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August 21, 2014

Tim Hornosky, P.G.
South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Remedial Investigation Report
Wix Filtration Corp LLC Plant Site, Dillon
Voluntary Cleanup Contract No. 13-5996-RP

Dear Mr. Hornosky:

On behalf of Wix Filtration Corp. LLC (Wix), WSP prepared a Remedial Investigation (RI) Report for the Wix facility located in Dillon, South Carolina (Site). Enclosed are two hard copies and one electronic (compact disc) copy of the RI Report. WSP is submitting this document in accordance with Paragraph 3.B of Voluntary Cleanup Contract 13-5996-RP between the South Carolina Department of Health and Environmental Control (SCDHEC) and Wix. The RI Report presents the results of the investigation activities performed in accordance with the SCDHEC-approved Work Plan to further characterize the conditions and associated risks in the area of the historical toluene release at the site.

If you have any questions concerning the RI Report, or need any additional information, please do not hesitate to contact me or Kenny McCutcheon of Wix at (843) 774-5623.

Sincerely yours,

Robert E. Johnson

Robert E. Johnson, Ph.D., P.G.
Senior Technical Manager - Environmental

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Enclosures

cc/encl.: Kenny McCutcheon, Wix Filtration Corp LLC
Keith Clark, Affinia Group
James Hiller, ERM
Weston Adams, Esquire, McAngus, Goudelock & Courie LLC

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REMEDIAL INVESTIGATION REPORT

Wix Filtration Corp LLC Facility

Dillon, South Carolina

August 21, 2014

REMEDIAL INVESTIGATION REPORT

August 21, 2014

Client

Wix Filtration Corp LLC
Dillon, South Carolina

Consultant

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1 Introduction

On behalf of Wix Filtration Corp LLC (Wix), WSP has prepared this Remedial Investigation (RI) Report for the Wix facility in Dillon, South Carolina (Site) in fulfillment of Item 3.B of Voluntary Cleanup Contract (VCC) Number 13-5996-RP. The objective of the RI was to gather sufficient data to further characterize the nature and extent of impacts to Site environmental media resulting from a toluene release, the associated fate and transport of toluene within the environmental media, and identification of impacts that pose an unacceptable risk to human health. RI field activities were conducted between April 2014 and June 2014 in accordance with WSP's RI Work Plan, dated January 31, 2014. This RI Report summarizes all previous environmental investigation conducted at the Site between 2005 and 2013; discusses the data gathering activities completed during the Site RI; describes the nature and extent of toluene present in Site media (i.e., soil, groundwater, and sub-slab vapor); the fate and transport of toluene in Site media; and human health risks resulting from the potential exposure to chemicals of potential concern (COPCs) in Site media.

The RI Report has been prepared using the 1988 U.S. Environmental Protection Agency (EPA) Guidance for Conducting Remedial Investigations and Feasibility Studies under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The RI Report includes the following elements:

- Site background
- Site investigations
- Site physical characteristics
- nature and extent of impacts
- fate and transport of toluene
- human health risk assessment (HHRA)

2 Site Background

2.1 Site Description

The Site is located at 1422 Wix Road in Dillon, Dillon County, South Carolina (Figure 2-1) and consists of approximately 80 acres of land. The facility includes a 376,000-square-foot manufacturing building (Figure 2-2) and several small ancillary structures located to the east (hazardous waste and tractor shed), north (fire water pump house), and west (paint storage building). Paved parking and loading areas are located to the north and south of the manufacturing building. Fifteen acres of the property, located to the north and east of the manufacturing building, are leased to a local farmer. According to facility personnel, Progress Energy owns and operates a power substation on approximately 4 acres of land in the northeast portion of the Wix property.

The Site is located in a mixed industrial, agricultural, and residential area. The property is bordered to the north by farmland and the Franco Manufacturing facility, to the east by cultivated and wooded farmland, to the south by farmland and a small number of residential properties, and to the west by the CSX Transportation railroad line and residence/small business.

The plant obtains both potable and production water from Trico Water Company, Inc., which is located in the city of Dillon. No water supply wells are located on the Wix property.

2.2 Site History

The facility was constructed in 1977 on agricultural land by the Dana Corporation. The Affinia Group acquired the facility in November 2004. Plant operations from 1977 to present include the manufacture of fuel filters, oil filters, and air filters for automotive, diesel, racing, agricultural, and industrial applications. Activities conducted at the facility include metal parts fabrication, element curing, assembly, painting, printing, and packaging and shipment.

During the early years of manufacturing operations, toluene-containing paints were prepared in the southwest portion of the facility. Based on available information, it is believed the toluene was stored in an underground storage tank (UST) outside of the building and dispensed via a sub-grade piping network to various locations within the manufacturing building. After closing of the UST in the mid-1980s, toluene used in the paint formulation was stored in drums inside the paint room located in the southwestern portion of the building.

2.3 Previous Environmental Investigation

In October 2005, workers detected a paint-like odor in shallow soil material excavated during repairs to an underground water line west of the manufacturing building. Based on this finding, eight soil samples and three groundwater samples were collected from the area and analyzed for volatile organic compounds (VOCs) typically associated with paint products to determine the presence/absence of these chemicals in the area (Environmental Resource Management [ERM] 2011a). The analytical results for the soil samples indicated elevated toluene concentrations, with a maximum detection of 1,630 milligrams per kilogram (mg/kg). Toluene was detected in the groundwater samples from temporary monitoring wells at concentrations ranging from 7,610 micrograms per liter (µg/l) to 184,000 µg/l; other VOCs were detected at lower concentrations. Upon receipt of the sampling data, Wix provided written notification of the discovery of a suspected release of toluene to the South Carolina Department of Health and Environmental Control (SCDHEC) in early December 2005.

Beginning in spring 2006, SCDHEC-approved activities were conducted at the site to investigate and remediate the environmental impacts from the toluene release. These activities have included the following:

- 2006 Environmental Site Assessment (ESA) to evaluate the nature and the extent of impacts associated with the toluene release
- 2008 Remedial Options Evaluation Report and 2008 Remedial Action Plan (RAP) to select and implement an applicable remedial technology to mitigate the environmental impacts
- 2010 and 2011 supplemental assessment activities to further characterize toluene concentrations in soil and groundwater in the release area
- Implementation of an interim groundwater monitoring program to gather additional data on toluene concentrations in groundwater in the release area

An overview of the site activities conducted during each of these phases is provided in the following sections. A list of previously submitted documents reviewed to prepare the following discussion can be found in Appendix B of the VCC.

2.3.1 Site Assessment

After a site visit with SCDHEC representatives in January 2006, ERM prepared and submitted an ESA Work Plan to further investigate the extent of impacts associated with the toluene release incident. The assessment commenced following agency approval of the scope of work provided in ERM's Proposal for Phase II Environmental Assessment, dated September 14, 2006 and ERM's Quality Assurance Project Plan (QAPP), dated March 27, 2006. The initial investigation activities were conducted in May 2006, and involved:

- a ground-penetrating radar (GPR) evaluation in the western portion of the property to identify any and all sub-surface anomalies,
- sampling of 10 shallow soil borings (STB-1 through STB-10) in the vicinity of the presumed former underground toluene tank and
- collection of 2 sediment samples (SED-1 and SED-2) from the drainage ditch that runs northeast-southwest in the wooded area.
- Installation of 4 shallow monitoring wells MW-1 through MW-4.

Additional field investigations completed in December 2006 as part of the assessment and included the following:

- drilling and sampling of four shallow soil borings (STB-11 through STB-14) south of the apparent release area
- sampling of 3 hand auger borings (HA-1, HA-2 and HA-3) completed to a depth of 3-4 feet below ground surface (bgs) along the edge of the wooded area west of the release;
- installation and sampling of five shallow monitoring wells (MW-5 through MW-9) to the north and south of the release

The findings of the investigation were provided to SCDHEC in ERM's Data Report of Phase II Environmental Assessment, dated February 26, 2007. Locations of the borings, monitoring wells, and sediment sampling points completed during both phases of investigation are provided in Figure 2-3. All soil and groundwater samples collected from the site were shipped to a South Carolina-certified laboratory and analyzed for VOCs using EPA test methods. The assessment results were summarized in an ESA Report, which was submitted to SCDHEC in February 2007 (ERM 2007).

A total of 25 soil samples were submitted for VOC analysis during completion of the site assessment, with the majority of the samples collected from depths at or below the inferred water table at each location. The highest toluene concentrations were detected in samples from 6-8 feet bgs at the STB-2 (1,800 mg/kg) and STB-8/MW-2 (2,000 mg/kg) locations (Figure 2-3). Samples collected from a slightly shallower depth interval at the STB-1 and STB-5 boring locations had toluene concentrations below 500 mg/kg. Low levels (less than 1 mg/kg) of other volatile aromatic compounds, such as benzene and xylene isomers, were also detected in samples with elevated toluene concentrations. No VOCs were detected at concentrations greater than 0.0015 mg/kg in either the shallow

subsurface soil samples collected from borings STB-11 through STB-14 to the south or the surficial samples from the hand auger borings along the tree line.

The groundwater samples collected from wells MW-1 through MW-4 in the vicinity of the former toluene tank had high toluene concentrations that exceeded the South Carolina Maximum Contaminant Level (MCL) of 1,000 µg/l (Appendix A; R.61-58.5.N). The toluene levels detected in these samples ranged from 11,000 µg/l (MW-2) to 340,000 µg/l (MW-1). Low benzene concentrations, which were slightly above the MCL of 5 µg/l, were also found in the samples from MW-2 and MW-4. No toluene or other volatile aromatic compounds were detected in samples obtained from the wells installed north (MW-9) and south (MW-7 and MW-8) of the release area.

The sediment samples collected from the drainage ditch did not have detectable concentrations of either toluene or other volatile aromatic compounds.

2.3.2 Remedy Evaluation and Implementation

Given the detection of elevated toluene concentrations in soil and groundwater, ERM identified and evaluated remedial technologies that could be implemented to address the toluene mass identified at that time in the shallow subsurface and mitigate potential risks to human health and the environment. Based on this evaluation, an air sparge/soil vapor extraction (AS/SVE) system was recommended as the remedial measure for the impacted area. The results of this alternative evaluation were submitted to SCDHEC in ERM's Remedial Options Report, dated January 2008.

A pilot test was then conducted by ERM to assess the effectiveness of the AS/SVE technology in removing VOC mass and gather site-specific data to facilitate the design of the system. After evaluating the pilot test results, a RAP and AS/SVE system engineering design documents were prepared and submitted to SCDHEC for review and approval in October 2008. Upon regulatory approval, the AS/SVE system was installed in September-November 2009 and began operation in December 2009. The system layout and location of the equipment enclosure are shown on Figure 2-3. The system consists of five AS wells installed to the top of the clay layer and two horizontal SVE wells installed at a depth of 3.5 feet bgs. Based on the system design, air is injected into the five AS wells to release toluene-containing vapors into the vadose, or unsaturated zone, which are then removed via the SVE well. To ensure capture of the toluene-containing vapors, the SVE system was designed to extract vapors at a higher flow rate than the air is injected. The SVE off-gas is piped to an equipment trailer, where it is treated with granular activated carbon and then discharged to the atmosphere. Based on information provided in the ERM groundwater monitoring reports, the AS/SVE system has been in continuous operation since the December 2009 start-up.

2.3.3 Supplemental Assessment Activities

Since the implementation of remedial measures, supplemental assessment activities were conducted by ERM during the winters of 2011 and 2012 to gather additional data on the soil and groundwater quality in the toluene-impacted area. The February 2011 investigation involved the installation and sampling of two shallow soil borings (STB-15 and STB-16) along the west building wall to further assess soil quality in the presumed release area, and the installation of four shallow monitoring wells (MW-10 through MW-13) to characterize VOC concentrations within and hydraulically downgradient of the presumed source (Figure 2-3). Information concerning the field activities and sampling results was included in the March 2011 Semi-Annual Groundwater Monitoring Report (ERM 2011b). In February 2012, two additional monitoring wells, MW-14 and MW-15, were installed to better delineate the extent of VOC-affected groundwater in the area (Figure 2-3). The installation of these wells was in response to a SCDHEC August 8, 2011 request for supplemental assessment activities in this portion of the facility. A description of the well installation activities is provided in the March 2012 Semi-Annual Groundwater Monitoring Report (ERM 2012).

Moderate to high concentrations of toluene were detected in the near-surface soil samples from the direct-push borings. The initial round of groundwater samples were collected from wells MW-10 through MW-13 in February 2011 and from MW-14 and MW-15 in February 2012. Very low concentrations of toluene (less than 5 µg/l) were found in the groundwater samples from wells MW-10 and MW-15, which were installed in the wooded area (wetland) west (downgradient) of the suspected release area, and MW-14 located inside the manufacturing

building. Toluene concentrations above the South Carolina MCL have been detected in all semi-annual groundwater samples collected between February 2011 and February 2013 from the other well (MW-11) installed in the wooded area and MW-13 south of the former paint room near the manufacturing building. Analytical results for samples collected from well MW-12, which is north of the former paint room along the building, indicated toluene levels exceeding the MCL for the August 2011, February 2012, and August 2012 monitoring events. Additional discussion of the groundwater quality data is provided in the following section.

2.3.4 Interim Groundwater Monitoring Program

Based on the assessment findings, SCDHEC requested Wix implement an interim, semi-annual groundwater sampling program to monitor VOC concentrations in the impacted area; the sampling program commenced in August 2007. Initially, the monitoring activities involved obtaining water level data from all existing monitoring wells (MW-1 through MW-9) and collecting groundwater samples for VOC analysis from the following wells:

- MW-1
- MW-2
- MW-3
- MW-4
- MW-7

The locations of site monitoring wells are provided in Figure 2-3. As part of the supplemental assessment activities described above, additional monitoring wells installed in wooded area (MW-10, MW-11 and MW-15), in the vicinity of the inferred toluene release area along the west side of the manufacturing building (MW-12 and MW-13), and inside of the building (MW-14) have been included to the semi-annual monitoring network. The groundwater samples collected from the recently installed wells have also been analyzed for VOCs.

Based on the analytical results summarized in Appendix A, toluene is the predominant VOC detected in the groundwater samples collected during the semi-annual monitoring activities. Other volatile aromatic compounds, such as benzene, ethylbenzene and xylene isomers, have been detected at much lower concentrations in samples with correspondingly high toluene levels. For these ancillary volatile aromatics, benzene is the only compound present at concentrations above the respective South Carolina MCL of 5 µg/l. The benzene levels detected in the groundwater samples range from non-detect to 118 µg/l (Appendix B). The co-occurrence of these volatile aromatics suggests a similar rather than separate source for these constituents in the groundwater.

Figure 2-4 presents an iso-concentration map of the toluene concentrations in the upper-most portion of the groundwater zone based on the August 2012 monitoring data. For this map, the interpolated toluene distribution is shown down to 100 µg/l, which is one order of magnitude below the South Carolina MCL of 1,000 µg/l. As shown by the computer-generated contours, the toluene-affected groundwater occurs as a small, slightly elongated area with the highest concentrations in the vicinity of well MW-13 and the area to the west (MW-2, MW-3, and MW-4). Samples collected from MW-4 and MW-13 had toluene concentrations near the aqueous solubility limit for toluene – 520 milligrams per liter (mg/l) at 25 degrees Celsius – suggesting the probable presence of residual product in the saturated zone at these locations. The approximate axis of maximum toluene concentrations appears to coincide with the sub-grade pipe that likely extended from the former toluene UST to the paint room and may explain the presence of the residual toluene product in the subsurface. When moving away from this area, the toluene concentrations decrease to levels below the groundwater quality standard over relatively short distances (less than 40 feet). Historically, no offsite toluene impacts to groundwater have been identified.

Time-concentration plots for toluene in samples from wells MW-1 through MW-4 indicate variable temporal trends over the monitoring period (see ERM 2012 and ERM 2013a and b). Since initiation of remedial activities in December 2009, toluene levels in groundwater samples collected through 2013 have exhibited variable trends.

3 Remedial Investigation

This section provides an overview of the RI conducted in 2014 as described in the RI Work Plan, dated January 31, 2014. All field investigation methods and procedures followed are described below. In addition, data on the physical characteristics of the Site and groundwater use in the surrounding area were collected to help define potential transport pathways and receptor populations, and to provide sufficient engineering data for development and screening of potential remedial action alternatives.

3.1 Soil Investigation

The results of previous site investigations allow for the identification of the general source area for the toluene detected at the site in soil and groundwater. Based on these findings, the toluene detected in the subsurface is related to the historical release from the former toluene UST system. Evaluation of the sampling data indicates the presence of toluene at levels of concern in both soil and groundwater and other volatile aromatic compounds (e.g., benzene) in the groundwater.

Evaluation of the analytical results for soil and groundwater samples collected from the release area indicates toluene concentrations suggestive of the presence of non-aqueous phase liquid (NAPL) in the shallow subsurface. Given these high levels of toluene, additional soil samples were collected from the southwest portion of the facility to delineate the horizontal and vertical extent of the toluene within the release area.

Nineteen soil borings were advanced in and around the known source area using direct-push drilling equipment or hand augers (Figure 3-1). Sixteen soil borings were proposed in the work plan, 2 borings (SB-15 and SB-16) were advanced north and south of the source area to obtain soil cores for lithologic description and the collection of samples for organic carbon analysis (SB-16). The retrieved soils were classified using the Unified Soil Classification System and field screened for organic vapors with a photoionization detector (PID). Boreholes were backfilled with neat cement if the boring was greater than 5 feet deep or was located in a paved area; all other borings were backfilled with bentonite. Boring logs for these locations are presented in Appendix B.

Soil samples for VOC analysis were collected using Terra Core® sampling kits in accordance with EPA Test Method SW-846 Method 5035/8260. Given the high water table encountered during the field activities, typically only one soil sample was collected per boring from the interval with the highest PID reading. The soil samples for VOC analysis were submitted to Pace Analytical Services, Inc. in Huntersville, North Carolina for analysis under strict chain-of-custody procedures.

Soil borings near the highest historical toluene sample results were field screened for the presence of NAPL using headspace analysis and soil-water shake testing. Headspace analysis was performed by sealing soils within a zipper-style plastic bag, disaggregating the soils by shaking or rubbing and allowing vapors to accumulate for approximately 15 minutes. The organic vapors within the bag were then measured by inserting the tip of the PID into the bag. The soil-water shake test was performed by filling a glass jar 1/3 full with soil and adding distilled water to the jar until it was ½ full. The jar was then shaken vigorously and examined 15 minutes later for evidence of free product. In addition, since solvent product often fluoresces (Cohen et al. 1992), the shake test samples were also observed under ultra-violet (UV) light to check for the presence of NAPL material.

During installation of the soil and well boreholes, grab samples were collected from the saturated materials representative of the lithologic units present within the water-bearing zone. These samples were submitted to Geotechnics, Inc. of Raleigh, North Carolina for analysis of the following physical and chemical parameters:

- total organic carbon (SB-17 and MW-11-36)
- specific gravity and bulk density (MW-11-36)
- grain size analysis (MW-11-36 and MW-12-38)

This data were used to evaluate the transport and retardation of dissolved VOCs within the water-bearing zone.

3.2 Groundwater Investigation

3.2.1 Monitoring Well Abandonment

During recent (2013) monitoring events, neither water level measurements nor groundwater samples could be obtained from MW-4 due to the apparent collapse of the well casing. Given the apparent loss of structural integrity to the polyvinyl chloride (PVC) casing, MW-4 was abandoned by over-drilling on May 5, 2014. The abandonment involved removing the well pad and protective cover, over-drilling the well and surrounding annular fill materials with 4.25-inch inner diameter (ID) hollow-stem augers and sealing of the borehole by tremie grouting from the bottom to the ground surface.

3.2.2 Monitoring Well Installation

One shallow (MW-4R) and two deep (MW-11-36 and MW-12-38) monitoring wells were installed during the RI (Figure 3-2). Well construction details are presented in Table 3-1 and included in the boring logs provided in Appendix B.

