	0.37	0.031	J	ppbv	1	8/16/2017
Benzyl chloride	ND	0.94	0.11		ppbv	1	8/16/2017
Bromodichloromethane	ND	0.37	0.019		ppbv	1	8/16/2017
Bromoform	ND	0.94	0.018		ppbv	1	8/16/2017
Bromomethane	0.056	0.94	0.044	J	ppbv	1	8/16/2017
Carbon disulfide	ND	0.37	0.038		ppbv	1	8/16/2017
Carbon tetrachloride	ND	0.37	0.084		ppbv	1	8/16/2017
Chlorobenzene	ND	0.37	0.094		ppbv	1	8/16/2017
Chloroethane	ND	0.37	0.076		ppbv	1	8/16/2017
Chloroform	0.075	0.37	0.021	J	ppbv	1	8/16/2017
Chloromethane	ND	0.94	0.21		ppbv	1	8/16/2017
cis-1,2-Dichloroethene	ND	0.37	0.073		ppbv	1	8/16/2017
cis-1,3-Dichloropropene	ND	0.37	0.045		ppbv	1	8/16/2017
Cyclohexane	ND	0.37	0.08		ppbv	1	8/16/2017
Dibromochloromethane	ND	0.37	0.023		ppbv	1	8/16/2017
Dichlorodifluoromethane	0.45	0.37	0.023		ppbv	1	8/16/2017
Ethyl acetate	ND	0.94	0.13		ppbv	1	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

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E - Value above quantitation range

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Date Reported: August 25, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

Lab ID: 17080520-006 **Client Sample ID: SV-6** 

**Collection Date:** 8/14/2017 12:35:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in A	Air by GC/MS	ГО-15		Prep	Date: <b>8/16/</b>	2017	Analyst: AOA
Ethylbenzene	ND	0.37	0.027		ppbv	1	8/16/2017
Freon-113	0.075	0.37	0.014	J	ppbv	1	8/16/2017
Freon-114	ND	1.9	0.019		ppbv	1	8/16/2017
Heptane	ND	0.37	0.031		ppbv	1	8/16/2017
Hexachlorobutadiene	ND	0.37	0.039		ppbv	1	8/16/2017
Hexane	ND	0.94	0.066		ppbv	1	8/16/2017
Isopropyl Alcohol	0.26	1.9	0.14	J	ppbv	1	8/16/2017
m,p-Xylene	0.056	0.75	0.047	J	ppbv	1	8/16/2017
Methyl tert-butyl ether	ND	0.37	0.021		ppbv	1	8/16/2017
Methylene chloride	0.56	3.7	0.37	J	ppbv	1	8/16/2017
Naphthalene	0.11	0.37	0.11	J	ppbv	1	8/16/2017
o-Xylene	0.037	0.37	0.024	J	ppbv	1	8/16/2017
Propene	0.13	3.7	0.1	J	ppbv	1	8/16/2017
Styrene	ND	0.37	0.088		ppbv	1	8/16/2017
Tetrachloroethene	3.8	0.37	0.027		ppbv	1	8/16/2017
Tetrahydrofuran	ND	0.94	0.18		ppbv	1	8/16/2017
Toluene	ND	0.37	0.042		ppbv	1	8/16/2017
trans-1,2-Dichloroethene	ND	0.37	0.026		ppbv	1	8/16/2017
trans-1,3-Dichloropropene	ND	0.37	0.37		ppbv	1	8/16/2017
Trichloroethene	ND	0.37	0.029		ppbv	1	8/16/2017
Trichlorofluoromethane	0.24	0.37	0.024	J	ppbv	1	8/16/2017
Vinyl acetate	ND	3.7	0.15		ppbv	1	8/16/2017
Vinyl chloride	ND	0.37	0.032		ppbv	1	8/16/2017
Xylenes, Total	0.094	1.1	0.069	J	ppbv	1	8/16/2017
Volatile Organic Compounds in A	ir by GC/MS	ΓΟ-15		Prep	Date: <b>8/16/</b>	2017	Analyst: AOA
1,1,1-Trichloroethane	ND	0.0020	0.000098		mg/m³	1	8/16/2017
1,1,2,2-Tetrachloroethane	ND	0.0026	0.00018		mg/m³	1	8/16/2017
1,1,2-Trichloroethane	ND	0.0020	0.00026		mg/m³	1	8/16/2017
1,1-Dichloroethane	ND	0.0015	0.000066		mg/m³	1	8/16/2017
1,1-Dichloroethene	ND	0.0015	0.000094		mg/m³	1	8/16/2017
1,2,4-Trichlorobenzene	ND	0.0028	0.00053		mg/m³	1	8/16/2017
1,2,4-Trimethylbenzene	0.00037	0.0018	0.0001	J	mg/m³	1	8/16/2017
1,2-Dibromoethane	ND	0.0029	0.00031		mg/m³	1	8/16/2017
1,2-Dichlorobenzene	ND	0.0023	0.00018		mg/m³	1	8/16/2017
1,2-Dichloroethane	ND	0.0015	0.00018		mg/m³	1	8/16/2017
1,2-Dichloropropane	ND	0.0017	0.00032		mg/m³	1	8/16/2017
1,3,5-Trimethylbenzene	ND	0.0018	0.00013		mg/m³	1	8/16/2017
1,3-Butadiene	ND	0.00083	0.00019		mg/m³	1	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