Well MW-4R was constructed of 2-inch ID stainless steel riser and 0.01-inch slot stainless steel screen to prevent potential future casing collapse due to the high toluene concentrations in the source area. The well was constructed such that the top of the well screen (2 feet below ground surface [bgs] to 12 feet bgs) extended into the vadose zone to facilitate the detection of free-phase product at this well location. Wells MW-11-36 and MW-12-38 were advanced into the unconsolidated deposits until a very stiff to hard black clay layer was encountered at a depth of approximately 36 feet bgs. These deeper wells were constructed of 2-inch ID PVC riser and 10-foot long, 0.01-inch slot PVC screen. The total well depth is represented by the last two digits of the well name.

The monitoring wells were developed by pumping and surging with a submersible pump (MW-11-36 and MW-12-38) and bailing (MW-4R). The wells were purged until the groundwater was relatively free of suspended particulates or at the discretion of the WSP geologist.

3.2.3 Groundwater Sampling

Groundwater samples were collected from all Site monitoring wells the week of May 25, 2014. Prior to conducting the sampling activities, all wells were gauged to determine the depth to water and presence/absence of floating product with an electronic oil-water interface meter. The AS/SVE system was not shut down prior to commencement of sampling activities on May 27, 2014. Groundwater samples were collected from MW-1 and MW-12-38 prior to the shut down of the AS/SVE system the afternoon of May 27, 2014. All wells were gauged as described above after sampling had been completed on May 30, 2014 in order measure ground water levels under static conditions. The calculated groundwater elevations are presented in Table 3-2. All wells were purged and sampled for VOCs (SW-846 8260) using low-flow sampling techniques. Samples were submitted to Pace Analytical Services, Inc. of Huntersville , North Carolina under strict chain-of-custody procedures.

3.2.4 Slug Tests

Slug testing, using solid slugs, was conducted on shallow wells MW-1, MW-3, and MW-13, and deep well MW-12-38. The Work Plan specified that testing was to be conducted on wells MW-2 and MW-4R. However, MW-1 was substituted for MW-2 due to an obstruction within the MW-2 well casing. MW-3 was substituted for MW-4R because water levels did not return to static conditions after development and sampling activities. Data collected during slug testing is provided in Appendix E.

3.3 Building Sub-Slab Vapor

Evaluation of the historical groundwater sampling results indicated elevated concentrations of toluene and the presence of ancillary VOCs (e.g., benzene) in the vicinity of the former paint room and area immediately west of the building. Given the potential for vapor intrusion of these compounds, sub-slab vapor samples were collected to evaluate the potential for VOCs to be present at levels of concern in the air inside the manufacturing building.

Three Vapor Pin™ sample ports were installed in the southwestern portion of the manufacturing building area (Figure 3-4). After installing the samplers in the floor slab, the ports were leak checked with a water dam and purged using a personal air sampling pump and multi-gas meter. Samples for VOC analysis were collected over an approximate 1-hour period using 6 liter Summa® canisters in accordance with EPA Test Method TO-15 and submitted under strict chain-of-custody procedures to Pace Analytical Services, Inc. of Huntersville, North Carolina for analysis. The sample ports were removed and the borehole filled with cement after sample collection.

3.4 Water Supply Well Survey

A database search of the well records on file with the South Carolina Department of Natural Resources (SCDNR) was conducted in July 2012 to determine the potential presence of public and residential water-supply wells in the vicinity of the Site. Although the records search and previous environmental investigations had not identified any shallow water-supply wells in the area west (downgradient) of the Site, additional survey activities were performed during the RI to determine the potential existence of other residential wells. The designated well survey area is shown in Figure 3-4.

The initial activity involved supplementing the 2012 well database search with information on the availability of public water use provided by the Trico Water Company and the City of Dillon Water and Sewer Department. Based on the information gathered on local water availability, properties were identified within the survey area that may utilize private wells as either a sole or supplemental source of residential water. A field reconnaissance was conducted by WSP in late April 2014 to gather additional information on the presence or absence of private wells in the areas of interest. The reconnaissance was conducted along public road right-of-ways and involved checking selected properties for evidence of the use of private wells. Specific information or features of interest consisted of the following:

- presence/absence of a well-head on the property;
- presence/absence of a small, isolated structure in the yard that could potentially be used as a well-head cover;
- presence/absence of a water meter along the road near the house/building.

Due to the presence of roaming dogs, WSP field personnel were limited to visual reconnaissance from their vehicle for the residential property at the intersection of Scottland Road and Wix Road. In conjunction with the field reconnaissance, WSP reviewed public domain aerial photographic images to further inspect the survey area. Based on the information obtained from the field reconnaissance, WSP followed up with representatives of Trico Water and city Water and Sewer Department to determine whether selected properties were currently obtaining public water.

4 Physical Characteristics of the Site

4.1 Topography

The City of Dillon and surrounding area lies within the Middle Coastal Plain physiographic sub-province of the Atlantic Coastal Plain. Based on the U.S. Geological Survey (USGS) 7.5-minute topographic map for the Dillon West, South Carolina quadrangle, the Site is situated in an area of hummocky terrain with low relief and dissected dendritic streams (Figure 2-1). The pre-development ground surface gently slopes from east to west from approximately 140 feet mean sea level (MSL) to approximately 125 feet MSL. Given the current facility lay-out, it is deemed unlikely that plant construction significantly altered the surface grade.

4.2 Surface Water Hydrology

The Site is located within the Little Pee Dee River watershed of the Great Pee Dee River Basin. According to the USGS topographic map, the closet natural surface water feature is a small un-named stream located north of Scottland Road approximately 200 feet from the northwest corner of the Site (Figure 2-1). Based on the orientation of the topographic contours, this small stream flows in a generally northwest direction, with the water combining with stream flow from other tributaries until eventually discharging into Ropers Mill Branch approximately 0.5-mile north of the Site. In addition to the stream network, the USGS topographic map also indicates the apparent presence of several drainage ditches or swales to the northeast and southeast of the facility. The current status and use of these man-made drainage features is uncertain.

A review of available information indicates the onsite surface water features primarily consist of a small number of drainage ditches, which are primarily in the western portion of the property. Detailed information on the installation of the drainage ditches is not available, although facility personnel believe these features date to both pre- and post-facility construction. Based on the USGS topographic map and aerial photographic information, one of these ditches appears to extend to the small un-named stream to the north of Scottland Road.

In addition to the drainage ditches, a wetland area is located approximately 150 feet west of the manufacturing building in a wooded area (Figure 4-1). The classification code indicates this palustrine (non-tidal) wetland is characterized by a fully saturated soil substrate for extended time periods and rare presence of surface water. This wetland area appears to be associated with a drainage ditch that runs westward from the building area and eventually connects to the un-named stream a short distance north of the site

4.3 Geology and Hydrogeology

The predominant surface soil units at the Site are the Orangeburg loamy sand (eastern portion of the Site) and the Coxville fine sandy loam (western portion of the Site) (U.S. Department of Agriculture 2014). The Orangeburg is a well-drained soil derived from loamy marine deposits. In Orangeburg soils, the water table is typically encountered at depths greater than 6.5 feet bgs. The Coxville is a poorly drained soil derived from clayey marine deposits. The Coxville typically has a high water table, within 12 inches of the ground surface.

The Site is located in the Middle Coastal Plain physiographic sub-province of the Atlantic Coastal Plain. Geologically, the Coastal Plain physiographic province in eastern South Carolina is characterized by a series of generally seaward-dipping terrigenous clastic stratigraphic units that are punctuated at the surface by a sequence of fluvial and coastal terraces. The surficial deposits reflect the interaction between terrestrial and marine processes and are characterized by relict marsh plains and barrier islands (ridges). The region has been modified by repeated cycles of sea-level transgressions (rise) and regressions (fall).

In the Dillon area, the Pliocene-age Duplin formation, consisting of sands and clays, outcrops at the ground surface (USGS 2014). The Duplin formation unconformably overlies older Cretaceous-age deposits (Black Creek

Formation) over much of its extent. Lithologically, the Black Creek Formation consists of gray to black lignitic clay with thin beds of fine-grained micaceous sand and thick lenses of cross-bedded sand. The shallow water-table (approximately 2 to 3 feet bgs) was encountered within the Duplin formation during the RI, and represents the upper-most water-bearing zone at the Site. The Black Creek Aquifer underlies the surficial aquifer and is comprised of sediments from the Black Creek Formation. The Black Creek aquifer is the primary source of public, industrial and agricultural water in much of the Coastal Plain of South Carolina. The potentiometric surface of the Black Creek Aquifer is approximately 60 feet MSL in the vicinity of the Site (SCDNR 2009). Groundwater flow in the Black Creek Aquifer is generally in an eastward direction toward the coast.

As presented in Figure 4-2 and Appendix B, the following unconsolidated deposits were encountered in the subsurface:

- 0-15 feet bgs (approximate): yellowish red, brown and gray soft clay
- 15-25 feet bgs (approximate): gray to light gray interbedded clay and sand
- 25-36 feet bgs (approximate): yellow to light gray poorly-graded sand with silt
- 36 feet bgs (approximate): black hard clay

The geotechnical parameters (density, specific gravity and grain size) collected during the advancement of monitoring wells borings are presented in Table 4-1 and in Appendix C.

During the RI, the water table was encountered between 2 to 3 feet bgs in soil borings and 3.92 feet-bgs (MW-12; 130.54 feet MSL) to 6.35 feet-bgs (MW-15; 124.76 feet MSL) in monitoring wells (Table 3-2). Historical data indicate that the depth to the water table can vary as much as approximately 7 feet at a given well location. Based on the data obtained as part of the semi-annual monitoring events, groundwater levels are typically highest in the winter and lowest in the late summer, which probably reflect seasonal variations in evapotranspiration rather than precipitation. The operation of the AS/SVE system may also impart some influence of the elevation of the groundwater surface. Recharge to the water table is primarily by infiltration of rainfall, although the drainage ditches and wooded wetland area west of the main building may also provide a local source of groundwater recharge.

Groundwater elevations determined from the May 2014 water level measurements were contoured using geostatistical methods (kriging) to characterize the groundwater surface for this portion of the surficial aquifer (Table 3-2; Figure 4-3). In general, the inferred flow paths are similar to those determined from evaluation of previous water level data for the site, with shallow groundwater moving generally westward toward the wooded area. The variability in groundwater elevations in the area around wells MW-1, MW-2, MW-3, and MW-4R probably reflects the localized influence of the AS/SVE system on the hydrologic conditions in the shallow subsurface. Vertical gradients were calculated for the shallow and deep well nests (i.e., MW-11/MW-11-36 and MW-12/MW-12-38) using the EPA online vertical gradient calculator (EPA 2014a). For the MW-11 nest, a downward vertical gradient with a magnitude of 0.02 was calculated; for the MW-12 nest, a downward vertical gradient with a magnitude of 0.20 was calculated. The downward vertical gradient calculated for the MW-11 nest suggests groundwater flow in the surficial water-bearing zone is not discharging to the wetland area. Although no monitoring wells have been advanced into the Black Creek Aquifer on-Site, data available from the SCDNR indicates that the potentiometric surface of the Black Creek Aquifer is more than 60 feet deeper than the surficial water-bearing zone. Therefore, it appears that the surficial water-bearing zone and the Black Creek Aquifer are not in direct communication.

During the RI, WSP conducted slug tests on MW-1, MW-3, MW-13 and MW-12-38. The average hydraulic conductivity (K) calculated using the Bower-Rice (1976) solution for the shallow monitoring wells screened in the clayey deposits was 0.06 feet per day (ft/day) and 0.9 ft/day for deep monitoring well MW-12-38, which is completed in predominately sand deposits. The results for the shallow monitoring wells are consistent with the clayey sediments encountered in the shallow subsurface (Bouwer 1978) and the silty sand materials present within the screened interval for the deep monitoring well (Heath 1987).

4.4 Local Groundwater Use

As shown in Figure 4-4, a public water supply well owned and operated by Trico Water is present near the western limit of the well survey area. Based on information in the SCDNR database, this well is screened at a depth of greater than 150 feet bgs. No other public water-supply wells or residential wells were definitively identified in the 0.25-mile search area east of the Site or the 0.50-mile area to the west. Discussions with South Carolina DHEC and plant personnel indicated a private well has been installed on the residential property at 1433 Wix Road tax parcel number 049-00-00-117), immediately south of the facility (Figure 4-4). However, the presence of this well could not be verified during the field reconnaissance, and communication with the public utilities indicated the residence is obtaining potable water from Trico Water Company (Arnette 2014).

Based on information obtained during the well survey, neither Trico Water nor the City of Dillon provides water to the residential property at 620 Scottland Road (tax parcel #048-00-00-016; Figure 4-4). In addition, no water meter was observed along the road right-of-way fronting the property.

5 Nature and Extent of Impacts

This section addresses the nature and extent of impacts for all media sampled during the RI. Comparison criteria used for each media is discussed below.

5.1 Soils and Vadose Zone

One surface soil (less than 1 foot bgs) and 19[1] subsurface soil (greater than 1 foot bgs) samples were collected during the field investigation activities. The RI soil sample results are presented in Table 5-1 and Figure 5-1; validated analytical laboratory data reports are presented in Appendix D.

For the RI, the soil sample results are compared to the following chemical-specific criteria provided in the May 2014 EPA Regions 3, 6 and 9 Regional Screening Level (RSL) Summary Table[2] (Appendix E):

- generic soil saturation concentration (C_{sat})
- industrial soil RSL
- MCL-based protection of groundwater soil screening level (SSL).

Specifically, the soil samples collected will be used to delineate the toluene source area to C_{sat}, and toluene-impacted soils to the MCL-based SSL.

The distribution of toluene in Site surface and subsurface soils is presented in Figure 5-2. As discussed above, toluene soil concentrations were compared to the $C_{sat,}$ (818,000 µg/kg), industrial soil RSL (4,700,000 µg/kg), and MCL-based SSL (690 µg/kg). No soil sample results exceeded the industrial soil RSL. The toluene C_{sat} was exceeded in the sample collected from 2.5 feet bgs at the SB-9 location (1,620,000 µg/kg). The results from the oil-water shake test and UV screening did not indicate the presence of NAPL. The SSL of 690 µg/kg was exceeded at six additional locations to the south of soil boring SB-9:

- SB-1 at 2.5 feet bgs (27,000 µg/kg),
- SB-3 at 2.5 feet bgs (957 µg/kg),
- SB-4 at 1 feet bgs (26,200 µg/kg),
- SB-4 at 2 feet bgs (67,200 µg/kg),
- SB-5 at 2 feet bgs (37,900 µg/kg), and
- SB-7 at 2 feet bgs (62,800 µg/kg).

Based on the RI sampling data, the highest toluene concentration were detected in samples collected in the areas south (SB-1, SB-5, SB-7, and SB-9) and east (SB-4) of the historical storage and use areas for this chemical. Overall, toluene concentrations have been delineated to below the MCL-based SSL in the northern portion of the investigation area and to the south and west using historical soil sample data.

In addition to toluene, benzene and cis-1,2-DCE were detected in soil samples at concentrations greater than the MCL-based SSL. The benzene MCL-based SSL (2.6 µg/kg) was exceeded in the samples collected between 2-3 feet bgs at locations SB-6 (7.3 µg/kg) and SB-14 (4.2 µg/kg). Industrial grade toluene may contain benzene at levels of up to 25 percent (International Programme on Chemical Safety 1985). The cis-1,2-DCE MCL-based SSL (21 µg/kg) was exceeded in the surficial sample from location SB-4 (78.9 µg/kg) and the 2-foot bgs sample from boring SB-7(464 µg/kg). Both of these borings are located in the canopy area adjoining the southwestern corner of the manufacturing building.

No MCL-based SSL is promulgated for the following compounds detetected in the soil samples collected:

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[1] One duplicate sample was collected from SB-13 at 3 feet bgs.
[2] Target cancer risk of 1 x 10^{-6} and a target hazard quotient of 0.1.

- acetone
- isopropylbenzene
- m&p-xylene
- o-xylene

These compounds will be discussed in Section 7.

5.2 Groundwater

A total of nineteen groundwater samples (including two duplicate samples) were collected from the new and existing monitoring wells at the Site[3]. The RI groundwater sample results are presented in Table 5-2 and Figure 5-3; validated analytical laboratory data reports are presented in Appendix D.

For the RI, the groundwater sample results are compared to the chemical-specific MCL[4] (Appendix E).

The distribution of toluene in Site groundwater is presented in Figure 5-4. Toluene exceeded the MCL of 1,000 µg/l in samples collected from MW-2 (64,200 µg/l), MW-3 (77,700 µg/l), MW-4R (405,000 µg/l), MW-11 (22,700 µg/l), MW-12 (107,000 µg/l) and MW-13 (461,000 µg/l). The highest toluene concentrations in groundwater were found in shallow groundwater samples from the central portion of the investigation area. Downgradient of the source area (i.e., towards the west and southwest), the toluene concentrations drop rapidly to below the MCL at the locations of shallow wells MW-5, MW-7, MW-10 and MW-15. The toluene plume is delineated to below the MCL to the north by well MW-9 and the west by MW-14. Toluene was not detected in either of the deeper monitoring wells installed in the investigation area. Based on these sampling results, the vertical extent of toluene-affected groundwater is limited to predominately clayey deposits occurring to an approximate depth of 20 feet to 25 in this portion of the Site and does not extend to the deeper sand unit (Figure 5-5).

In addition to toluene, benzene and cis-1,2-DCE were detected in groundwater samples at concentrations greater than the state MCL. The benzene MCL (5 µg/l) was exceeded in samples collected from shallow source area wells MW-2 (38.6 µg/l) and MW-3 (23.4 µg/l), and well MW-11 (10 µg/l) located a short distance downgradient. The cis-1,2-DCE MCL (70 µg/l) was exceeded in the sample collected from MW-14 (1,930 µg/l).

No MCL is promulgated for the following compounds detected in the groundwater samples collected:

- acetone
- isopropylbenzene
- 2-hexanone
- 2-butanone

These compounds will be discussed in Section 7.

5.3 Sub-Slab Vapor

Four sub-slab vapor samples (including one duplicate sample) were collected from the sample points located in the southwestern portion of the building. The RI groundwater sample results are presented in Table 5-3 and Figure 5-6; validated analytical laboratory data reports are presented in Appendix D.

No comparison criteria are available for sub-slab vapor. In Section 7, COPCs in sub-slab vapor are identified by comparison of the sub-slab vapor results to the industrial air RSLs (Appendix E); the industrial air RSLs were

[3] Duplicate samples were collected from MW-1 and MW-11-36.
[4] The South Carolina MCLs for volatile synthetic organic chemicals (R.61-58.5.N) are equivalent to those provided in Appendix C.

developed for industrial exposure to indoor or outdoor air for human receptors. Toluene was not detected above the industrial air RSL in any of the sub-slab vapor samples collected. Therefore, the toluene-impacted soil and groundwater located west of the manufacturing building is not likely to pose a risk to human receptors via the vapor intrusion pathway. Other compounds detected at concentrations greater than the industrial air RSLs are discussed in Section 7.

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6 Fate and Transport of Toluene

Toluene has been detected in one or more soil or groundwater samples at concentrations greater than the applicable screening criteria (see Section 5). Soil sampling data indicate the highest concentrations of toluene are present in the vicinity of the bottle fill station (Figures 5-1 and 5-2). Groundwater sampling data indicate the highest concentrations of toluene are present east and south of the former toluene UST (current bottle fill station) (Figures 2-3 and 5-4). Other VOCs have been detected in soil and groundwater samples from the site (see Section 5); however, the investigation results indicate that the distribution and prevalence is not as extensive as toluene. This section will address the fate and transport of toluene in soil and groundwater based on present and expected future site conditions.

6.1 Potential Routes of Migration

Overall, the highest concentrations of toluene are located in the former toluene UST area. The soil investigation has characterized the extent of affected soil (Figure 5-2). Based on the RI sampling data, the highest toluene concentration were detected in samples collected in the areas south (SB-1, SB-5, SB-7, and SB-9) and east (SB-4) of the historical storage and use areas for this chemical. Overall, toluene concentrations have been delineated to below the SSL in the northern portion of the investigation area and to the south and west using historical soil sampling data. The toluene UST was closed and taken out of service in the mid-1980s; however, soil and groundwater impacts were not noted until October 2005, when workers detected a paint-like odor in shallow soil material excavated during repairs to an underground water line west of the manufacturing building.

Given the known distribution of toluene at the Site, the following potential routes of migration exist at the historical toluene storage and use areas:

- soil to air
- groundwater to air
- soil to groundwater
- groundwater to soil

As indicated by the sampling results, potential routes of migration for toluene (and its associated degradation products) at the Site are principally through the infiltration of soil moisture to the saturated zone and then through the flow of groundwater; sub-slap vapor results indicate that the soil to air and groundwater to air pathways are insignificant. The data do not indicate that toluene-affected groundwater is discharging to the wetland area depicted in Figure 4-1 or small un-named stream located north of Scottland Road approximately 200 feet from the northwest corner of the Site (Figure 2-1).

6.2 Transport

The relative importance of the transport pathways listed above and the extent of actual migration of toluene through them depends primarily on a limited set of physical and chemical properties for the compound and the physical characteristics of the Site area. These two factors are discussed below, followed by a discussion of potential toluene transport at the Site.

6.2.1 Physiochemical Properties

The fate and transport of contaminants at a site are evaluated by considering the physical and chemical interactions of the contaminants within the environment. Certain properties, including mobility and persistence, are considered in this evaluation. Mobility is the potential for a chemical to migrate along a given pathway, and persistence is a measure of how long a chemical will remain unaltered in the environment.

There are several physiochemical properties that affect the transport of toluene in the environment, including:

- Density (0.8623 grams per cubic centimeter) – mass per unit volume; when combined with solubility, determines whether a chemical will sink or float in the saturated zone.
- Aqueous solubility (526 mg/l) – maximum concentration of a chemical that can dissolve in water at a specific pH and temperature.
- Vapor pressure (0.0379 atmospheres) – a relative measure of volatility of a substance in its pure state; chemicals with high vapor pressures readily volatilize from water into the vapor phase.
- Henry's Law constant (0.00664 atmospheres cubic meters per mole) – a measure of the equilibrium distribution of a chemical between vapor and water. High constants indicate higher tendency to enter the vapor phase from water.
- Organic carbon partition coefficient (K_{OC}; 140 liters per kilogram) – indicates the tendency for a chemical to be adsorbed by organic carbon present in the unsaturated soil or aquifer material. Low values indicate less retardation via adsorption to the solid phase.

6.2.2 Physical Site Characteristics

The physical characteristics of the study area are described in detail in Section 4. The key property that affects toluene migration in groundwater is the permeability of the aquifer materials, which are primarily composed of interbedded clay and sand (shallow monitoring wells) and poorly-graded sand with silt (deep monitoring wells). The subsurface stratigraphy at the Site to a depth of approximately 40 feet bgs is presented in Figure 4-2. The following soil types were encountered during the advancement of RI soil and monitoring well borings:

- 0-15 feet bgs (approximate): yellowish red, brown and gray soft clay
- 15-25 feet bgs (approximate): gray to light gray interbedded clay and sand
- 25-36 feet bgs (approximate): yellow to light gray poorly-graded sand with silt
- 36 feet bgs (approximate): black hard clay

During the RI, the water table was encountered between 2 to 3 feet bgs in soil borings and 124.76 feet MSL (MW-15; 6.35 feet-bgs) to 130.54 feet MSL (MW-12; 3.92 feet-bgs) in monitoring wells (Table 4-2). Groundwater flow within the shallow water-bearing zone is generally westward toward the wooded area (Figure 4-3).

6.2.3 Transport of Toluene in Soil and Vapor

After being released, toluene will partition between the solid, gas (soil vapor), aqueous (soil moisture) and NAPL (if present) phases, with further transport occurring via diffusion and advection. Vapor diffusion, density-driven NAPL vapor advection and gravity-driven NAPL advection are the most important mechanisms for movement (EPA 1993). Toluene will be moderately retarded by adsorption to organic -rich soil, but will be readily leached from soils with low organic carbon content (Agency for Toxic Substances & Disease Registry [ATSDR] 2000). Because the toluene release occurred at depth, very low rates of volatilization are expected (ATSDR 2000). In unsaturated organic-rich, it has been estimated the majority (greater than 95 percent) of the toluene is adsorbed to the soil and only a very small fraction (less than 2 percent) partitions to the soil-water phase eventually reaches flowing groundwater. There is less retardation in sandy soils and thus a slightly greater portion of the toluene is estimated to migrate to groundwater; the remainder of the mass fraction is volatilized, biodegraded, or lost through other physiochemical processes. In saturated deep soils with no soil-air phase, approximately half of the mass fraction may be transported with flowing groundwater (EPA 1994). The latter, deep soil partitioning scenario is most applicable to the Site since the toluene release occurred at depth, the relatively shallow water table and thick capillary fringe resulting from the clayey soils.

Toluene is an light non-aqueous phase liquid (LNAPL) and will tend to move downward through the vadose zone and accumulate on the water table. The highest PID readings and odors were observed at the water table, consistent with LNAPL behavior; however no free product was measured in MW-4R or observed during oil-water shake testing or UV scanning.

6.2.4 Transport of Toluene in Groundwater

Advection is the dominant factor in the migration of dissolved or water-miscible chemicals in sand and gravel aquifers (Mackay et al. 1985). This is the process by which solutes are transported by the bulk motion of flowing groundwater as driven by the hydraulic gradient. Diffusion is the spreading of a solute due to a concentration gradient. Dissolved toluene is also expected to disperse as it moves with groundwater. Hydrodynamic dispersion of solutes may occur as a result of mechanical mixing or molecular diffusion. Toluene transport in groundwater within the shallow clayey interval will be governed by both advection and diffusion, in the deeper sandy zone advection will be the dominant transport mechanism.

The dominant feature of the distribution of toluene in groundwater at the Site is that the dissolved plume attenuates rapidly down gradient (Figure 5-4) and has remained within the upper clayey portion of the water bearing zone (Figure 5-5). Additional information on the distribution of toluene in groundwater is described in Section 5.

Groundwater concentrations in samples collected from wells within the source area are indicative of LNAPL. However, given the screen intervals for these wells do not typically straddle the water table, the detection and monitoring for LNAPL has not been possible. During the RI, well MW-4R was installed to replace MW-4 and was constructed such that the well screen extends above the water table to facilitate LNAPL monitoring. No LNAPL had accumulated within MW-4R at the time of RI gauging activities. In addition, no NAPL was observed during oil-water shake testing and UV screening. Based on these data, the LNAPL is likely residual (i.e., non-mobile), but continues to be a source to the dissolved toluene plume.

The rate of toluene transport in groundwater will depend on the degree of adsorption to the aquifer matrix. The adsorption of toluene is generally related to the organic carbon concentrations in the aquifer material. Assuming a linear adsorption isotherm, the distribution coefficient, is the product of the fraction of organic carbon and the organic carbon partition coefficient (K_{OC}). Although the organic matter content at the site is low (0.16 weight percent; average for upper clayey zone) to moderate (0.81 weight percent; deeper sandy zone) (Table 5-1); the resulting retardation due to sorption to natural organic material and/or mineral surface will cause some attenuation of the toluene during migration in the groundwater system.

The transport velocity for toluene in shallow groundwater at the Site was calculated by the following equation:

$$V_C = \frac{V_x}{1 + \frac{\rho_b K_{OC} f_{OC}}{\eta}}$$

Where:

V_c = retarded contaminant transport velocity

V_x = advective ground-water velocity

ρ_b = bulk density of aquifer

K_{oc} = organic carbon portioning coefficient

f_{oc} = fraction organic carbon

η = porosity

The geotechnical samples collected from MW-11-36 were averaged to estimate the bulk density (1.37 gram per milliliter [g/l]) and porosity (0.49) (Table 4-1). The fraction organic carbon value was estimated by averaging the

total organic carbon values for samples collected from SB-16 (0.0016; Table 5-1). The advective ground-water velocity (6.9 x 10^{-3} ft/day; 2.5 feet per year [ft/yr]) was determined using the following equation:

$$V_x = i\frac{k}{\eta_e}$$

i = groundwater gradient

k = hydraulic conductivity

η_e = effective porosity

The hydraulic gradient (0.023 foot/foot) was calculated along the flow path from MW-12 to MW-10, the average hydraulic conductivity for the clayey aquifer material screened by the shallow wells (0.06 ft/day) and the high-end effective porosity value for clay of 0.2 (EPA 1998) were used. Substituting these values into the first equation, the retarded transport velocity for toluene is 4.2 x 10^{-3} ft/day (1.5 feet per year [ft./yr.]), which is slightly lower than the advective groundwater velocity. Assuming a release date of 1980, toluene in groundwater would be expected to extend only 51 feet downgradient of the source area. Based upon the current extent of the toluene plume depicted in Figure 5-4, this rate is underestimated. However, using either estimate for toluene transport, the plume only extends approximately 160 feet downgradient of the source area (i.e., west of MW-11). Given the probable release time frame (before 1985), the plume is likely at stable/steady-state conditions.

6.3 Fate of Toluene during Groundwater Transport

Chemical and biological degradation, together with adsorption, are the primary processes that can affect the mobility and persistence of toluene in soil and groundwater. Toluene can undergo biological degradation under both aerobic and anaerobic conditions. Under aerobic conditions, oxygen acts as the terminal electron acceptor whereas in anaerobic conditions nitrogen or sulfate can act as the terminal electron acceptor; benzyl alcohol and benzonate are aerobic degradation products. Toluene degradation rates are inhibited at concentrations greater than 200,000 µg/kg (ASTDR 2009). Consequently, toluene will persist in areas of high concentration (i.e., SB-9) with possible degradation where concentrations are lower.

7 Human Health Risk Assessment

Based on the RI results, toluene is the predominant chemical detected in the environmental samples from the investigated portion of the Site. The prevalence of this VOC, particularly in soil and groundwater samples, is consistent with findings from previous investigations conducted to assess conditions in the area of the historical toluene UST system release. In addition, other volatile chemicals were detected in the various environmental media sampled during the investigation. This HHRA was prepared to estimate the nature and probability of adverse health effects in humans who may be exposed to toluene and other volatile chemicals in affected environmental media at the Site under current and potential future land use scenarios.

The HHRA was conducted in accordance with the EPA (1989) Risk Assessment Guidance for Superfund (RAGS), Volume I, Human Health Evaluation Manual (Part A), EPA Region 4 (2014) guidance, and WSP's approved Remedial Investigation Work Plan, dated January 31, 2014. The HHRA process involves four components:

- data collection and evaluation
- toxicity assessment
- exposure assessment
- risk characterization

This section of the RI describes each of these components and their results.

7.1 Data Collection and Evaluation

The objective of this section to produce data to be used to assess risks to human health. Several environmental investigations have been conducted at the Site to delineate the nature and extent of affected environmental media (soil, groundwater, and air). Chemicals have been detected in soil, groundwater, and sub-slab vapor. Based on surface water and sediment samples collected in May 2006 and understanding of the hydrogeologic conditions, there is no indication that surface water and sediment have been or will be impacted by Site operations (ERM 2007).

The data applicable to the HHRA are the results from the soil, groundwater, and sub-slab vapor samples collected in April and May 2014, which are discussed in Sections 3 and 5 of this RI report. Based on these analytical results, COPCs were selected to be used for quantitative evaluation in the HHRA. The process of selecting COPCs included identifying those chemicals detected in at least one sample and comparing the maximum concentrations to risk-based screening criteria. The risk-based screening criteria for each affected media are as follows:

- For soil, the screening criteria are the lower of the EPA (2014b) industrial soil RSL and the risk-based SSL. Both the industrial soil RSL and risk-based SSL are based on a cancer risk of 1×10^{-6} and a hazard quotient (HQ) of 0.1.
- For groundwater, the screening criteria are the EPA (2014b) tap water RSL, assuming a cancer risk of 1×10^{-6} and an HQ of 0.1.
- For sub-slab vapor, the screening criteria are the EPA's (2014b) industrial air RSLs, assuming a cancer risk of 1×10^{-6} and an HQ of 0.1. Chemicals detected in sub-slab vapor samples will not be considered COPCs if they were not detected in onsite soil or groundwater samples or are not breakdown products of substances detected in onsite soil or groundwater samples.

For those substances without screening criteria, any detected values were considered COPCs.

7.1.1 COPCs in Soil

COPCs in soil were identified from soil samples collected from seventeen onsite boreholes (SB-1 through SB-14, SB-17, SB-18, and SB-19) in May 2014 (Figure 3-1). Soil samples were collected from these borings at depths ranging from 1 foot bgs to 3 feet bgs. A comparison of the sample results to the HHRA screening criteria is presented in Table 5-1, and the laboratory results are provided in Appendix D. As presented in Table 7-1, the COPCs in soil at the site are:

- acetone
- benzene
- cis-1,2-DCE
- ethylbenzene
- toluene
- m&p-xylene
- o-xylene

7.1.2 COPCs in Groundwater

COPCs in groundwater were identified from groundwater samples collected from seventeen onsite groundwater monitoring wells (MW-1 through MW-15, MW-11-36, and MW-12-38) in May 2014 (Figure 3-2). A comparison of the sample results to the HHRA screening criteria is presented in Table 5-2, and the laboratory results are provided in Appendix D. As indicated in Table 7-2, the COPCs in groundwater at the site are:

- acetone
- benzene
- cis-1,2-DCE
- ethylbenzene
- toluene
- TCE
- vinyl chloride
- m&p-xylene
- o-xylene

7.1.3 COPCs in Sub-Slab Vapor

COPCs in sub-slab vapor were identified from sub-slab vapor data collected in April 2014 from three sub-slab vaporlocations (SSV-1 through SSV-3; Figure 3-3). A comparison of the sample results to the HHRA screening criteria is presented in Table 5-3, and the laboratory results are provided in Appendix D. As indicated in Table 7-3, the COPCs in sub-slab vapor are:

- benzene
- ethylbenzene
- 4-ethyl toluene
- 2-hexanone

- PCE
- TCE

1,1-DCA was also detected above the screening criteria; however, it is excluded as a COPC in sub-slab vapor because 1,1-DCA was not detected in any soil and groundwater samples and is not a breakdown product of compounds detected in soil and groundwater. 4-ethyl toluene was detected and included as a COPC as a conservative assumption because soil and groundwater samples were not analyzed for 4-ethyl toluene.

7.2 Toxicity Assessment

The purpose of the toxicity assessment was to identify the types of adverse effects that each COPC can cause, and how those effects depend on exposure amount (dose), route of exposure (oral, inhalation, dermal), and exposure duration. Quantitative estimates of the potency of COPCs include two sets of toxicity values, one for carcinogenic effects and one for non-carcinogenic effects. This two-part approach is employed because there are typically major differences in the time-course of action and the shape of the dose-response curve for cancer and non-cancer effects.

7.2.1 Cancer Effects

For cancer effects, the toxicity assessment process has two components. The first is a qualitative evaluation of the weight of evidence that the chemical does or does not cause cancer in humans. The weight-of-evidence descriptor is based on the likelihood that the constituent is a human carcinogen. The following are the weight-of-evidence descriptors:

- Carcinogenic to humans – convincing epidemiologic evidence demonstrating causality between human exposure and cancer, or, exceptionally, when there is strong epidemiological evidence, extensive animal evidence, knowledge of the mode of action, and information that the mode of action is anticipated to occur in humans and progress to tumors
- Likely to be carcinogenic to humans – available tumor effects and other key data are adequate to demonstrate carcinogenic potential to humans, but does not reach the weight-of-evidence for the descriptor of “carcinogenic to humans”
- Suggestive evidence of carcinogenic potential – evidence from human or animal data is suggestive of carcinogenicity, which raises a concern for carcinogenic effects but is judged not sufficient for a stronger conclusion
- Inadequate information to assess carcinogenic potential – available data is judged inadequate to perform an assessment
- Not likely to be carcinogenic to humans – available data are considered robust for deciding that there is no basis for human hazard concern

For chemicals that are believed to be capable of causing cancer in humans, the second part of the toxicity assessment is to describe the carcinogenic potency of the chemical by calculating a cancer slope factor (CSF) for oral exposure or unit risk factor (URF) for inhalation exposure. The CSFs and URFs are upper-bound estimates of the excess cancer risk due to continuous exposure to a constituent averaged throughout the course of a 70-year lifetime. A CSF has units of 1/(milligram of constituent/kilogram of body weight/day), or $(mg/kg\text{-}day)^{-1}$. A URF is expressed in units of 1/(micrograms of constituent/cubic meter of air) or $(\mu g/m^3)^{-1}$. The basis of CSFs and URFs are data from lifetime animal bioassays, although human data are used when available.

7.2.2 Non-cancer Effects

Essentially all chemicals can cause non-cancer adverse health effects if given at high enough doses. However, when the dose is sufficiently low, typically no adverse effect is observed. Thus, in characterizing the non-cancer effects of a chemical, the key parameter is the threshold dose at which an adverse effect first becomes

evident. Doses below the threshold are considered to be safe, while doses above the threshold are likely to cause an effect.

The threshold dose is typically estimated from toxicological data (derived from studies of humans or animals) by determining the highest dose that does not produce an observable adverse effect and the lowest dose that does produce an effect. These are referred to as the no observed adverse effect level (NOAEL) and the lowest observed adverse effect level (LOAEL), respectively. The threshold is presumed to lie between the NOAEL and the LOAEL. However, to be conservative, non-cancer risk evaluations are not based directly on the threshold exposure level, but on a value referred to as the reference dose (RfD) for oral exposure or reference concentrations (RfCs) for inhalation exposure. The RfD or RfC is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime.

The RfD or RfC is derived from the NOAEL (or the LOAEL if a reliable NOAEL is not available) by dividing by an "uncertainty factor." If the data are from studies in humans and if the observations are considered to be very reliable, the uncertainty factor may be as small as 1.0. However, the uncertainty factor is normally at least 10 and can be much higher if data are limited. The purpose of dividing the NOAEL or the LOAEL by an uncertainty factor is to ensure that the RfD or RfC is not higher than the true threshold level for adverse effects. Thus, there is always a "margin of safety" built into an RfD, and doses equal to or less than the RfD or RfC are nearly certain to be without any risk of adverse effect. Doses higher than the RfD or RfC may carry some risk, but because of the margin of safety, a dose above the RfD or RfC does not mean that an effect will necessarily occur.

7.2.3 Toxicity Values

Toxicity values for use in the HHRA are available from several sources. In accordance with EPA's (2003) Office of Solid Waste and Emergency Response Directive 9285.7-53, the hierarchy for toxicity values were as follows:

1. EPA's Integrated Risk Information System (IRIS) database, which contains values derived by EPA toxicologists that have mostly undergone thorough review and validation both within and outside the EPA (EPA 2014c)
2. EPA's Provisional Peer Reviewed Toxicity Values, which includes toxicity values developed by the EPA's Office of Research and Development/National Center for Environmental Assessment/Superfund Health Risk Technical Support Center
3. Tier 3 toxicity values, including:
    - California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database, which contains toxicity values that are peer-reviewed and address both cancer and non-cancer effects (Cal/EPA OEHHA 2014)

The ATSDR Minimal Risk Levels, which are peer-reviewed estimates of the daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse non-cancer health effects over a specified duration of exposure (ATSDR 2013)

The toxicity values for COPCs are provided in Tables 7-4 and 7-5. No toxicity data were available for 4-ethyl toluene. The toxicity data for isopropylbenzene was used as a toxicological surrogate for p-ethyl toluene. Isopropylbenzene and p-ethyl toluene are from the same chemical family (i.e., alkyl benzenes). Chemicals belonging to the same chemical family often have similar properties and toxicity (Environmental Council of States 2007).