2242 West Harrison St., Suite 200, Chicago, IL 60612-3766

Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com

Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 25, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

**Lab ID:** 17080520-006

**Client Sample ID:** SV-6

**Collection Date:** 8/14/2017 12:35:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in	n Air by GC/MS	ΓΟ-15		Prep	Date: <b>8/16</b> /	2017	Analyst: AOA
1,3-Dichlorobenzene	ND	0.0023	0.00017	•	mg/m³	1	8/16/2017
1,4-Dichlorobenzene	ND	0.0023	0.00019		mg/m³	1	8/16/2017
1,4-Dioxane	ND	0.0034	0.00054		mg/m³	1	8/16/2017
2-Butanone	0.00072	0.0028	0.00046	J	mg/m³	1	8/16/2017
2-Hexanone	ND	0.0077	0.00097		mg/m³	1	8/16/2017
4-Ethyltoluene	ND	0.0018	0.00019		mg/m³	1	8/16/2017
4-Methyl-2-pentanone	ND	0.0077	0.00052		mg/m³	1	8/16/2017
Acetone	0.0053	0.0089	0.00082	J*	mg/m³	1	8/16/2017
Benzene	0.00012	0.0012	0.0001	J	mg/m³	1	8/16/2017
Benzyl chloride	ND	0.0048	0.00059		mg/m³	1	8/16/2017
Bromodichloromethane	ND	0.0025	0.00013		mg/m³	1	8/16/2017
Bromoform	ND	0.0097	0.00019		mg/m³	1	8/16/2017
Bromomethane	0.00022	0.0036	0.00017	J	mg/m³	1	8/16/2017
Carbon disulfide	ND	0.0012	0.00012		mg/m³	1	8/16/2017
Carbon tetrachloride	ND	0.0024	0.00053		mg/m³	1	8/16/2017
Chlorobenzene	ND	0.0017	0.00043		mg/m³	1	8/16/2017
Chloroethane	ND	0.00099	0.0002		mg/m³	1	8/16/2017
Chloroform	0.00037	0.0018	0.0001	J	mg/m³	1	8/16/2017
Chloromethane	ND	0.0019	0.00044		mg/m³	1	8/16/2017
cis-1,2-Dichloroethene	ND	0.0015	0.00029		mg/m³	1	8/16/2017
cis-1,3-Dichloropropene	ND	0.0017	0.0002		mg/m³	1	8/16/2017
Cyclohexane	ND	0.0013	0.00027		mg/m³	1	8/16/2017
Dibromochloromethane	ND	0.0032	0.0002		mg/m³	1	8/16/2017
Dichlorodifluoromethane	0.0022	0.0019	0.00011		mg/m³	1	8/16/2017
Ethyl acetate	ND	0.0034	0.00048		mg/m³	1	8/16/2017
Ethylbenzene	ND	0.0016	0.00012		mg/m³	1	8/16/2017
Freon-113	0.00057	0.0029	0.00011	J	mg/m³	1	8/16/2017
Freon-114	ND	0.013	0.00013		mg/m³	1	8/16/2017
Heptane	ND	0.0015	0.00013		mg/m³	1	8/16/2017
Hexachlorobutadiene	ND	0.0040	0.00041		mg/m³	1	8/16/2017
Hexane	ND	0.0033	0.00023		mg/m³	1	8/16/2017
Isopropyl Alcohol	0.00064	0.0046	0.00036	J	mg/m³	1	8/16/2017
m,p-Xylene	0.00024	0.0033	0.0002	J	mg/m³	1	8/16/2017
Methyl tert-butyl ether	ND	0.0014	0.000076		mg/m³	1	8/16/2017
Methylene chloride	0.0020	0.013	0.0013	J	mg/m³	1	8/16/2017
Naphthalene	0.00059	0.0020	0.00056	J	mg/m³	1	8/16/2017
o-Xylene	0.00016	0.0016	0.0001	J	mg/m³	1	8/16/2017
Propene	0.00023	0.0064	0.00018	J	mg/m³	1	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