Most RfDs and CSFs are expressed as the administered dose. Exposure estimates for the dermal pathway are expressed as absorbed dose. Hence, for the dermal pathway, it is usually necessary to adjust oral toxicity values from administered to absorbed doses. Chemical-specific data regarding gastrointestinal absorption efficiencies were obtained from the EPA's (2004) RAGS Part E, Supplemental Guidance for Dermal Risk Assessment. As indicated in Tables 7-4 and 7-5, for all the COPCs, a default value of complete (i.e., 100 percent) oral absorption was assumed, and therefore, no toxicity adjustment was necessary.

7.3 Exposure Assessment

In the exposure assessment, the potential human receptors are identified and their potential for exposure to COPCs is characterized. To establish a framework for the exposure assessment, a conceptual site model was developed. The conceptual site model is depicted in Figure 7-1 and explained below.

7.3.1 Conceptual Site Model

7.3.1.1 Exposure Setting Characterization

The Site is approximately 80 acres and includes a 376,000-square-foot manufacturing building and small ancillary structures, including a hazardous waste and tractor shed, a fire-water pump house, and a paint storage building. Concrete and asphalt paved areas occur along the north, west, and south sides of the building. A fence surrounds the portions of the plant where manufacturing activities are conducted. The area west of the fence line is a wooded (wetland) area with ditches and a swale. A drainage ditch runs from the facility to the wooded area and a former railroad spur is located along the northwest portion of the Site. Fifteen acres of the property, located to the north and east of the manufacturing building, are leased to a local farmer. Progress Energy owns and operates a power substation on approximately 4 acres of land in the northeast portion of the Wix property. Subsurface utilities are located onsite. In the area west of the manufacturing building, underground utilities generally run north-south parallel to the building wall. Gas and water lines appear to extend down to Wix Road.

The Site is located in a mixed industrial, agricultural, and residential area north and west of the city of Dillon and Interstate 95. The property is bordered to the north by farmland and the Franco Manufacturing facility, to the east by cultivated and wooded farmland, to the south by farmland and a small number of residential properties, and to the west by the CSX Transportation railroad line and residences/small businesses. The nearest residential area is located along Wix Road south of the Wix property.

The Site is zoned “ID-1-Light Industrial District Uses” (Jones 2014). Some of the permitted uses under ID-1 are manufacturing, utilities, transportation and warehousing, and crop and animal production. Residential use is not permitted in an ID-1 zoning district. Based on the Site’s current zoning designation, the reasonable anticipated future land use of the Site will also be light industrial.

Groundwater at the Site is typically encountered between 4 and 6 feet bgs and flows to the west and southwest. The soil stratigraphy beneath the site consists of a thick (approximately 15 feet) upper clay layer that grades over several feet into a silty sand layer at a depth of approximately 25 feet bgs. A hard, black clay layer occurs beneath the sand deposits at a depth of approximately 36 feet bgs.

The groundwater at the Site is not used for drinking water or other potential uses (e.g., process water, irrigation), and no water supply wells have been installed at the Site. The Site obtains its potable and process water from the Trico Water Company Inc., located in Dillon. A search of public well records indicates the presence of a few private and municipal water supply wells within a one-mile radius of the Site. A public water supply well owned and operated by Trico Water is present west of the Site (Figure 4-4). This well is screened at a depth of greater than 150 feet bgs. No other public water-supply wells or residential wells were definitively identified within the well search area described in the RI Work Plan. Discussions with South Carolina DHEC and plant personnel indicated a private well had been installed on the residential property at 1433 Wix Road, immediately south of the facility (Figure 4-4). However, the presence of this well could not be verified during the April 2014 field reconnaissance of the area, and communication with the public utilities indicated the residence is obtaining potable water from Trico Water Company (Arnette 2014). Based on information obtained during the well survey, neither Trico Water nor the City of Dillon provides water to the residential property at 620 Scottland Road (Figure 4-4). In addition, no water meter was observed along the road right-of-way fronting the property.

7.3.1.2 Identification of Receptor Populations

Manufacturing operations at the Site are conducted 24 hours a day, 5 to 7 days a week, with the number of work days per week dependent on product demand. Based on information obtained during a 2012 site visit, 350 full-time and 120 temporary workers were employed at the facility. A metal chain-link security fence surrounds the portions of the plant where manufacturing activities are conducted, and limits the opportunities for trespassing by unauthorized individuals. In addition, vehicle access to the manufacturing building area is only possible through locked gates.

The potential current human receptors at the Site are facility workers that perform manufacturing activities in the building or enclosed structures underlain by affected media. Construction and utility workers are also potential current human receptors when performing short-term intrusive activities (e.g., digging/trenching) in the impacted area at the Site. A trespasser is not considered a likely potential receptor because of current Site controls to affected areas of the Site.

Given that the Site will likely remain light industrial in the future, the potential future human receptors are facility workers and construction and utility workers. Future trespassers were not considered future receptors because their exposures would be less than the facility worker, who would have a longer exposure duration and greater exposure frequency. Future residents were not selected as potential future onsite receptors because of the Site's zoning designation. However, residents are considered potential offsite receptors given the current proximity of residential properties to the Site.

7.3.1.3 Exposure Pathway Evaluation

As part of the conceptual site model, potential exposure pathways were evaluated to determine which, if any, are potentially complete. An exposure pathway generally consists of four main elements:

- a source and mechanism of chemical release to the environment
- an environmental transport medium for the released chemical
- a point of actual or potential contact by a receptor with the impacted media (referred to as the exposure point)
- a method of intake (e.g., ingestion, inhalation, dermal absorption) at the exposure point

Conditions on the Site and hydraulically downgradient of the Site were evaluated with respect to these four elements to determine if receptors are exposed to COPCs in affected media. If any of these exposure pathway elements are absent, exposure will not occur, the receptor does not contact the contaminant, and there is no associated risk to health (even in areas where chemicals are detected).

7.3.1.3.1 Source and Mechanism of Chemical Release

The Wix facility was constructed in the late 1970s and has been in operation since 1977. During the early years of manufacturing operations, toluene-containing paints were prepared in the southwest portion of the building area. Based on available information, it is believed the toluene was stored in an UST outside of the building and dispensed via a sub-grade piping network to various locations within the manufacturing building. After closing of the UST in the mid-1980s, toluene used in the paint formulation was stored in drums inside the paint room located in the southwestern portion of the building.

Based on environmental investigations at the Site, COPCs, primarily toluene, detected in the subsurface are likely related to historical leaks from the former UST system. No existing source of COPCs has been identified on the Site.

7.3.1.3.2 Transport Mechanism

After a chemical is released to the environment, it may be transported; transformed physically, chemically, or biologically; or accumulated in one or more media. Potential transport release mechanisms to be evaluated for COPCs include: surface runoff of COPCs in soil, release of volatile COPCs in soil and particulates to outdoor air, leaching of COPCs from soil to groundwater, release of volatile COPCs from groundwater to soil gas, and release of volatile COPCs in soil gas to indoor air.

COPCs in soils have been detected in subsurface soils (i.e., 1 foot bgs or deeper) and under surface pavement. No COPCs were found in shallower soils (i.e., soils less than 1 foot bgs). Therefore, surface runoff of soil and releases of volatiles and particulates to outdoor air are unlikely transport mechanisms. In addition, based on surface water and sediment samples collected onsite, there is no indication that surface water and sediment have been impacted by surface runoff. COPCs in subsurface soil could be released to outdoor air. If subsurface soils are disturbed because of intrusive activities (e.g., excavations, trenches, and construction sites), COPCs in subsurface soil could be released to air as a particulate or vapors.

Groundwater at the Site contains COPCs; therefore, the leaching of COPCs from soil to groundwater is a potential transport mechanism. Toluene is the predominant COPC in shallow groundwater. The distribution of toluene in Site groundwater has not spread either near or beyond the Site boundaries (Figure 5-4). Toluene was not detected in either of the deeper monitoring wells installed in the investigation area. In addition, a fate and transport evaluation indicates the unlikelihood that toluene will migrate beyond the Wix property in the future. Other COPCs are present in shallow groundwater but only in a limited area onsite.

Volatile COPCs in soil or dissolved in groundwater can migrate by vapor diffusion into the soil pores in the vadose zone and accumulate in voids beneath the building slab. COPCs were detected in sub-slab vapor samples. Therefore, a release of volatiles from soil to soil gas and/or groundwater to soil gas is a transport mechanism. Vapors can accumulate in trenches and excavations in the vadose zone. Therefore, the volatilization of COPCs in groundwater to subsurface trench/excavation air is a potential transport mechanism. In addition, the volatiles in soil gas may migrate by advective air flow through the soil to a nearby building foundation. If there are cracks in the foundation, a pressure difference between the air in the building and in the soil pores can result in movement of volatile-containing vapors into the building. The presence of COPCs in sub-slab vapor samples collected onsite indicates the potential for vapor intrusion of COPCs to indoor air in the Site building.

7.3.1.3.3 Exposure Point

An exposure point is a location where a potential receptor may come in contact with affected media. Potential exposure points for each receptor population are evaluated below.

<u>Onsite Facility Worker</u>

For the HHRA, it is assumed that the facility worker may roam across the whole Site at random; therefore, the entire Site is considered the potential exposure point. Therefore, the most likely exposure points for facility workers are the locations of affected surface soil. As mentioned previously, COPCs were not detected in surface soils (i.e., less than 1 foot bgs). Facility workers are not assumed to come in contact with subsurface soils during their normal work day. Thus, there are no exposure points of facility workers to COPCs in soil at the Site.

Groundwater at the Site is not used for potable purposes; instead, potable water is supplied to the Site by Trico Water Company. Therefore, facility workers would not be directly exposed to COPCs in onsite groundwater.

Volatile compounds were detected in sub-slab vapor that could be released to indoor air as a result of vapor intrusion. Potential exposure points for facility workers to COPCs in soil gas would be the indoor air of the manufacturing building and any potential future structures.

<u>Onsite Construction and Utility Workers</u>

For this HHRA, it is assumed that a construction and utility worker may conduct intrusive activities anywhere onsite; therefore, the entire site is considered the potential exposure point. Construction and utility workers who work on

the Site would likely be exposed to COPCs in soil at the locations of affected subsurface soil (i.e., soils at 1 foot bgs or deeper). The most likely exposure points would be the location of intrusive activities (e.g., excavations, trenches, and construction sites) where affected subsurface soil would be encountered.

Given the shallow depth of the groundwater (i.e., 4 to 6 feet bgs), construction and utility workers may contact groundwater if excavations occur in areas with affected groundwater during wet periods when the water table is high. In addition, construction and utility workers could be exposed to COPCs in groundwater volatilizing to the air when working in a trench or excavation.

Offsite Residents

Offsite residents are unlikely to be exposed to COPCs in soil at the Site because affected soils are subgrade and under a paved area. It is highly unlikely that current local groundwater users could potentially be exposed to COPCs because sampling data indicate that COPCs have not spread either near or beyond the Site boundaries and known water supply wells located hydraulically downgradient of the release are screened at depths of greater than 150 feet bgs. The installation of any shallow, private water-supply wells at future residences/sub-division to the west (downgradient) of the Site is considered highly unlikely given the availability of public water supplied by Trico Water Company. Also, the potential for vapor intrusion in the offsite residential buildings is unlikely given that the nature and extent of VOCs in groundwater is limited to an area well within the Site boundaries.

Potential exposures to offsite residents will not be evaluated further in this HHRA because there are no exposure points for this receptor population.

7.3.1.4 Exposure Route

Facility and construction and utility workers are the potential exposure receptor populations that will be evaluated further in the HHRA. The potential exposure routes for facility workers are:

- Inhalation of volatile COPCs released to indoor air from sub-slab vapor via vapor intrusion

The potential exposure routes for construction and utility workers are:

- Incidental ingestion of (e.g., hand-to-mouth activity associated with smoking or eating), dermal contact with, and inhalation of particulates and volatile COPCs in subsurface soil
- Incidental ingestion of, dermal contact with, and inhalation of COPCs from shallow groundwater during trenching and excavation activities

7.3.2 Estimation of Chemical Intakes

In this part of the assessment, the potential exposure for each receptor is quantified for each exposure pathway identified as being of potential concern in the conceptual site model. To quantify human exposure to chemicals in the environment, it is necessary to calculate the level of contact between people and each impacted environmental medium. For every exposure pathway of potential concern, it is expected that there will be differences between individuals in the level of exposure at a specific location due to differences in intake rates, body weights, exposure frequencies, and exposure durations. There is normally a wide range of average daily intakes between different members of an exposed population. The EPA has developed default exposure parameters for evaluating a number of the most common exposure scenarios. The exposure point concentrations, exposure equations, and assumptions that were used for calculating the intakes of COPCs in soil, groundwater, and sub-slab vapor are discussed below.

7.3.2.1 Exposure Point Concentration

An exposure point concentration is an estimate of the true arithmetic mean concentration of a chemical in a medium at an exposure point. The choice of the arithmetic mean as the most appropriate statistic for

characterizing exposure at an exposure point is based on the fundamental assumption of random exposure within the exposure point. However, because the true arithmetic mean concentration cannot be calculated with certainty from a limited number of measurements, EPA recommends that the 95th percentile upper confidence limit (UCL) of the arithmetic mean at each exposure point be used when calculating exposure and risk at that location. "The 95th percentile UCL provides reasonable confidence that the true site average will not be underestimated" (EPA 1992).

The equation used to compute the 95th percentile UCL of a data set depends on the distribution (e.g., normal, lognormal) of the values. To address this problem, the exposure point concentrations for COPCs in soil and groundwater samples were calculated using the Statistical Software ProUCL 5.0 for Environmental Applications for Data Sets with and without Nondetect Observations (EPA 2013). Since the calculation of the UCL depends on the distribution of the data set, the ProUCL software performs the necessary statistical tests and recommends an appropriate UCL. If more than one UCL was recommended using ProUCL, the higher of the UCLs was assumed as the exposure point concentration. If the UCL exceeded the maximum detected concentration of a COPC, then the corresponding maximum concentration was used as the exposure point concentration. If there were too few data to perform meaningful statistics, the maximum detected concentration was used as the exposure point concentration.

Soil Concentrations

Using the ProUCL software, exposure point concentrations for COPCs in soil were calculated and based on the concentrations detected in the seventeen subsurface soil samples (i.e., SB-1 through SB-14, SB-17, SB-18, and SB-19) collected in May 2014. Duplicate samples were not included in the calculations because the duplicate samples are used as a measure of data precision. The exposure point concentrations for subsurface soil are presented in Table 7-6; the ProUCL output sheets are included in Appendix F-1.

Groundwater Concentrations

For this HHRA, it was assumed that a construction and utility worker could potentially be exposed to affected groundwater as deep as 15 feet bgs, which is the assumed maximum depth for an excavation for a construction project (Virginia Department of Environmental Quality [VADEQ] 2014). Therefore, the exposure point concentrations for COPCs in groundwater were based on the concentrations detected in groundwater samples collected from the fifteen shallow groundwater monitoring wells (MW-1 through MW-15) in May 2014. The results from the deeper groundwater monitoring wells (MW-11-36 and MW-12-38) were not included in the exposure point concentration calculation. Duplicate samples were not included in the calculations because the duplicate samples are used as a measure of data precision. The exposure point concentrations for shallow groundwater are presented in Table 7-6; the ProUCL output sheets are included in Appendix F-2.

Indoor Air Concentrations from Vapor Intrusion

Exposure point concentrations of COPCs in indoor air from vapor intrusion were estimated using the EPA's Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator, Version 3.3.1, May 2014 RSLS (EPA 2014d). The maximum concentration of each COPC detected in the three sub-slab vapor samples (SSV-1 through SSV-3) collected in April 2014 was entered into the SGC-IAC spreadsheet to calculate the indoor air concentration. The exposure point concentrations in indoor air are presented in Table 7-7; the SGC-IAC output sheet is included in Appendix F-3.

Trench Air Concentrations from Groundwater

Exposure point concentrations of COPCs in trench air from shallow groundwater were estimated using a model developed by the VADEQ for the Virginia Voluntary Remediation Program (VADEQ 2014). If the depth to groundwater is less than 15 feet, VADEQ assumes that a worker would encounter groundwater when digging an excavation or a trench. The worker would then have direct exposure to the groundwater. The worker would also be exposed to contaminants in the air inside the trench that would result from volatilization from the groundwater pooling at the bottom of the trench. To estimate the migration of COPCs in groundwater to air in a construction or utility trench, the VADEQ trench model uses a combination of a vadose zone model to estimate volatilization of gases from impacted groundwater into a trench, and a box model to estimate dispersion of the contaminants from

the air inside the trench into the aboveground atmosphere. The general equation for calculating the air concentration in the trench is:

CA_{trench} = CW x VF

Where:

CA_{trench} = concentration of the COPC in air within the trench (µg/m^3)
CW = exposure point concentration of COPC in groundwater (µg/l)
VF = volatilization factor (liters per cubic meter)

Exposure assumptions for this model are outlined in the VADEQ guidance, and model assumptions and output are provided in Appendix F-4. For the purposes of this HHRA, the trench dimensions were assumed to be 3 feet wide by 8 feet long, which are the VADEQ's default values. The exposure point concentrations for a COPC in trench air are provided in Table 7-8.

7.3.2.2 Inhalation of Volatiles in Indoor Air by Full-Time Facility Workers

Current and future facility workers could potentially be exposed to COPCs in sub-slab vapor as a result of vapor intrusion to indoor air. This exposure pathway does not apply to a construction and utility worker.

The intake from inhalation of COPCs was calculated using the following equation:

Intake (milligrams per cubic meter [mg/m^3]) = (CA_{indoor} x ET x EF x ED) / (AT x 24 hours/day)

Where:

CA_{indoor} = Exposure point concentration in indoor air (mg/m^3)
ET = Exposure time (hours/day)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AT = Averaging time (days)

The exposure point concentrations in indoor air (CA_{indoor}) were derived using the EPA's SGC-IAC Calculator (EPA 2014d) and are provides in Table 7-7 and Appendix F. The exposure time (ET), exposure frequency (EF), and exposure duration (ED) for a facility worker are assumed to be the EPA default values of 8 hours/day, 250 days/year, and 25 years (EPA 2014b). The averaging time (AT) for non-carcinogens is equal to the exposure duration (ED) multiplied by 365 days per year, which is 9,125 days (EPA 2014b). The averaging time (AT) for carcinogens is equal to a lifetime in years (70 years) multiplied by 365 days per year, which is 25,550 days (EPA 2014b).

Estimated intakes from inhalation of volatiles in indoor air by facility workers are provided in Appendix F-5.

7.3.2.3 Incidental Ingestion of Soil by Construction and Utility Workers

Current and future construction and utility workers may be exposed to COPCs in subsurface soil by incidental ingestion. The intake from ingestion of soil was calculated using the following equation:

Intake (mg/kg-day) = (CS x IR x FI x EF x ED x CF) / (BW x AT)

Where:

CS = Exposure point concentration in soil (mg/kg)
IR = Ingestion rate (milligrams per day [mg/day])
EF = Exposure frequency (days/year)
FI = Fraction ingested (unitless)
ED = Exposure duration (years)

CF	=	Conversion factor (kilograms per milligram [kg/mg])
BW	=	Body weight (kilograms [kg])
AT	=	Averaging time (days)

Under the construction and utility worker exposure scenario, exposure point concentrations (CS) for COPCs in subsurface soil samples were the UCL of the mean (Table 7-6). An 80-kg (BW) worker was assumed to consume 330 milligrams per day of soil (IR) for 125 days per year (EF) for 1 year (ED). The assumptions for BW, IR, and ED are consistent with EPA (2014b) guidance, and the assumption for EF is consistent with VADEQ (2014) guidance. The fraction of soil ingested (FI) is assumed as 0.5 since the construction and utility worker is assumed to be exposed to affected soil for half of the work day (VADEQ 2014). The averaging time (AT) for non-carcinogens is equal to the exposure duration (ED) multiplied by 365 days per year, which is 365 days (EPA 1989). The averaging time (AT) for carcinogens is equal to a lifetime in years (70 years) multiplied by 365 days per year, which is 25,550 days (EPA 1989).

Estimated intakes from incidental ingestion of subsurface soil by current and future construction and utility workers are provided in Appendix F-6.

7.3.2.4 Dermal Contact with Soil by Construction and Utility Workers

Current and future construction and utility workers may be exposed to COPCs in soil by dermal contact. The absorbed dose from dermal contact of soil was calculated using the following equation:

Absorbed dose (mg/kg-day) = (CS x SA x AF x ABS x EF x ED x CF) / (BW x AT)

Where:

CS	=	Exposure point concentration in soil (mg/kg)
SA	=	Skin surface area available for contact (square centimeter [cm^2])
AF	=	Soil adherence factor (milligrams per square centimeter [mg/cm^2])
ABS	=	Dermal absorption fraction (unitless)
EF	=	Exposure frequency (per year)
ED	=	Exposure duration (years)
CF	=	Conversion factor (kg/mg)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

Consistent with EPA's (2004) RAGS Part E, Supplemental Guidance for Dermal Risk Assessment, it was assumed that the construction and utility worker wears a short-sleeved shirt, long pants, and shoes. Therefore, the skin surface area available for contact (SA) was assumed as 3,470 cm^2, which represents exposure to head, hands, and forearms (EPA 2014b). The soil adherence factor (AF) for a construction and utility worker was 0.3 mg/cm^2 (EPA 2014b). The fraction of a contaminant absorbed dermally from soil (ABS) is chemical-specific. The ABS values for COPCs were those presented in EPA's (2004) RAGS Part E. According to EPA (2004) guidance, VOCs would tend to be volatilized from the soil on skin and thus, the fraction of a volatile organic absorbed dermally from soil is assumed to be zero and the dermal exposure pathway is incomplete. Thus, all the COPCs in soil at the Site were assumed to have an ABS of zero and therefore, the absorbed dose of COPCs in soil was not calculated.

7.3.2.5 Inhalation of Volatiles from Soil by Construction and Utility Workers

Current and future construction and utility workers may be exposed to volatile COPCs in soil by inhalation. The intake from inhalation of COPCs in soil was calculated using the following equation:

Intake (mg/m^3) = (CS x EF x ED x ET x (1/VF)) / (AT x 24 hours per day)

Where:

CS	=	Exposure point concentration in soil (mg/kg)

EF	=	Exposure frequency (days/year)
ET	=	Exposure time (hours/day)
ED	=	Exposure duration (years)
VF	=	Volatilization factor (cubic milligrams per kilogram [m^3/kg])
AT	=	Averaging time (days)

The inhalation exposure time (ET) for a construction and utility worker is assumed to be the VADEQ default value of 4 hours/day (VADEQ 2014). The soil-to-air volatilization factor (VF) is used to define the relationship between the concentration of the contaminant in soil and the flux of the volatilized contaminant to air. VF is calculated using a simplified equation developed by Jury et al. (1984), which is presented in EPA guidance (EPA 1996). The Jury model calculates the maximum flux of a contaminant from contaminated soil and considers soil moisture conditions in calculating a VF. Chemical-specific VFs were estimated using the online RSL calculator and assuming a climatic zone of Raleigh, North Carolina, which is in the same climatic zone as Dillon, South Carolina (EPA 2014b). The exposure point concentrations in subsurface soil (CS), exposure frequency (EF), exposure duration (ED), and averaging time (AT) for non-carcinogens and carcinogens are the same as those presented under the incidental ingestion of soil for a construction and utility work.

Estimated intakes from inhalation of volatile COPCs in subsurface soil by construction and utility workers are provided in Appendix F-6.

7.3.2.6 Inhalation of Particulate Dust by Construction and Utility Workers

Current and future facility and construction and utility workers may be exposed to COPCs in soil by inhalation of particulates in outdoor air. The intake from inhalation of particulates in outdoor air was calculated using the following equation:

Intake (mg/m^3) = (CS x EF x ED x ET x (1/PEF)) / (AT x 24 hours per day)

Where:

CS	=	Exposure point concentration in soil (mg/kg)
EF	=	Exposure frequency (days/year)
ET	=	Exposure time (hours/day)
ED	=	Exposure duration (years)
PEF	=	Particulate emission factor (m^3/kg)
AT	=	Averaging time (days)

The exposure time (ET) for a construction and utility worker is assumed to be the VADEQ default value of 4 hours/day (VADEQ 2014). Inhalation of COPCs adsorbed to respirable particles was assessed using a particulate emission factor (PEF) equal to 5.93×10^{10} m^3/kg. This PEF was estimated using the online RSL calculator and assuming a climatic zone of Raleigh, North Carolina (EPA 2014b). The exposure point concentration in subsurface soil (CS), exposure frequency (EF), exposure duration (ED), and averaging time (AT) for non-carcinogens and carcinogens are the same as those presented under the incidental ingestion of soil for a construction and utility work.

Estimated intakes from inhalation of particulates from subsurface soil by construction and utility workers are provided in Appendix F-6.

7.3.2.7 Incidental Ingestion of Groundwater by Construction and Utility Workers

Current and future construction and utility workers may be exposed to COPCs in groundwater by incidental ingestion. The intake from ingestion of groundwater was calculated using the following equation:

Intake (mg/kg-day) = (CW x IR x EF x ED) / (BW x AT)

Where:

CW	=	Exposure point concentration in groundwater (mg/l)
IR	=	Ingestion rate (liters/day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

Under the construction and utility worker exposure scenario, exposure point concentrations (CW) for COPCs in shallow groundwater samples were the UCL of the mean. An 80-kg (BW) worker was assumed to consume 0.02 l/d of groundwater (IR) for 250 days per year (EF) for 1 year (ED). The assumptions for IR are consistent with VADEQ (2014) guidance, and the assumptions for BW, EF, and ED are consistent with EPA guidance (EPA 2014b). The averaging time (AT) for non-carcinogens is equal to the exposure duration (ED) multiplied by 365 days/year, which is 365 days (EPA 1989). The averaging time (AT) for carcinogens is equal to a lifetime in years (70 years) multiplied by 365 days/year, which is 25,550 days (EPA 1989).

Estimated intakes from incidental ingestion of groundwater by construction and utility workers are provided in Appendix F-6.

7.3.2.8 Dermal Contact with Groundwater by Construction and Utility Workers

Current and future construction and utility workers may be exposed to COPCs in groundwater by dermal contact. The absorbed dose from dermal contact of groundwater was calculated using the following equations:

Absorbed dose (mg/kg-day) = (DA_{event} x EV x ED x EF x SA) / (BW x AT)

Where:

DA_{event}	=	Absorbed dose per event (mg/cm^2)
EV	=	Event frequency (per day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
SA	=	Skin Surface area available for contact (cm^2)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

For organic compounds:

If t_{event} is $\leq t^*$: $DA_{event} = 2FA \times K_p \times CW \times SQRT((6 \times tau \times t_{event})/pi)$

If t_{event} is > t*: $DA_{event} = FA \times K_p \times CW \times \{(t_{event}/(1+B)) + (2 \times tau \times [(1 + 3B + 3B^2)/(1+B)^2]\}$

Where:

K_p	=	Dermal permeability coefficient of compound in water (cm/hour)
CW	=	Exposure point concentration in groundwater (mg/cm^3)
t_{event}	=	Event duration (hours)
B	=	Lipophilic property (unitless)
FA	=	Fraction absorbed water (unitless)
t*	=	Time to reach steady state
tau	=	Lag time per event (hours)

The exposure point concentrations (CW) for COPCs in shallow groundwater samples were calculated based on reasonable maximum exposure scenarios and were the UCL of the mean. The skin surface area available for contact (SA) was assumed to be 3,470 cm^2, which represents exposure to head, hands, and forearms (EPA 2014b). The method to calculate the dermally absorbed dose per event (DA_{event}) depends on whether a COPC is

an organic or inorganic chemical. COPCs in groundwater at the Site are all organic compounds. The DA_{event} for each organic COPC was calculated using the Dermwin™ program, which is part of the Estimation Programs Interface (EPI) Suite™ developed by the EPA's Office of Pollution Prevention and Toxics and Syracuse Research Corporation (EPA 2012). This approach is consistent with the EPA RSL guidance (EPA 2014b). The event frequency (EV) is assumed to be once per day (EPA 2002), and the event duration (t_{event}) is assumed to be 4 hours, as recommended by VADEQ (2014). The chemical-specific assumptions for dermal permeability coefficient of the compound in water (Kp), lipophilic property (B), fraction absorbed water (FA), time to reach steady state (t*), and lag time (tau) were obtained from EPA's EPI Suite™ and EPA's RAGS Part E. The Dermwin™ program outputs for each organic COPC in groundwater are included in Appendix F-7. The calculated DA_{event} for the organic COPCs are provided in Appendix F-6. The assumptions for exposure frequency (EF), exposure duration (ED), body weight (BW), and averaging time (AT) are the same as those for incidental ingestion of groundwater for a construction and utility worker.

Estimated intakes from incidental dermal contact with groundwater by current and future construction and utility workers are provided in Appendix F-6.

7.3.2.9 Inhalation of Volatiles in Air from Groundwater by Construction and Utility Workers

Current and future construction and utility workers may be exposed to volatile COPCs in shallow groundwater by inhalation. The intake from inhalation of volatile COPCs in shallow was calculated using the following equation:

$$\text{Intake (mg/m}^3\text{)} = (CA_{trench} \times ET \times EF \times ED) / (AT \times 24 \text{ hours/day})$$

Where:

CA_{trench}	=	Exposure point concentration in trench air (mg/m^3)
EF	=	Exposure frequency (days/year)
ET	=	Exposure time (hours/day)
ED	=	Exposure duration (years)
AT	=	Averaging time (days)

As discussed previously, the exposure point concentrations of volatile COPCs in trench air from groundwater (Table 7-8) were estimated using a model developed by the VADEQ. The exposure time (ET) for a construction and utility worker is assumed to be the standard VADEQ default value of 4 hours (VADEQ 2014). The exposure frequency (EF), exposure duration (ED), and averaging time (AT) are the same as those for incidental ingestion of groundwater.

Estimated intakes from inhalation of volatiles in air from shallow groundwater by construction and utility workers are provided in Appendix F-6.

7.4 Risk Characterization

The purpose of the risk characterization is to provide a conservative estimate of the potential risk resulting from exposure to COPCs identified in affected media. Potential risks are determined by combining the information on exposure and toxicity to predict the types of effects that may occur and to provide information on the probability or severity of those effects. The use of this conservative approach provides a substantial margin of safety to ensure protection for individuals with different potential exposures and sensitivities under actual conditions of exposure.

The estimated risks and hazards to onsite facility workers and construction and utility workers are provided in Table 7-9 and in Appendices F-5 and F-6. The sum of the total cancer risk for each receptor group was compared to the EPA's target risk range of 1×10^{-6} to 1×10^{-4}. In general, the EPA considers excess cancer risks that are below about 1 chance in 1,000,000 (1×10^{-6}) to be so small as to be negligible, and risks above 1×10^{-4} to be sufficiently large that some sort of remediation is desirable. Excess cancer risks that range between 1×10^{-6} to 1×10^{-4} are generally considered to be acceptable. For non-carcinogens, the individual HQs were summed for an overall

hazard index (HI). If the HI is less than or equal to 1.0, then no adverse health effects are likely associated with exposures to COPCs (EPA 1989).

Based on the risk characterization, chemicals of concern (COCs) were identified. COCs are the COPCs that significantly contribute to a pathway in a use scenario for a receptor that either exceed a 1×10^{-4} cumulative site cancer risk, or exceed a non-carcinogenic HI of 1.0. Chemicals are not considered as significant contributors to risk and, therefore, are not included as COCs if their individual carcinogenic risk contribution is less than 1×10^{-6} and their non-carcinogenic hazard quotient HQ is less than 0.1.

7.4.1 Onsite Facility Worker Exposures

Current and future facility workers are potentially exposed to COPCs in sub-slab vapor as a result of vapor intrusion to indoor air. The estimated total excess cancer risk from potential exposures to COPCs in indoor air is 6.2×10^{-6}, which is within EPA's acceptable cancer risk range. The estimated total non-cancer HI from potential exposures to COPCs in indoor air is 1.7, which exceeds the target HI of 1. The elevated HI is primarily the result of the hypothetical concentration of PCE and TCE in indoor air as a result of vapor intrusion into the manufacturing building.

Based on the risk characterization for an onsite facility worker, the COCs in indoor air are PCE (HQ = 0.9) and TCE (HQ = 0.7) because their non-carcinogenic HQs are greater than 0.1.

7.4.2 Onsite Construction and Utility Worker Exposures

Current and future construction and utility worker are potentially exposed to COPCs in subsurface soil through incidental ingestion, dermal contact, and inhalation of particulates and volatile COPCs; and to COPCs in shallow groundwater in a trench through incidental ingestion, dermal contact, and inhalation of volatiles in trench air.

The estimated total excess cancer risk from potential exposures to COPCs in subsurface soil, groundwater, and trench air is 1.2×10^{-6}, which is within the EPA's acceptable cancer risk range. The estimated total non-cancer HI from potential exposures to COPCs is 58, which exceeds the target HI of 1. The elevated HI is primarily the result of toluene in shallow groundwater and the hypothetical concentrations of toluene in trench air (i.e., volatilization from groundwater).

Based on the risk characterization, the COCs in shallow groundwater are toluene (HQ = 12 for the dermal pathway) and cis-1,2-DCE (HQ = 0.3 for the dermal pathway). The COCs in trench air are benzene (HQ = 0.2), toluene (HQ = 45), TCE (HQ = 0.14), and m&p-xylene (HQ = 0.11).

7.5 Uncertainty Analysis

The procedures and inputs used to assess potential human health risks in this HHRA are subject to a wide variety of uncertainties. In general, there are five main sources of uncertainty and variability in HHRAs of well-characterized sites:

- environmental chemistry sampling and analysis
- exposure assumptions
- fate and transport modelling
- toxicological data and dose-response extrapolations
- combinations of the above

Variability in environmental chemistry sampling and analysis error can stem from the sampling and analysis procedures, and from the heterogeneity of the matrix being sampled. In addition, natural sample variation, typically following a log-normal distribution in environmental applications, is also expected.

Exposure estimation is another potential source of variability and uncertainty. Exposure estimates in many cases are highly dependent on the prediction of intake values, exposure frequency, exposure duration, and other exposure assumptions used in the assessment. Consistent with EPA guidance, the exposure parameters used in this HHRA were selected to ensure that potential exposures were not underestimated. In addition, the maximum concentrations of some COPCs were assumed as the exposure point concentrations. Actual exposures are likely less than the estimates contained in the HHRA.

The EPA's Sub-Slab or Exterior Soil Gas Concentration to Indoor Air Concentration Calculator was used to estimate volatile COPCs in indoor air from sub-slab vapor. This calculator is a source of uncertainty. However, according to EPA guidance, the calculator uses "empirically-based conservative 'generic' attenuation factors that reflect generally reasonable worst-case conditions" (EPA 2014d). Therefore, it is unlikely that the calculated indoor air concentrations were underestimated.

Additional uncertainty is associated with the use of the VADEQ trench model to estimate volatile COPCs in trench air from groundwater. The model assumes default trench dimensions and uses a default air exchange rate. If future excavation activities were conducted, the trench size could vary substantially from the default dimensions, and meteorological conditions could affect air exchange rates. The VADEQ trench model likely overestimates the calculated exposure point concentrations in trench air.

Uncertainty factors are applied to extrapolate doses from animal studies to humans. Extrapolation of toxicological data from animal tests is a large source of uncertainty in any HHRA. There may be important, but unidentified differences in uptake, metabolism, and distribution in the body between the test species and man. Typically, the animals are administered high doses of a chemical in a standard diet while humans are generally exposed too much lower doses in a highly variable diet. Humans have a 70-year lifetime and may be exposed intermittently for an exposure period ranging from months to a full lifetime. Because of these differences, extrapolation error is typically a large source of uncertainty in HHRA. Even when epidemiological studies in humans are available, uncertainties can be large because the diet, activity patterns, exposure duration and frequency, and individual susceptibility may not be the same in the study populations as in the site-specific receptors.

Uncertainties from different sources are compounded in the HHRA. For example, if a chronic daily intake for a contaminant measured in the environment is compared to an RfD to determine potential health hazard, the uncertainties in the concentration measurement, exposure assumptions, and the toxicology are all expressed in the result. To ensure that human health is adequately protected, the risk assessment incorporates conservative (unlikely to underestimate risk) approaches and uncertainty factors. Therefore, the actual risk associated with potential onsite exposures to a COPC in environmental media is unlikely to be larger than the risk predicted in this HHRA.

8 Summary and Conclusions

8.1 Nature and Extent of Impacts

8.1.1 Soil

Based on the investigation results, toluene is the primary contaminant in the unsaturated soil at the Site. Secondary contaminants (benzene and cis-1,2-DCE) were detected at concentrations above the MCL-based SSL in limited number of samples (10 percent) collected during the investigation. Shallow subsurface soils with toluene concentrations at levels of concern are present in the area south and east of the historical toluene storage and use areas. The highest toluene concentration, which is suggestive of immiscible product phase in the soil material, was detected at a depth of 2-3 feet in the area immediately east of the former toluene UST. Based on the field screening and analytical data, the toluene-affected soil in this area extends down to the groundwater surface, which occurs at a depth of approximately 3-4 feet below grade in the affected area.

The very low concentrations of benzene detected above the comparative criteria occur at random locations in the vicinity of the former toluene UST. The chlorinated compound cis-1,2-DCE was detected at low concentrations in samples from boreholes installed near the southwestern corner of the manufacturing building. Overall, the levels of these secondary contaminants in the shallow subsurface soils are not as significant as toluene but could serve as a minor source of constituents to the groundwater system.

8.1.2 Groundwater

The surficial aquifer beneath the western portion of the Site consists of a thick (approximately 15 feet) upper clay layer that grades over several feet into a silty sand layer at a depth of approximately 25 feet bgs. A hard, black clay layer occurs beneath the sand deposits at a depth of approximately 36 feet bgs and is believed to locally act as an aquitard with respect to groundwater flow in the shallow subsurface. The depth to groundwater can exhibit noticeable temporal fluctuations. During the field investigation period, groundwater was encountered at depths ranging from approximately one foot near the wooded wetland area in the western portion of the property to over 4 feet bgs in close proximity to the manufacturing building. Based on groundwater surface contour maps, it was determined that the general groundwater flow direction is to the west and southwest.

Shallow groundwater immediately west of the manufacturing building contains VOCs above the MCLs, with toluene representing the primary contaminant. Secondary contaminants detected above the MCLs include benzene and cis-1,2-DCE. The highest concentrations of toluene (greater than 10,000 µg/l) are found in the central portion of the investigation area extending from the building to the vicinity of the former toluene UST. Toluene concentrations decrease to levels below the MCL a very short distance hydraulically downgradient of the more impacted area. Toluene was not detected in the deeper monitoring wells in the investigation area indicating the vertical extent of toluene-affected groundwater is limited to the predominately clayey deposits occurring to a depth of less than 25 feet in this portion of the Site. Benzene concentrations above the MCL are present in a small area of the toluene-impacted portion of the shallow groundwater. cis-1,2-DCE concentrations above the MCL are limited to the groundwater sample collected from the well inside the manufacturing building.

8.1.3 Sub-Slab Vapor

Evaluation of the historical groundwater sampling results indicated elevated concentrations of toluene and the presence of ancillary VOCs (e.g., benzene) in the vicinity of the former paint room and area immediately west of the manufacturing building. Given the potential for vapor intrusion of these compounds, sub-slab vapor samples were collected to evaluate the potential for VOCs to be present at levels of concern in the air inside the manufacturing building. Toluene was not detected above the industrial air RSL in any of the sub-slab vapor

samples collected. However, benzene, ethylbenzene, 4-ethyl toluene, 2-hexanone, PCE and TCE (i.e., compounds or their degradation products detected in other site media) were detected at concentrations greater than the industrial air RSLs in the sub-slab air samples collected.