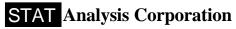
Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 25, 2017

ANALYTICAL RESULTS

**Date Printed:** August 25, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080520 Revision 0

**Project:** PELO-2017-68, Franklin Centre, 7201 S. 76th St., Fr

**Lab ID:** 17080520-006

**Client Sample ID:** SV-6

**Collection Date:** 8/14/2017 12:35:00 PM

Matrix: AIR

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds in Air	by GC/MS T	TO-15		Prep	Date: 8/16/2	2017	Analyst: AOA
Styrene	ND	0.0016	0.00038		mg/m³	1	8/16/2017
Tetrachloroethene	0.026	0.0025	0.00018		mg/m³	1	8/16/2017
Tetrahydrofuran	ND	0.0028	0.00052		mg/m³	1	8/16/2017
Toluene	ND	0.0014	0.00016		mg/m³	1	8/16/2017
trans-1,2-Dichloroethene	ND	0.0015	0.0001		mg/m³	1	8/16/2017
trans-1,3-Dichloropropene	ND	0.0017	0.0017		mg/m³	1	8/16/2017
Trichloroethene	ND	0.0020	0.00015		mg/m³	1	8/16/2017
Trichlorofluoromethane	0.0014	0.0021	0.00013	J	mg/m³	1	8/16/2017
Vinyl acetate	ND	0.013	0.00053		mg/m³	1	8/16/2017
Vinyl chloride	ND	0.00096	0.000081		mg/m³	1	8/16/2017
Xylenes, Total	0.00041	0.0049	0.0003	J	mg/m³	1	8/16/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

2242 W. Harrison Suite 200, Chicago, Illinois 60612 Phone: (312) 733-0551 Fax: (312) 733-2386 e-mail address: STATinfo@STATAnglysis.com

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Sampler(s): Joe Berkel	, , , , , , , , , , , , , , , , , , , ,				***								l								
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Received by: (Signature)			Date/7	Time:				D =	H <sub>2</sub> SC	O <sub>4</sub> E	= HC	Cl F	= 50	35/En	Core	G = 0	Other			Temperature: 3	> °C

#### Sample Receipt Checklist

Client Name APEX		Date and Time Received:	8/15/2017 1:30:00 PM
Work Order Number 17080520		Received by: MGK	
Checklist completed by: Stenature Date	15/17	Reviewed by: K	8/15/17 Date
Matrix: Carrier name	Client Delivered		
Shipping container/cooler in good condition?	Yes 🗹	No Not Present	
Custody seals intact on shippping container/cooler?	Yes	No ☐ Not Present ✓	
Custody seals intact on sample bottles?	Yes	No ☐ Not Present ✓	
Chain of custody present?	Yes 🗹	No 🗌	
Chain of custody signed when relinquished and received?	Yes 🗸	No 🗆	
Chain of custody agrees with sample labels/containers?	Yes 🗸	No 🗌	
Samples in proper container/bottle?	Yes 🗹	No 🗌	
Sample containers intact?	Yes 🗹	No 🗌	
Sufficient sample volume for indicated test?	Yes 🗹	No 🗌	
All samples received within holding time?	Yes 🗹	No 🗌	
Container or Temp Blank temperature in compliance?	Yes 🗸	No Temperatur	e 3.3 °C.★
Water - VOA vials have zero headspace? No VOA vials subr	mitted	Yes No No	
Water - Samples pH checked?	Yes 📓	No Checked by:	
Water - Samples properly preserved?	Yes 📓	No PH Adjusted?	
Any No response must be detailed in the comments section below.			
comments: *TO canisters were	receive	ed in ambieu	nt conditions
Client / Person Date contacted:		Contacted by:	
Response:			

2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

August 23, 2017

Apex Companies, LLC 1701 East Woodfield Rd, Suite 333 Schaumburg, IL 60173

Telephone: (847) 956-8589 Fax: (847) 956-8619

Analytical Report for STAT Work Order: 17080612 Revision 0

RE: PECO-2017-68, Franklin Centre, 7201 S. 76th St., Franklin, WI

Dear Joseph Becker:

STAT Analysis received 5 samples for the referenced project on 8/17/2017 4:55:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements specifed in WI DNR Chapter NR 149 (Certification Number 399099910). Analyses were performed in accordance with methods as referenced on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. A listing of accredited methods/parameters can also be provided.

For sample results requiring adjustment for dilutions, the detection and reporting limits are adjusted for the corresponding dilution factor. Analytical results expressed on a dry weight basis have units of mg/Kg-dry or  $\mu$ g/Kg-dry on the analytical report. Corresponding reporting limits are adjusted for dry weight.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Martin Kucan

Project Manager

Martin Vyman

The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples tested. If you have received this report in error, please notify us immediately by phone. This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This analytical report shall become property of the Customer upon payment in full. Otherwise, STAT will be under no obligation to support, defend or discuss the analytical report.

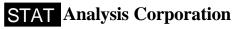
**Date:** August 23, 2017

Client: Apex Companies, LLC

Project: PECO-2017-68, Franklin Centre, 7201 S. 76th St., Fran Work Order Sample Summary

Work Order: 17080612 Revision 0

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
17080612-001A	MW-1		8/17/2017 12:05:00 PM	8/17/2017
17080612-002A	MW-2		8/17/2017 11:20:00 AM	8/17/2017
17080612-003A	MW-3		8/17/2017 10:35:00 AM	8/17/2017
17080612-004A	Duplicate		8/17/2017	8/17/2017
17080612-005A	Trip Blank			8/17/2017



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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 23, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 23, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080612 Revision 0