8.2 Fate and Transport of Toluene

As indicated by the sampling results, potential routes of migration for toluene (and its associated degradation products) at the Site are principally through the infiltration of soil moisture to the saturated zone and then through the flow of groundwater; sub-slap vapor results indicate that the soil to air and groundwater to air pathways are insignificant. Using Site specific data collected during the RI, the retarded transport velocity for toluene was calculated at 4.2×10^{-3} ft/day (1.5 ft/yr). Based upon the current extent of the plume depicted in Figure 5-4, this rate is underestimated. However, the plume only extends approximately 160 feet downgradient of the source area (i.e., west of MW-11). Given the probable release time frame (before 1985), the plume is likely at stable/steady-state conditions.

Chemical and biological degradation, together with adsorption, are the primary processes that can affect the mobility and persistence of toluene in soil and groundwater. Toluene can undergo biological degradation under both aerobic and anaerobic conditions, but degradation rates are inhibited in areas of high concentration.

8.3 Human Health Risk Assessment

A HHRA was prepared to estimate the nature and probability of adverse health effects in humans who may be exposed to toluene and other volatile chemicals in affected environmental media at the Site under current and potential future land use scenarios. The HHRA is based on a series of health-protective assumptions about exposure characteristics. The assumptions used in the HHRA are intentionally conservative and therefore tend to overestimate the calculated non-cancer and theoretical excess cancer risks for the Site.

Based on the HHRA for the Site, the potential effects of exposure to COPCs in soil, groundwater, and sub-slab vapor at the Site were assessed, as appropriate, and unacceptable non-cancer risk was identified for:

- Facility workers potentially exposed to the hypothetical concentration of COCs in indoor air as a result of vapor intrusion into the manufacturing building.
- Utility/construction workers potentially exposed to COCs in shallow groundwater and trench air while conducting sub-grade work in the toluene-impacted area.

The HHRA did not identify any unacceptable excess cancer risk associated with potential exposures to COPCs in affected environmental media.

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10 Acronyms and Abbreviations

µg/l	micrograms per liter
µg/m^3	micrograms per cubic meter
AS/SVE	air sparge/soil vapor extraction
bgs	below ground surface
Cal/EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cm^2	square centimeter
COCs	chemicals of concern
COPCs	chemicals of potential concern
Csat	soil saturation concentration
CSF	cancer slope factor
DCA	dichloroethane
DCE	dichloroethene
EPA	U.S. Environmental Protection Agency
ERM	Environmental Resource Management
ESA	Environmental Site Assessment
ft/day	feet per day
ft/yr	feet per year
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
ID	inner diameter
K	hydraulic conductivity
kg	kilogram
kg/mg	kilogram per milligram
Koc	organic carbon partition coefficient
LNAPL	light non-aqueous phase liquid
LOAEL	lowest observed adverse effect level
MCL	Maximum Contaminant Level
MEK	methyl ethyl ketone
m^3/kg	cubic milligrams per kilograms
mg/cm^2	milligrams per square centimeter
mg/day	milligrams per day
mg/kg	milligrams per kilogram
mg/kg-day	milligrams per kilogram per day
mg/l	milligrams per liter
mg/m^3	milligrams per cubic meter

MSL	mean sea level
NAPL	non-aqueous phase liquid
NOAEL	no observed adverse effect level
OEHHA	Office of Environmental Health Hazard Assessment
PCE	tetrachloroethene
PEF	particulate emission factor
PID	photoionization detector
PVC	polyvinyl chloride
RAGS	Risk Assessment Guidance for Superfund
RAP	Remedial Action Plan
RfC	reference concentration
RfD	reference dose
RI	Remedial Investigation
RSL	Regional Screening Levels
SCDHEC	South Carolina Department of Health and Environmental Control
SCDNR	South Carolina Department of Natural Resources
SGC-IAC	Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration
SSL	soil screening level
TCE	trichloroethene
UCL	upper confidence level
URF	unit risk factor
USGS	U.S. Geological Survey
UST	underground storage tank
UV	ultra-violet
VADEQ	Virginia Department of Environmental Quality
VCC	Voluntary Cleanup Contract
VF	volatilization factor
VOCs	volatile organic compounds
Wix	Wix Filtration Corp LLC

Figures

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Approved: REJ

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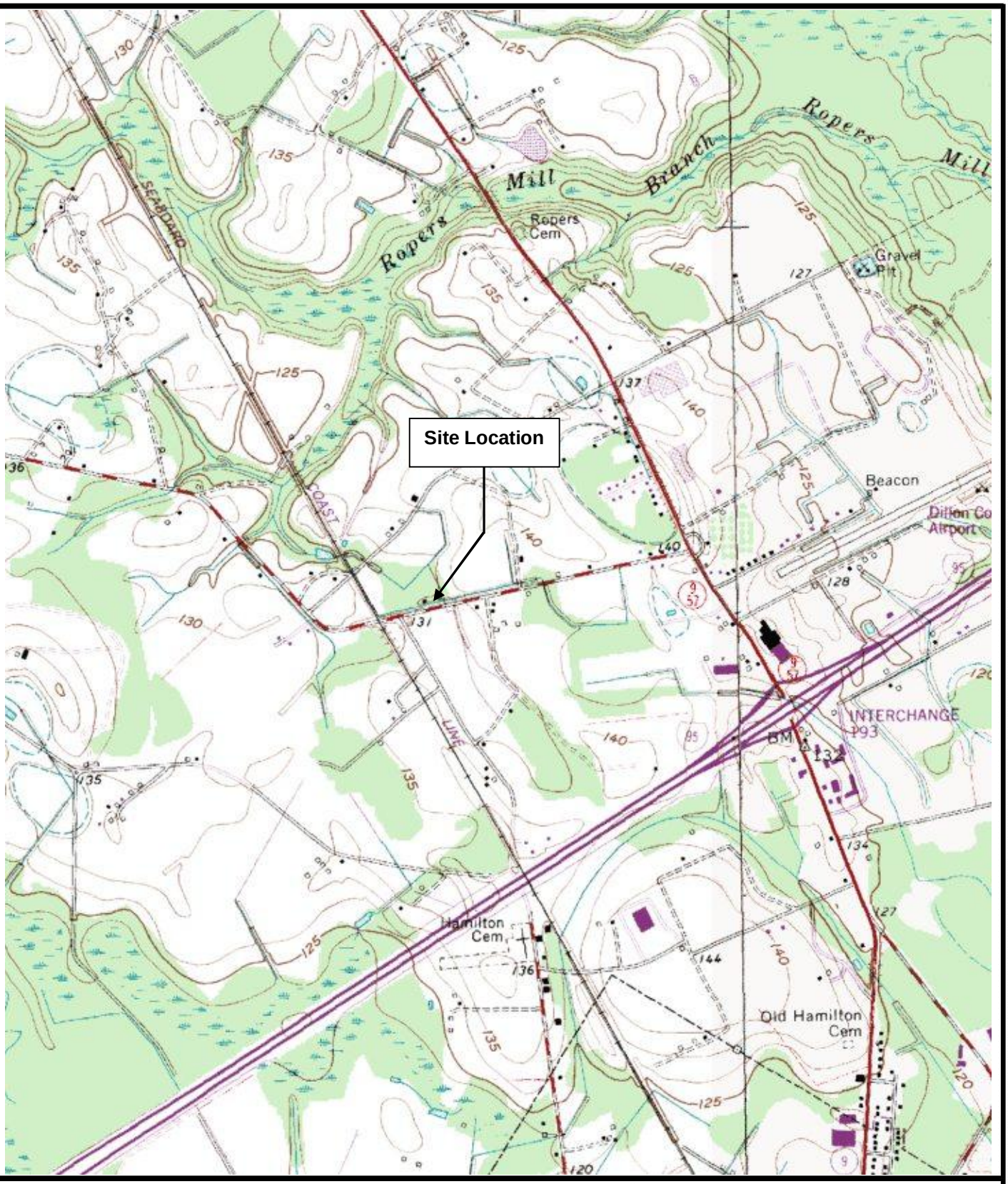

REFERENCE:
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DILLON WEST, SOUTH CAROLINA
PHOTOREVISED 1983 SCALE 1:24,000

N

0 1000 2000 4000

SCALE, FEET

WSP

WSP USA Corp.
11190 Sunrise Valley Drive, Suite 300
Reston, Virginia 20191
(703) 709-6500

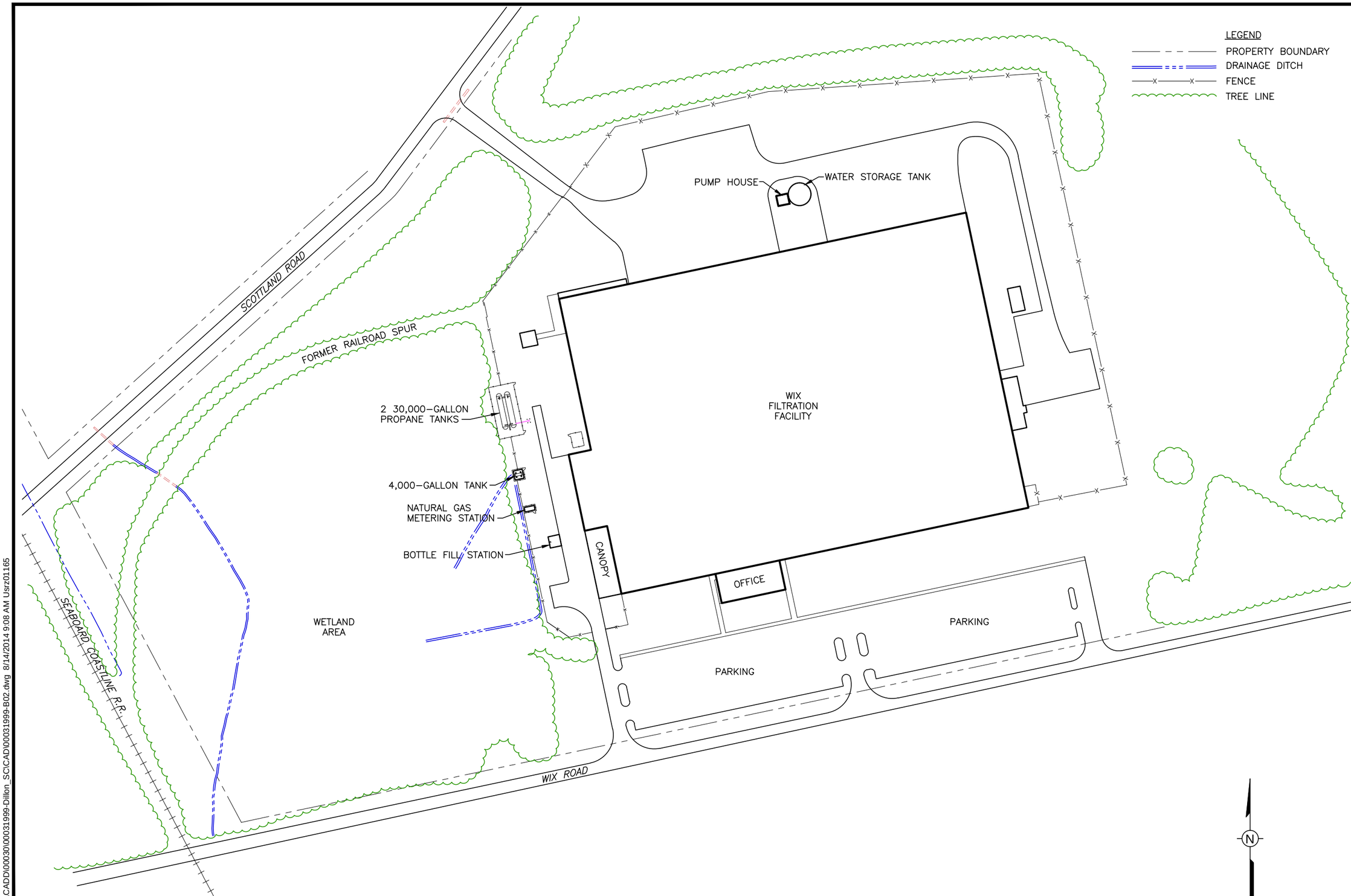
FIGURE 2-1

SITE LOCATION MAP

WIX FILTRATION FACILITY
DILLON, SOUTH CAROLINA

PREPARED FOR

WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA



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2. GOOGLE EARTH PRO AERIAL.

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WIX FILTRATION FACILITY
DILLON, SOUTH CAROLINA
PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

FIGURE 2-2

SITE LAYOUT

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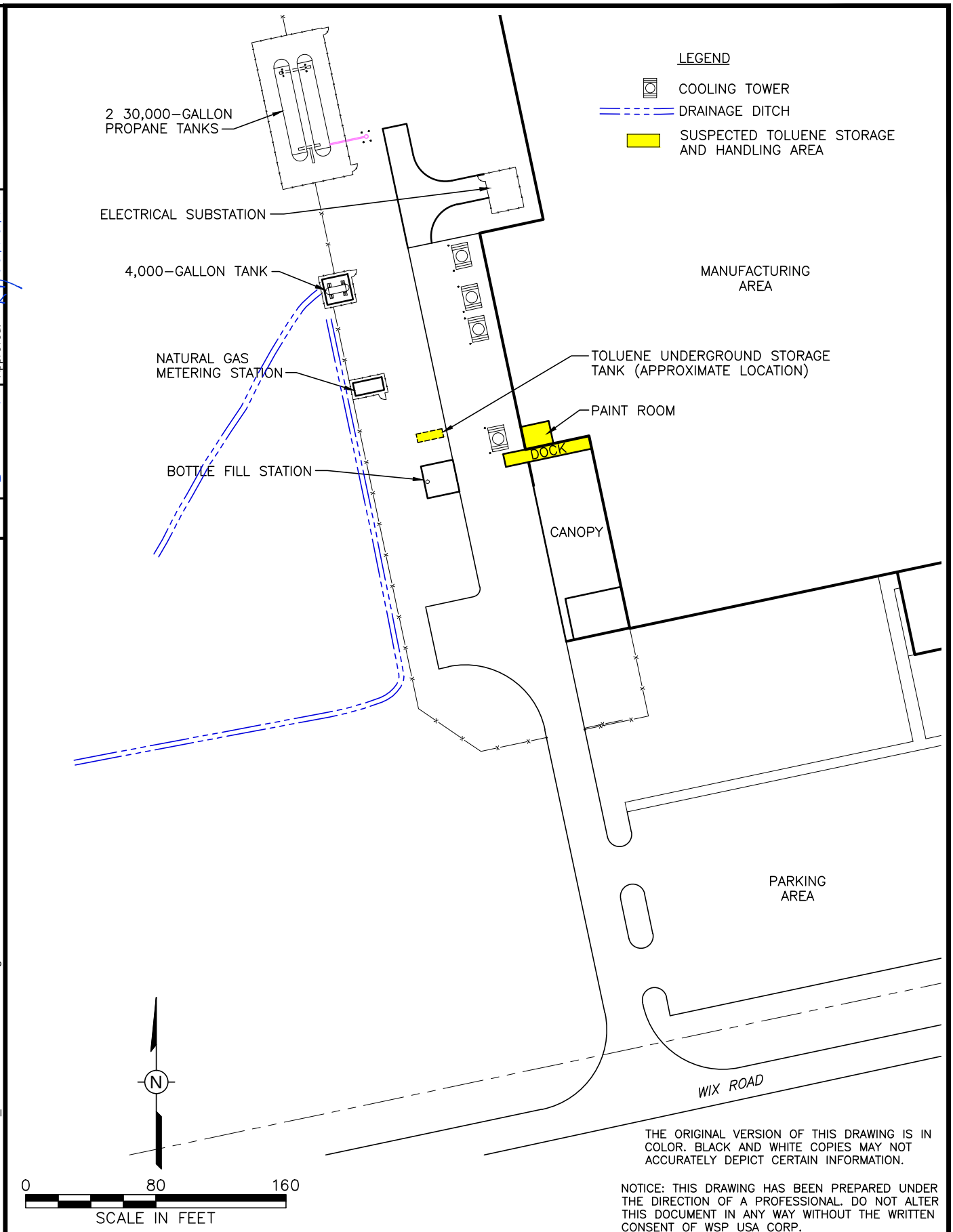

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FIGURE 2-3

AREAS OF PRESUMED HISTORICAL TOLUENE STORAGE AND USE

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DILLON, SOUTH CAROLINA

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WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

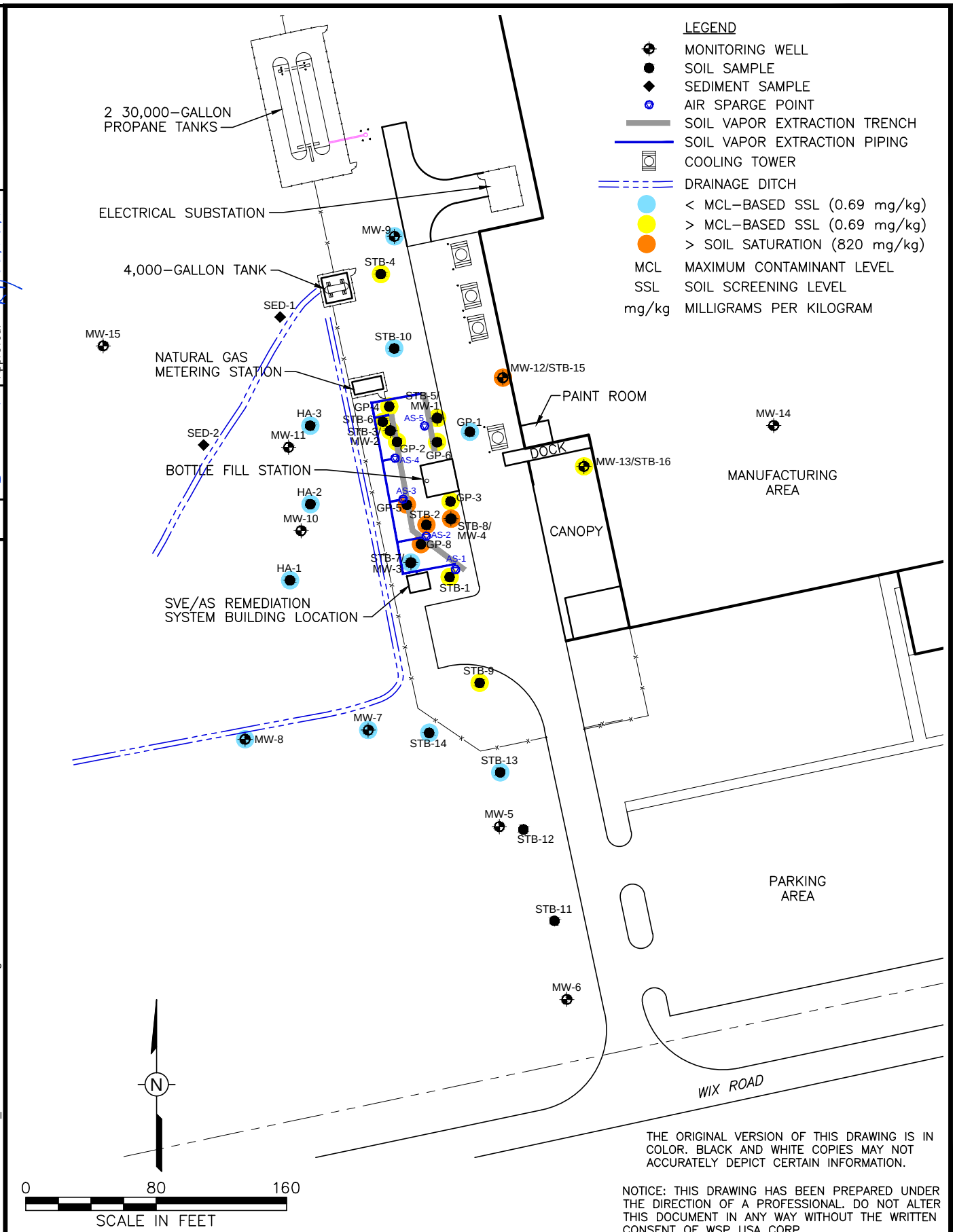

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FIGURE 2-4

SOIL ANALYTICAL RESULTS
PRE-REMEDIAL INVESTIGATION

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DILLON, SOUTH CAROLINA

PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

REFERENCE: ERM FIGURE 6, TITLED GROUND WATER TOLUENE MAP – 08/09/12.