**Project:** PECO-2017-68, Franklin Centre, 7201 S. 76th St., Fra

Lab ID: 17080612-001 Client Sample ID: MW-1

Collection Date: 8/17/2017 12:05:00 PM

Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	sv	V8260B (S)	N5030B)	Prep [	Date:		Analyst: ART
Acetone	ND	0.020	0.0031		mg/L	1	8/22/2017
Benzene	ND	0.0050	0.0002		mg/L	1	8/22/2017
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
Bromoform	ND	0.0050	0.0003		mg/L	1	8/22/2017
Bromomethane	ND	0.010	0.002		mg/L	1	8/22/2017
2-Butanone	ND	0.020	0.0016		mg/L	1	8/22/2017
Carbon disulfide	ND	0.010	0.0003		mg/L	1	8/22/2017
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	8/22/2017
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	8/22/2017
Chloroethane	ND	0.010	0.0005		mg/L	1	8/22/2017
Chloroform	ND	0.0050	0.0001		mg/L	1	8/22/2017
Chloromethane	ND	0.010	0.0003		mg/L	1	8/22/2017
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	8/22/2017
cis-1,2-Dichloroethene	ND	0.0050	0.0002		mg/L	1	8/22/2017
trans-1,2-Dichloroethene	ND	0.0050	0.0005		mg/L	1	8/22/2017
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	8/22/2017
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	8/22/2017
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	8/22/2017
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	8/22/2017
2-Hexanone	ND	0.020	0.0002		mg/L	1	8/22/2017
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	8/22/2017
Methylene chloride	ND	0.0050	0.0002		mg/L	1	8/22/2017
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	8/22/2017
Styrene	ND	0.0050	0.0003		mg/L	1	8/22/2017
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	8/22/2017
Tetrachloroethene	ND	0.0050	0.0003		mg/L	1	8/22/2017
Toluene	ND	0.0050	0.0004		mg/L	1	8/22/2017
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	8/22/2017
Trichloroethene	ND	0.0050	0.0003		mg/L	1	8/22/2017
Vinyl chloride	ND	0.0020	0.0003		mg/L	1	8/22/2017
Xylenes, Total	ND	0.015	0.001		mg/L	1	8/22/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 23, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 23, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080612 Revision 0

**Project:** PECO-2017-68, Franklin Centre, 7201 S. 76th St., Fra

Lab ID: 17080612-002 Client Sample ID: MW-2

Collection Date: 8/17/2017 11:20:00 AM

Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	sv	V8260B (S)	N5030B)	Prep [	Date:		Analyst: ART
Acetone	ND	0.020	0.0031		mg/L	1	8/22/2017
Benzene	ND	0.0050	0.0002		mg/L	1	8/22/2017
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
Bromoform	ND	0.0050	0.0003		mg/L	1	8/22/2017
Bromomethane	ND	0.010	0.002		mg/L	1	8/22/2017
2-Butanone	ND	0.020	0.0016		mg/L	1	8/22/2017
Carbon disulfide	ND	0.010	0.0003		mg/L	1	8/22/2017
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	8/22/2017
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	8/22/2017
Chloroethane	ND	0.010	0.0005		mg/L	1	8/22/2017
Chloroform	ND	0.0050	0.0001		mg/L	1	8/22/2017
Chloromethane	ND	0.010	0.0003		mg/L	1	8/22/2017
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	8/22/2017
cis-1,2-Dichloroethene	ND	0.0050	0.0002		mg/L	1	8/22/2017
trans-1,2-Dichloroethene	ND	0.0050	0.0005		mg/L	1	8/22/2017
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	8/22/2017
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	8/22/2017
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	8/22/2017
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	8/22/2017
2-Hexanone	ND	0.020	0.0002		mg/L	1	8/22/2017
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	8/22/2017
Methylene chloride	ND	0.0050	0.0002		mg/L	1	8/22/2017
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	8/22/2017
Styrene	ND	0.0050	0.0003		mg/L	1	8/22/2017
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	8/22/2017
Tetrachloroethene	ND	0.0050	0.0003		mg/L	1	8/22/2017
Toluene	ND	0.0050	0.0004		mg/L	1	8/22/2017
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	8/22/2017
Trichloroethene	ND	0.0050	0.0003		mg/L	1	8/22/2017
Vinyl chloride	ND	0.0020	0.0003		mg/L	1	8/22/2017
Xylenes, Total	ND	0.015	0.001		mg/L	1	8/22/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

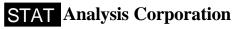
Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 23, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 23, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080612 Revision 0

**Project:** PECO-2017-68, Franklin Centre, 7201 S. 76th St., Fra

Lab ID: 17080612-003 Client Sample ID: MW-3

Collection Date: 8/17/2017 10:35:00 AM

Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	sv	V8260B (S)	N5030B)	Prep [	Date:		Analyst: ART
Acetone	ND	0.020	0.0031		mg/L	1	8/22/2017
Benzene	ND	0.0050	0.0002		mg/L	1	8/22/2017
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
Bromoform	ND	0.0050	0.0003		mg/L	1	8/22/2017
Bromomethane	ND	0.010	0.002		mg/L	1	8/22/2017
2-Butanone	ND	0.020	0.0016		mg/L	1	8/22/2017
Carbon disulfide	ND	0.010	0.0003		mg/L	1	8/22/2017
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	8/22/2017
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	8/22/2017
Chloroethane	ND	0.010	0.0005		mg/L	1	8/22/2017
Chloroform	ND	0.0050	0.0001		mg/L	1	8/22/2017
Chloromethane	ND	0.010	0.0003		mg/L	1	8/22/2017
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	8/22/2017
cis-1,2-Dichloroethene	ND	0.0050	0.0002		mg/L	1	8/22/2017
trans-1,2-Dichloroethene	ND	0.0050	0.0005		mg/L	1	8/22/2017
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	8/22/2017
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	8/22/2017
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	8/22/2017
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	8/22/2017
2-Hexanone	ND	0.020	0.0002		mg/L	1	8/22/2017
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	8/22/2017
Methylene chloride	ND	0.0050	0.0002		mg/L	1	8/22/2017
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	8/22/2017
Styrene	ND	0.0050	0.0003		mg/L	1	8/22/2017
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	8/22/2017
Tetrachloroethene	ND	0.0050	0.0003		mg/L	1	8/22/2017
Toluene	ND	0.0050	0.0004		mg/L	1	8/22/2017
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	8/22/2017
Trichloroethene	ND	0.0050	0.0003		mg/L	1	8/22/2017
Vinyl chloride	ND	0.0020	0.0003		mg/L	1	8/22/2017
Xylenes, Total	ND	0.015	0.001		mg/L	1	8/22/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

\* - Non-accredited parameter

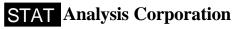
Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 23, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 23, 2017

**CLIENT:** Apex Companies, LLC

Client Sample ID: Duplicate Work Order: 17080612 Revision 0

**Project:** PECO-2017-68, Franklin Centre, 7201 S. 76th St., Fra

Lab ID: 17080612-004 Collection Date: 8/17/2017

Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	sv	V8260B (S\	W5030B)	Prep D	Date:		Analyst: ART
Acetone	ND	0.020	0.0031		mg/L	1	8/22/2017
Benzene	ND	0.0050	0.0002		mg/L	1	8/22/2017
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
Bromoform	ND	0.0050	0.0003		mg/L	1	8/22/2017
Bromomethane	ND	0.010	0.002		mg/L	1	8/22/2017
2-Butanone	ND	0.020	0.0016		mg/L	1	8/22/2017
Carbon disulfide	ND	0.010	0.0003		mg/L	1	8/22/2017
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	8/22/2017
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	8/22/2017
Chloroethane	ND	0.010	0.0005		mg/L	1	8/22/2017
Chloroform	ND	0.0050	0.0001		mg/L	1	8/22/2017
Chloromethane	ND	0.010	0.0003		mg/L	1	8/22/2017
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	8/22/2017
cis-1,2-Dichloroethene	ND	0.0050	0.0002		mg/L	1	8/22/2017
trans-1,2-Dichloroethene	ND	0.0050	0.0005		mg/L	1	8/22/2017
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	8/22/2017
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	8/22/2017
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	8/22/2017
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	8/22/2017
2-Hexanone	ND	0.020	0.0002		mg/L	1	8/22/2017
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	8/22/2017
Methylene chloride	ND	0.0050	0.0002		mg/L	1	8/22/2017
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	8/22/2017
Styrene	ND	0.0050	0.0003		mg/L	1	8/22/2017
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	8/22/2017
Tetrachloroethene	ND	0.0050	0.0003		mg/L	1	8/22/2017
Toluene	ND	0.0050	0.0004		mg/L	1	8/22/2017
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	8/22/2017
Trichloroethene	ND	0.0050	0.0003		mg/L	1	8/22/2017
Vinyl chloride	ND	0.0020	0.0003		mg/L	1	8/22/2017
Xylenes, Total	ND	0.015	0.001		mg/L	1	8/22/2017