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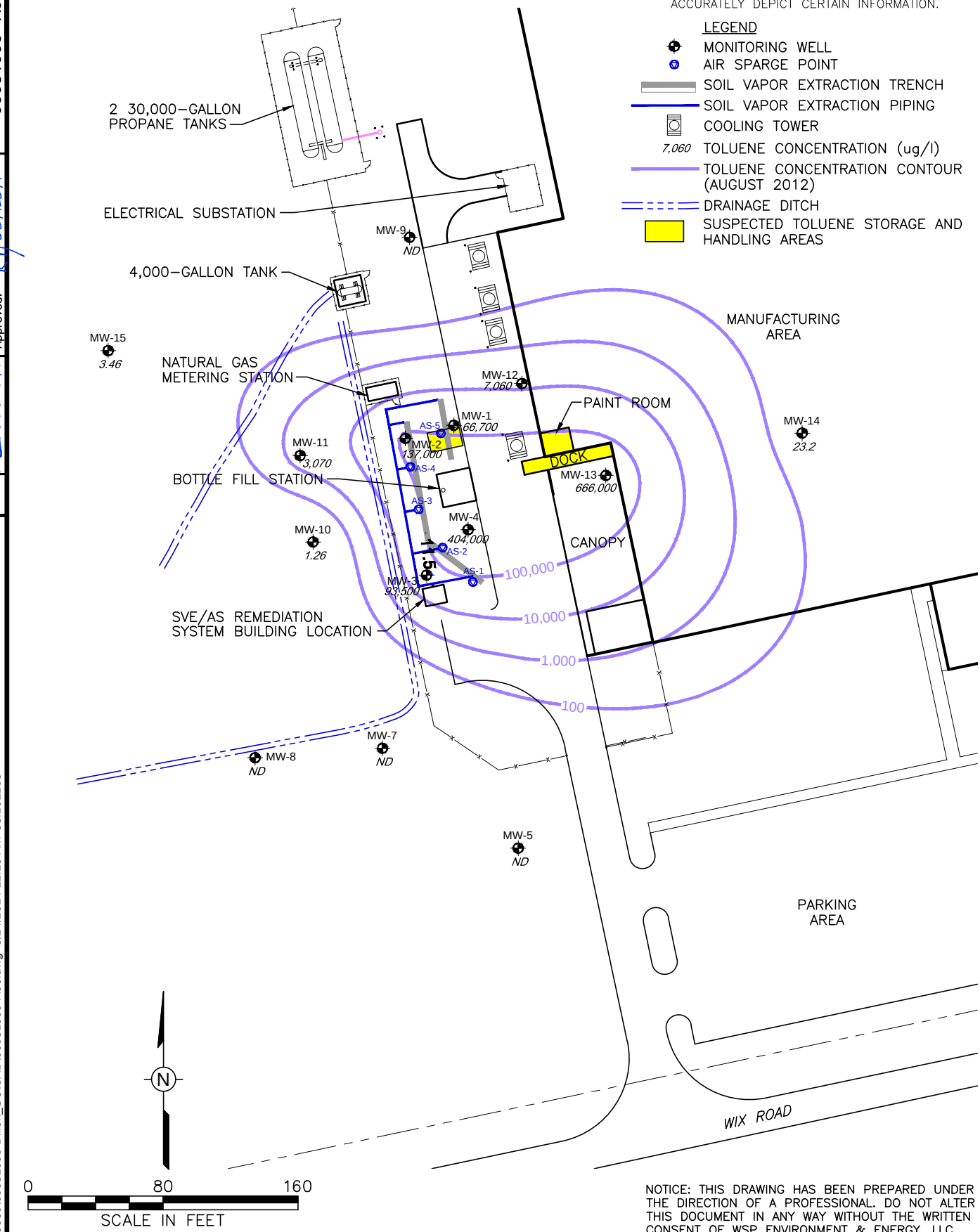

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FIGURE 2–5

GROUNDWATER ISO–CONCENTRATION MAP FOR TOLUENE (AUGUST 2012)

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DILLON, SOUTH CAROLINA

PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

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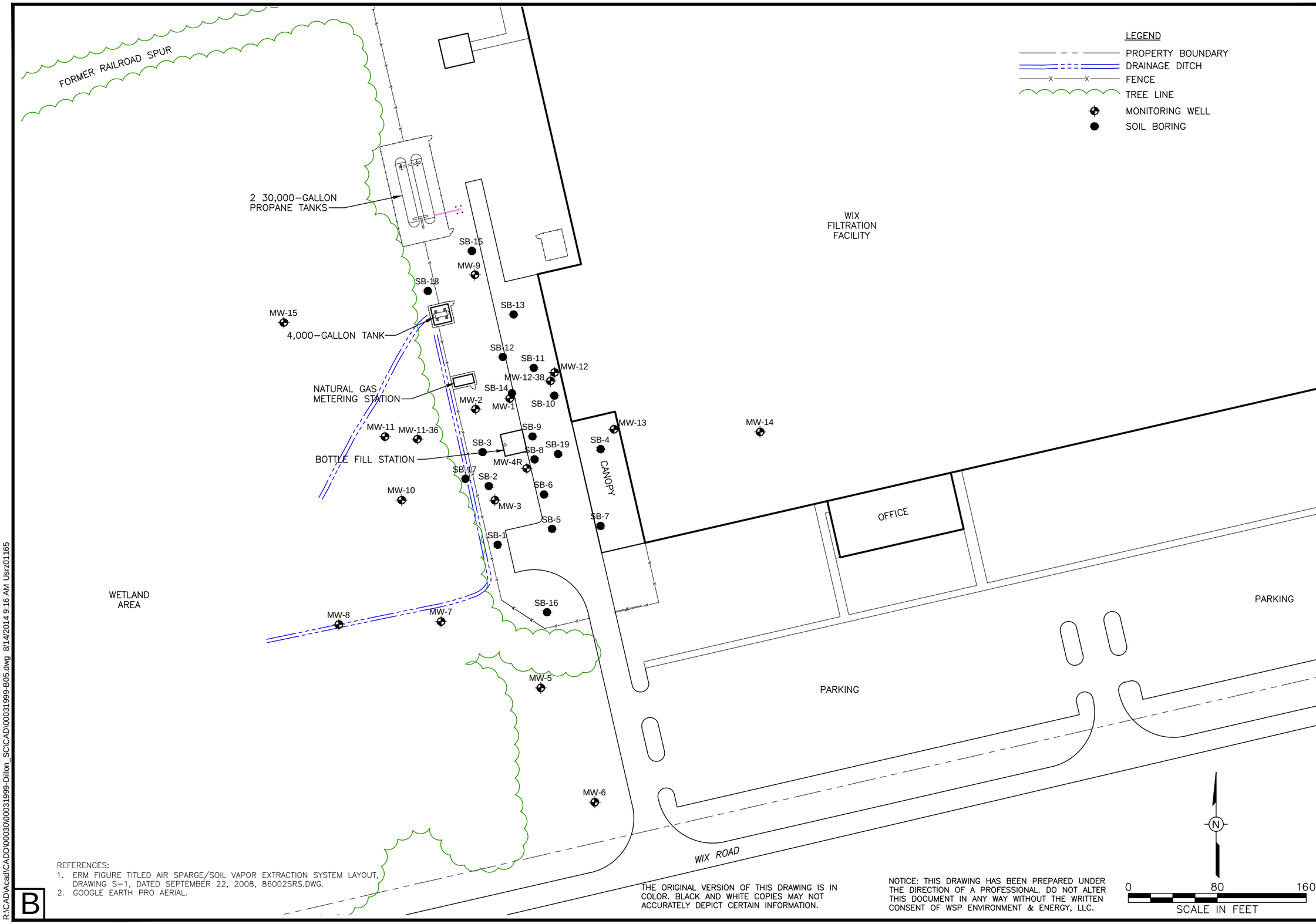

REFERENCES:
1. ERM FIGURE TITLED AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM LAYOUT, DRAWING S–1, DATED SEPTEMBER 22, 2008, 86002SRS.DWG.
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WIX FILTRATION FACILITY
DILLON, SOUTH CAROLINA

PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

FIGURE 3–1

REMEDIAL INVESTIGATION
SOIL BORING LOCATIONS

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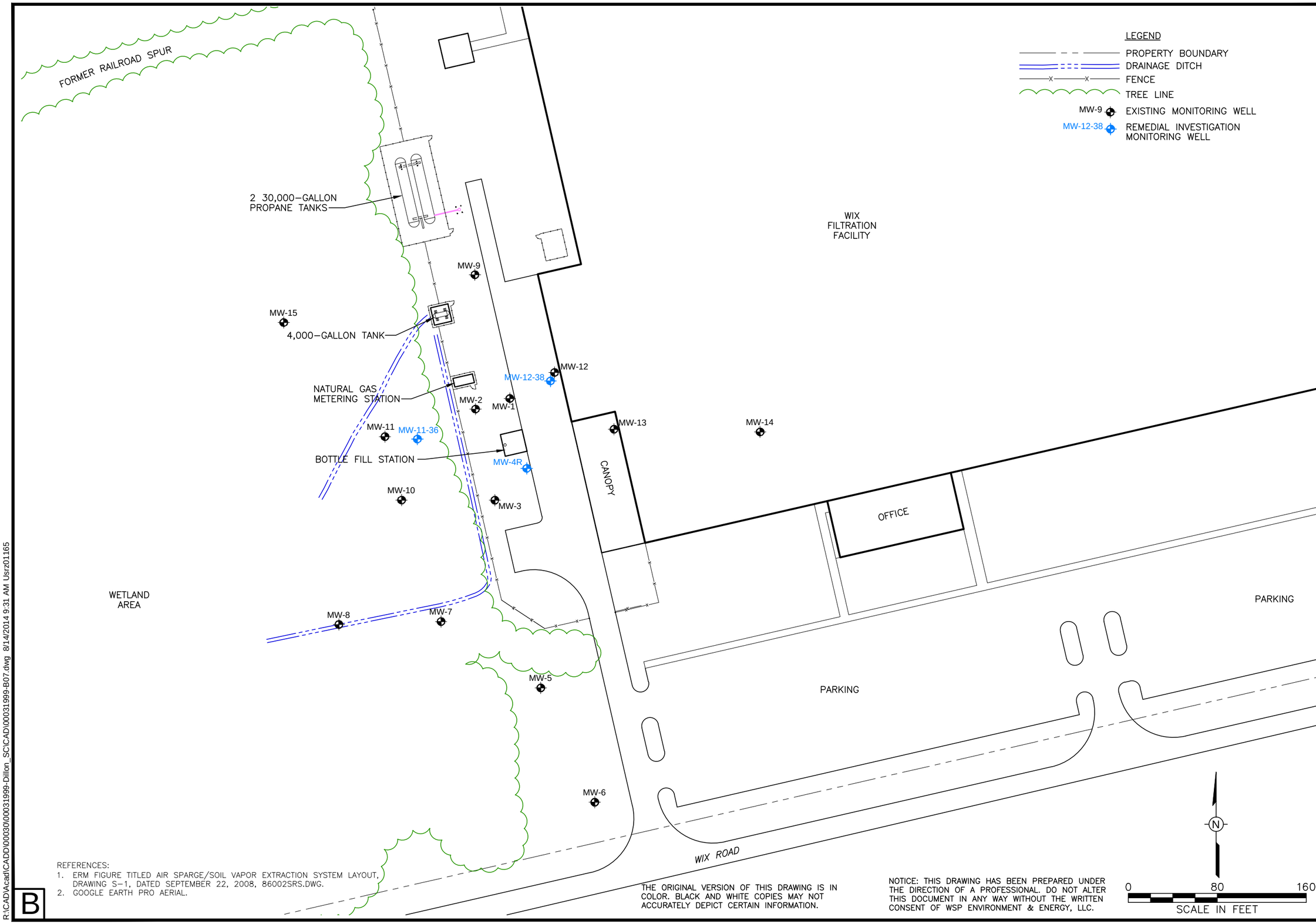

REFERENCES:
1. ERM FIGURE TITLED AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM LAYOUT, DRAWING S–1, DATED SEPTEMBER 22, 2008, 86002SRS.DWG.
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WIX FILTRATION FACILITY
DILLON, SOUTH CAROLINA

PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

FIGURE 3–2

MONITORING WELL LOCATIONS

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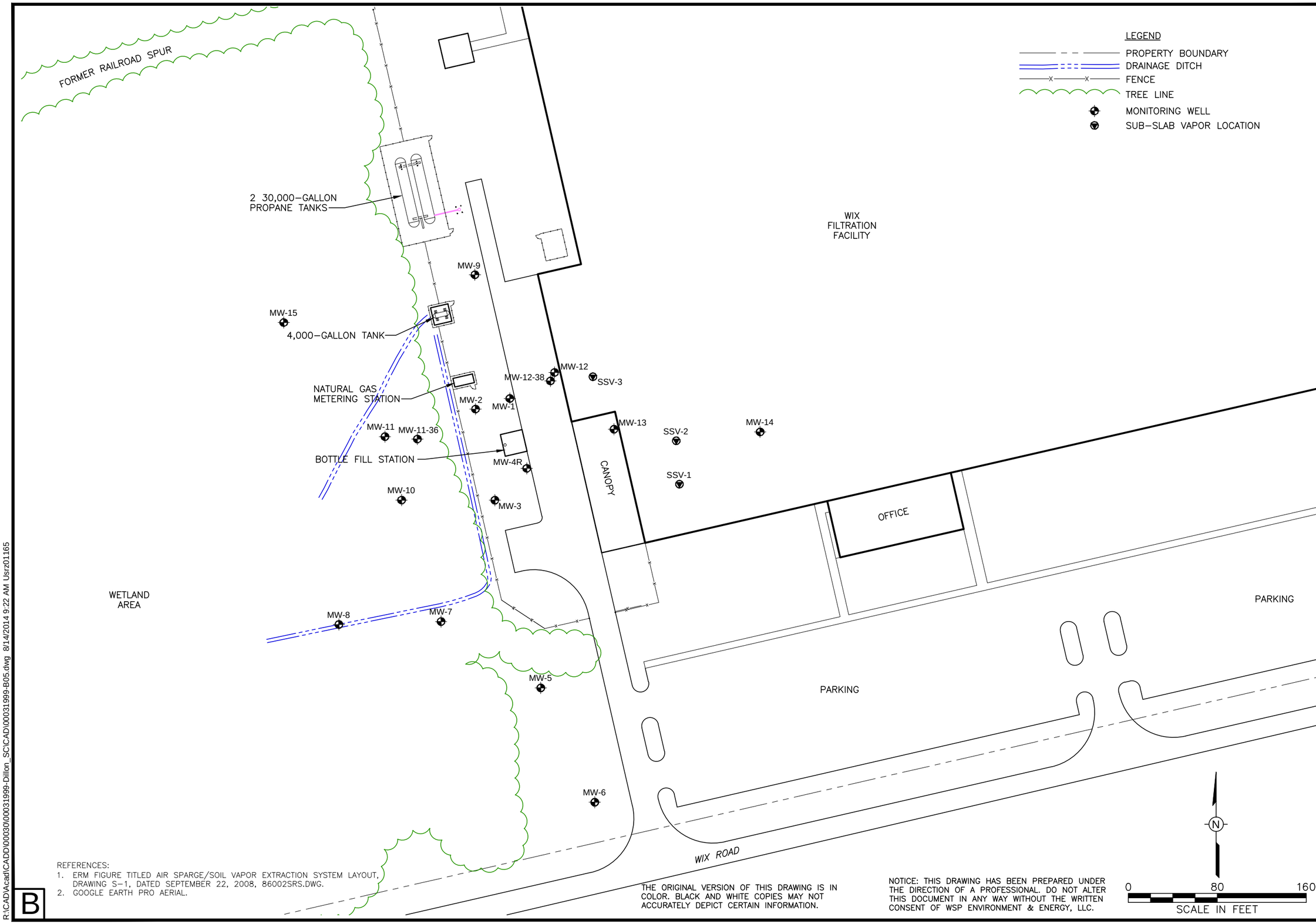

REFERENCES:
1. ERM FIGURE TITLED AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM LAYOUT, DRAWING S-1, DATED SEPTEMBER 22, 2008, 86002SRS.DWG.
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WIX FILTRATION FACILITY
DILLON, SOUTH CAROLINA

PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

FIGURE 3-3

SUB-SLAB VAPOR LOCATIONS

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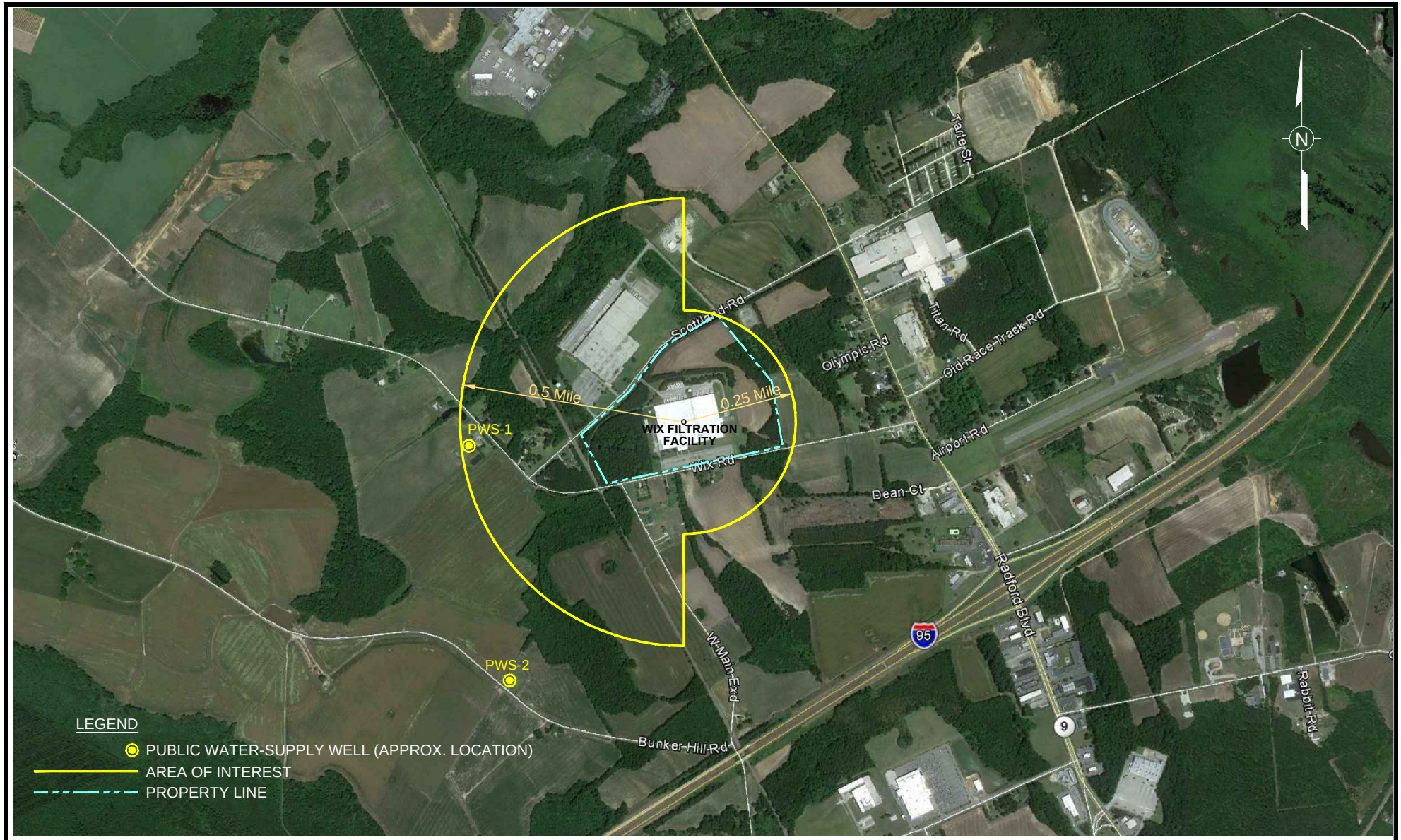

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FIGURE 3–4

AREA OF INTEREST FOR WATER–SUPPLY WELL SURVEY

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DILLON, SOUTH CAROLINA

PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

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SOURCE: U.S. FISH AND WILDLIFE SERVICE, NATIONAL WETLAND INVENTORY; SEPTEMBER 25, 2013. "http:\\107.20.228.18/wetlands/wetlandsMapper.html".