ND - Not Detected at the Reporting Limit

J - Analyte detected below reporting limit

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

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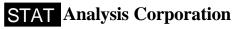
Qualifiers:

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

**Date Reported:** August 23, 2017

**ANALYTICAL RESULTS** 

**Date Printed:** August 23, 2017

**CLIENT:** Apex Companies, LLC

Work Order: 17080612 Revision 0

**Project:** PECO-2017-68, Franklin Centre, 7201 S. 76th St., Fra

**Lab ID:** 17080612-005

Client Sample ID: Trip Blank

**Collection Date** 

**Matrix:** TRIP BLANK

Analyses	Result	RI	MDL	Qualifier	Units	DF	Date Analyzed	
Volatile Organic Compounds by GC/MS	SW8260		(SW5030B)	Prep Date:			Analyst: ART	
Acetone	ND	0.020	0.0031		mg/L	1	8/22/2017	
Benzene	ND	0.0050	0.0002		mg/L	1	8/22/2017	
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	8/22/2017	
Bromoform	ND	0.0050	0.0003		mg/L	1	8/22/2017	
Bromomethane	ND	0.010	0.002		mg/L	1	8/22/2017	
2-Butanone	ND	0.020	0.0016		mg/L	1	8/22/2017	
Carbon disulfide	ND	0.010	0.0003		mg/L	1	8/22/2017	
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	8/22/2017	
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	8/22/2017	
Chloroethane	ND	0.010	0.0005		mg/L	1	8/22/2017	
Chloroform	ND	0.0050	0.0001		mg/L	1	8/22/2017	
Chloromethane	ND	0.010	0.0003		mg/L	1	8/22/2017	
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	8/22/2017	
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017	
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017	
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	8/22/2017	
cis-1,2-Dichloroethene	ND	0.0050	0.0002		mg/L	1	8/22/2017	
trans-1,2-Dichloroethene	ND	0.0050	0.0005		mg/L	1	8/22/2017	
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	8/22/2017	
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	8/22/2017	
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	8/22/2017	
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	8/22/2017	
2-Hexanone	ND	0.020	0.0002		mg/L	1	8/22/2017	
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	8/22/2017	
Methylene chloride	ND	0.0050	0.0002		mg/L	1	8/22/2017	
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	8/22/2017	
Styrene	ND	0.0050	0.0003		mg/L	1	8/22/2017	
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	8/22/2017	
Tetrachloroethene	ND	0.0050	0.0003		mg/L	1	8/22/2017	
Toluene	ND	0.0050	0.0004		mg/L	1	8/22/2017	
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	8/22/2017	
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	8/22/2017	
Trichloroethene	ND	0.0050	0.0003		mg/L	1	8/22/2017	
Vinyl chloride	ND	0.0020	0.0003		mg/L	1	8/22/2017	
Xylenes, Total	ND	0.015	0.001		mg/L	1	8/22/2017	

ND - Not Detected at the Reporting Limit

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HT - Sample received past holding time

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Qualifiers:

RL/MDL - Reporting Limit / Method Detection Limit for the analysis

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Analysis Corporation
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e-mail address: STATinfo@STATAnalysis.com AIHA, NVLAP and NELAP accredited

	CHAIN OF CUS	STODY RECORD	$N^{\underline{0}}$ :	86393	39 Page :	of )	
Company: Apex Company		P.O. No.:			1 460.	- UI	
Company: Apex Company: 5 Project Number: PECO 2017-68	Client Tracking No.:			7//	7////	7//	
Project Name: Franklin Centre Project Location: 7601 5. 76th St., Franklin, v		Quote No.:		///			
Project Location: 7601 5. 76th St., Franklin, v	21		////				
Sampler(s): Joe Buker			////				
Report To: Je Berlie/ Phone:	847-452-7782		////			Turn Around:	
Stere Neulin Fax:	becker @ a sexcorus,		////			St.	
QC Level: 1 2 3 4 e-mail:	becker @ a sexionus,	m ////	////		///	Results Needed:	
Client Sample Number/Description: Date Taken Time	Matrix  Comb. No. of Containers					am/pm	
Mr. 1 8-17-17 12:05 6	5- X = 3		$\overline{}$	H	Remarks	Lab No.:	
Mw.7 1 1120	XII			++++		002	
	)   <u>/</u> x					003	
Mn-3 Duplicate W		<b>Z</b>				004	
Trip Blank	Y Z	X				005	
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4							
Relinquished by: (Signature)	Date/Time: 8 12/16:55	Comments: 0				N	
Received by: (Signature) HMM	Date/Time: \$//7/1/1	Comments: Pepoit	~ MDL>		Laboratory Work Order No.:		
Relinquished by: (Signature)		*			170806	16	
Received by: (Signature)	Date/Time: 16185				Received on Ice: Yes	No.	
Relinquished by: (Signature)	Date/Time:	Preservation Code: A = None	$B = HNO_3$ $C = ?$	NaOH			
Received by: (Signature)	Date/Time:	$D = H_0 S O_4$ $E = HC1$ $E = 5$		1/2	Temperature: 4.7 °C		

#### Sample Receipt Checklist

Client Name APEX		Date and Tim	ne Received:	8/17/2017 4:55:00 PM
Work Order Number 17080612			JNW	
Checklist completed by:  Signature  Date	7/17	Reviewed by:	Fe	8/18/17 Date
Matrix: Carrier name	Client Delivered			,
Shipping container/cooler in good condition?	Yes 🗹	No 🗌	Not Present	
Custody seals intact on shippping container/cooler?	Yes	No 🗌	Not Present 🗸	
Custody seals intact on sample bottles?	Yes	No 🗌	Not Present 🗹	
Chain of custody present?	Yes 🗹	No 🗌		
Chain of custody signed when relinquished and received?	Yes 🗸	No 🗌		
Chain of custody agrees with sample labels/containers?	Yes 🗹	No 🗌		
Samples in proper container/bottle?	Yes 🗹	No 🗆		
Sample containers intact?	Yes 🗹	No 🗌		
Sufficient sample volume for indicated test?	Yes 🗹	No 🗌		
All samples received within holding time?	Yes 🗸	No 🗌		
Container or Temp Blank temperature in compliance?	Yes 🗸	No 🗌	Temperature	4.7 °C
Water - VOA vials have zero headspace? No VOA vials subm	nitted	Yes 🗸	No 🗌	
Water - Samples pH checked?	Yes 📰	No 🗐	Checked by:	
Water - Samples properly preserved?	Yes 📓	No 💹	pH Adjusted?	The state of the s
Any No response must be detailed in the comments section below.				
Comments:				
Client / Person contacted: Date contacted:		Conta	cted by:	
Response:		T. C. TOTAL STANLAR		