LEGEND

FRESHWATER FORESTED/SHRUB WETLAND

FRESHWATER POND

N

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FIGURE 4–1

SURFACE WATER FEATURES AND WETLAND AREAS

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DILLON, SOUTH CAROLINA

PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

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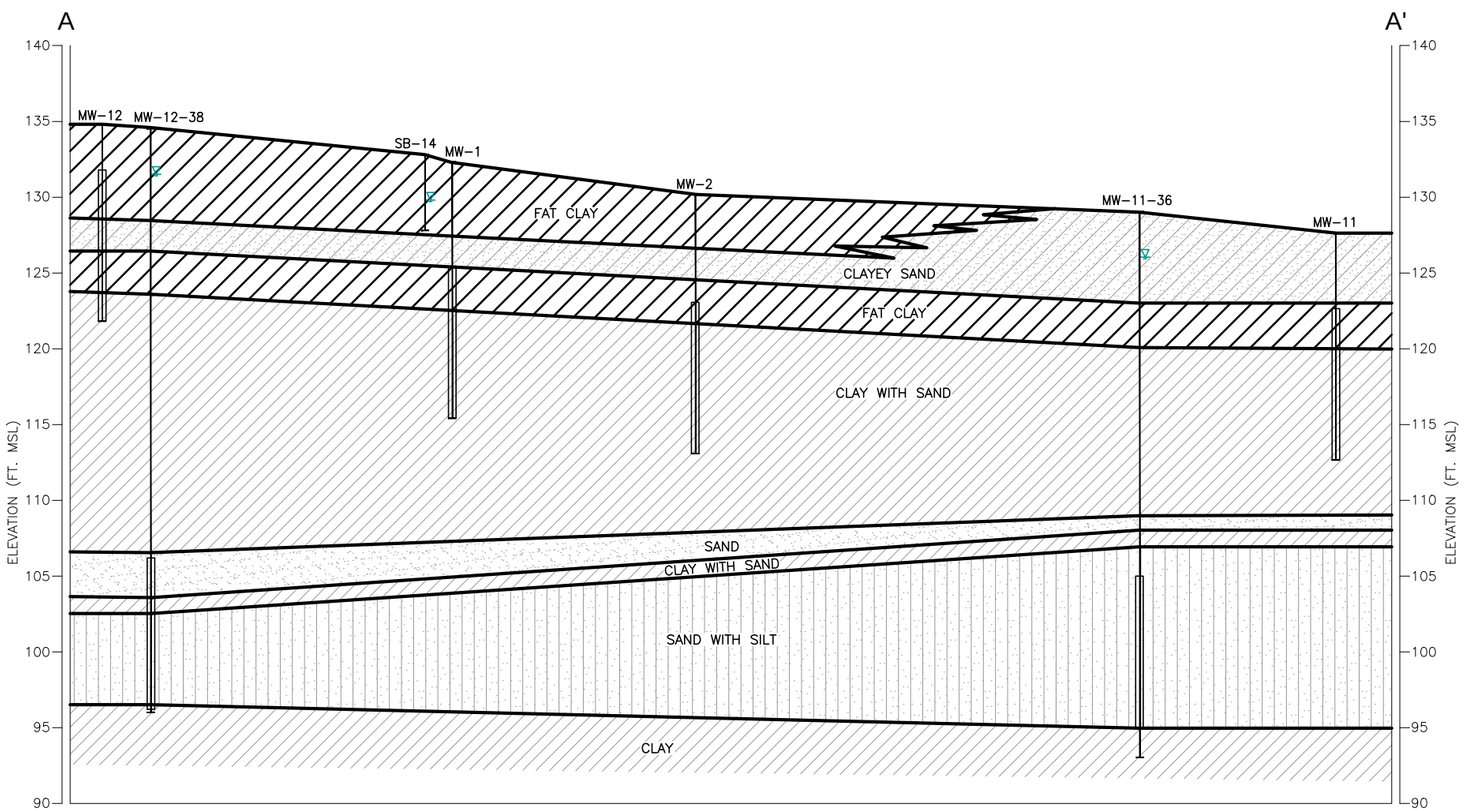
LEGEND

- PROPERTY BOUNDARY
- DRAINAGE DITCH
- FENCE
- TREE LINE
- MONITORING WELL
- SOIL BORING



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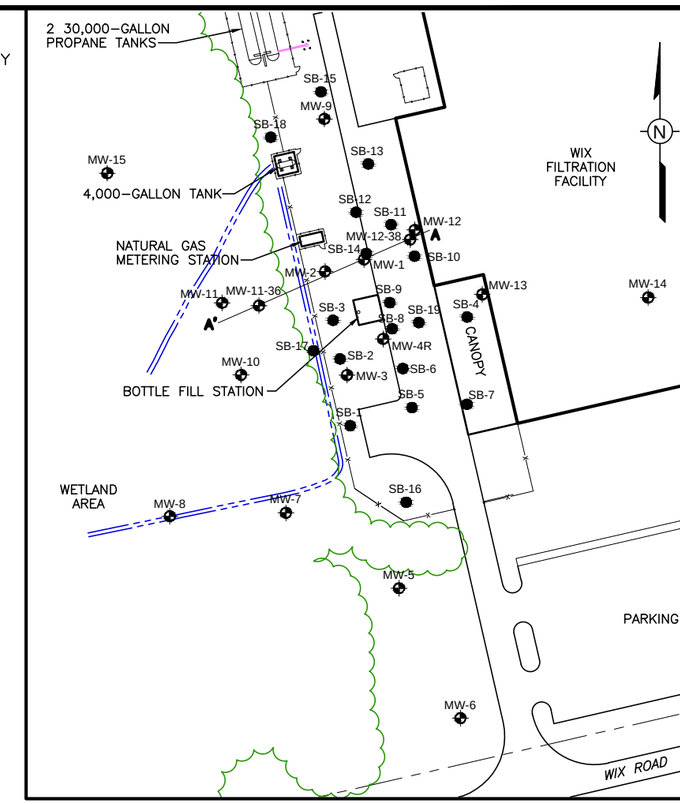
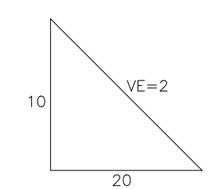


LOCATION MAP
SCALE: 1"=120'

LEGEND

- GROUND SURFACE
- SATURATED SOIL ENCOUNTERED DURING BORING INSTALLATION
- JUNE 2014 GROUNDWATER ELEVATION
- SCREENED INTERVAL
- BOTTOM OF BORING
- INFERRED LITHOLOGIC CONTACT



0 10 20
VERTICAL SCALE IN FEET

0 20 40
HORIZONTAL SCALE IN FEET

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DILLON, SOUTH CAROLINA

FIGURE 4–2

GEOLOGIC CROSS SECTION

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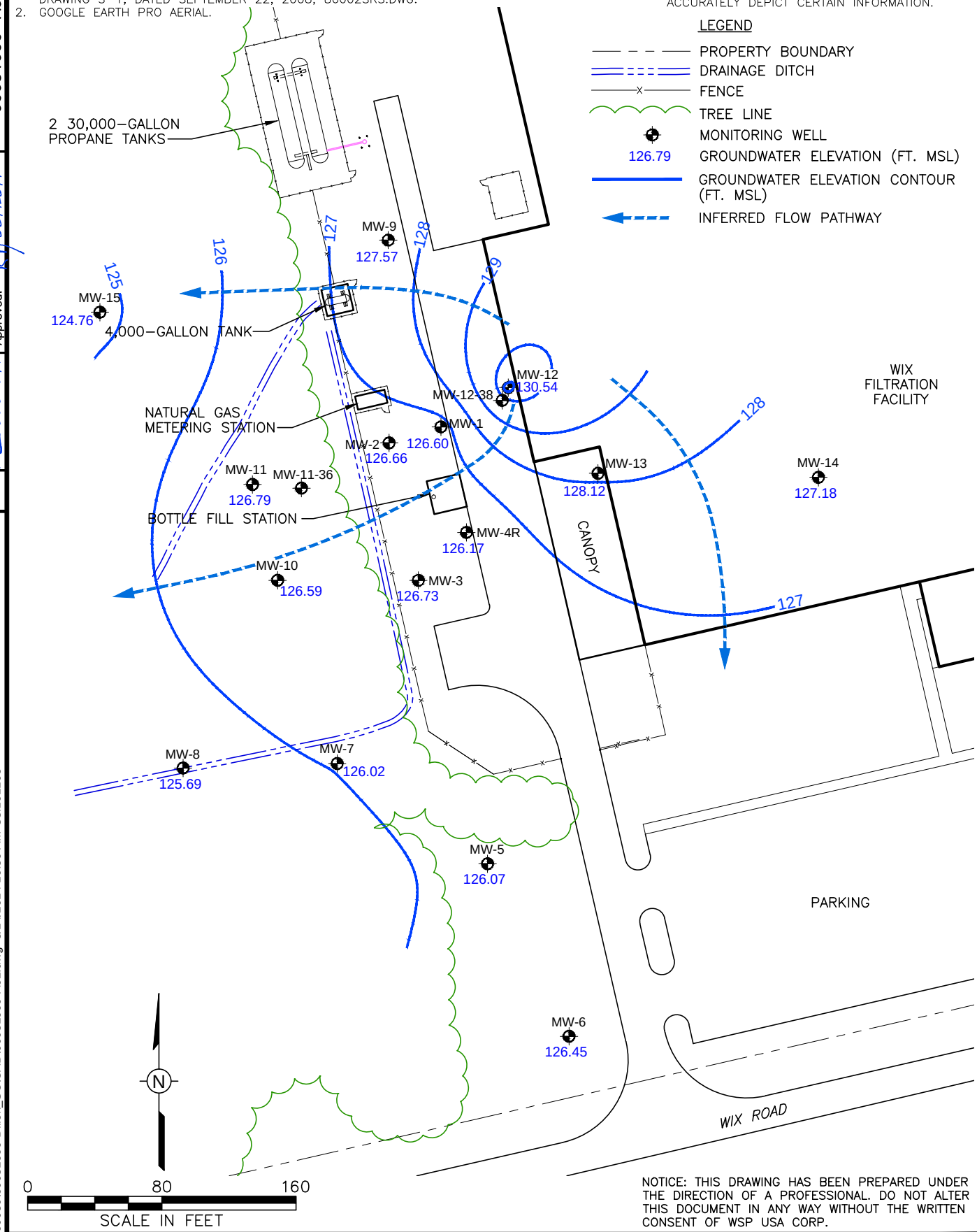

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FIGURE 4-3

GROUNDWATER SURFACE CONTOUR MAP (MAY 2014)

WIX FILTRATION PLANT
DILLON, SOUTH CAROLINA

PREPARED FOR
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DILLON, SOUTH CAROLINA

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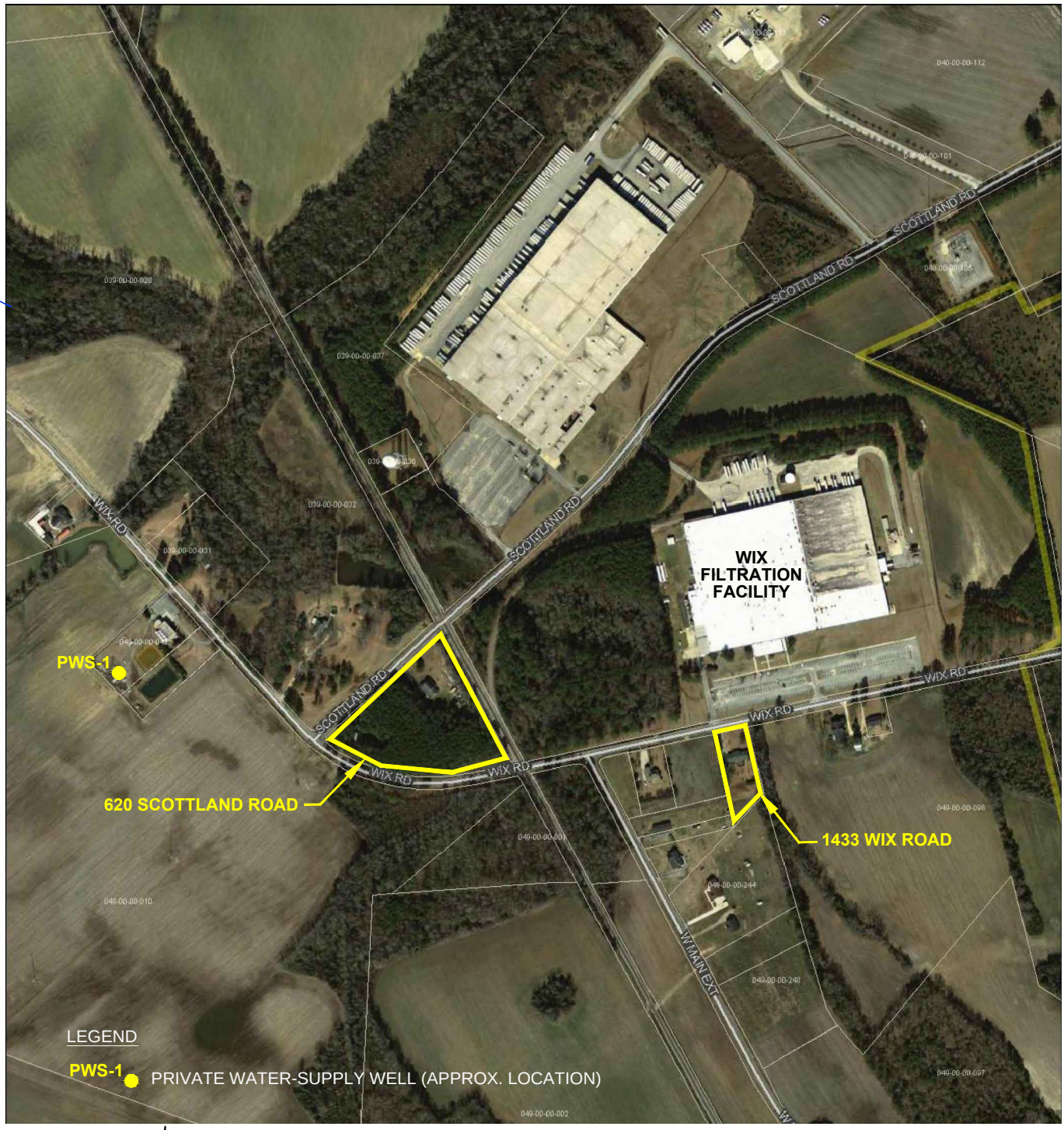

N

0 500 1,000

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FIGURE 4–4

KNOWN AND POTENTIAL LOCATIONS OF PUBLIC AND PRIVATE WATER SUPPLY WELLS

WIX FILTRATION PLANT
DILLON, SOUTH CAROLINA

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WIX FILTRATION CORP LLC
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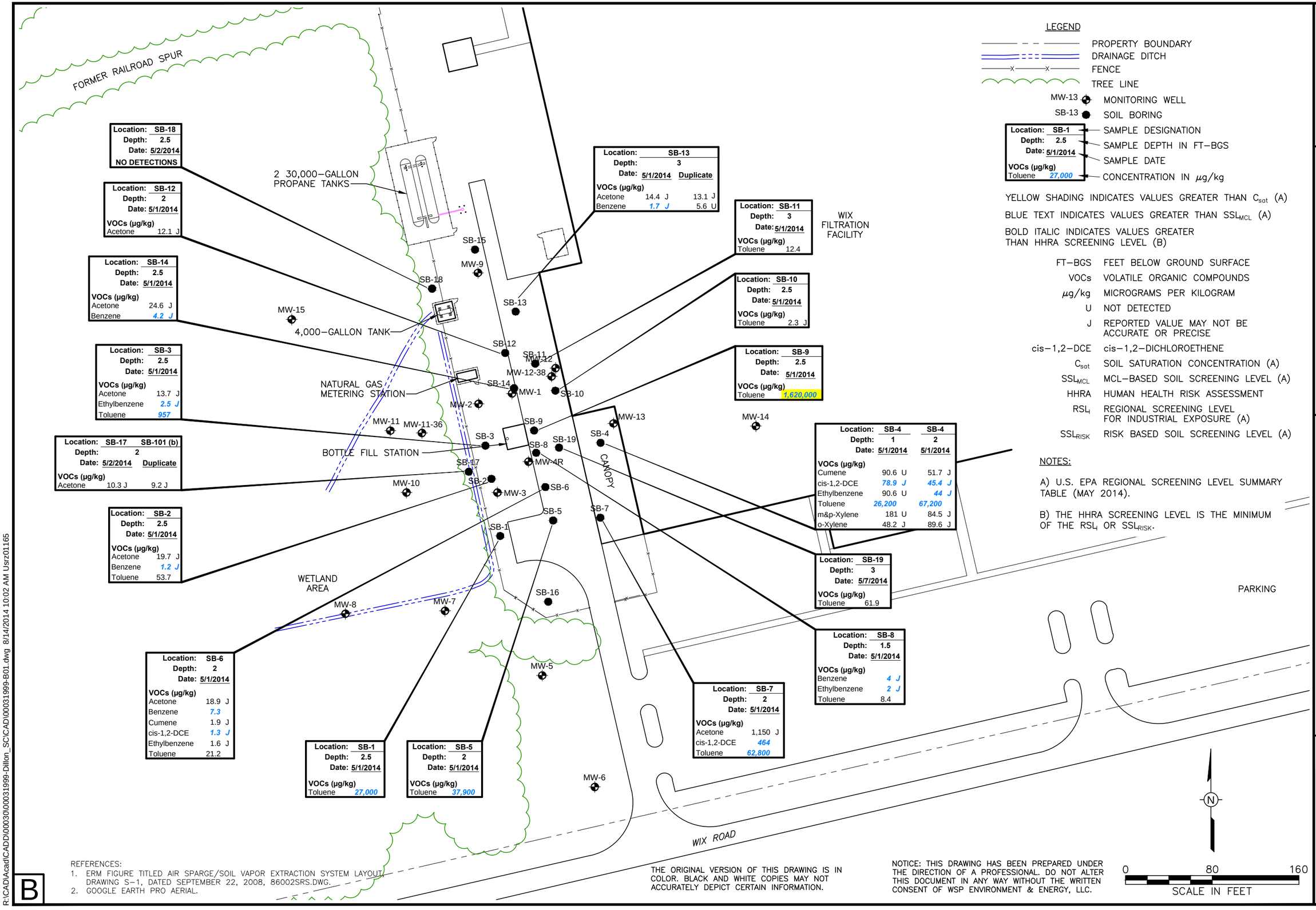

Location: SB-18
Depth: 2.5
Date: 5/2/2014
NO DETECTIONS

Location: SB-12
Depth: 2
Date: 5/1/2014
VOCs (µg/kg)
Acetone 12.1 J

Location: SB-14
Depth: 2.5
Date: 5/1/2014
VOCs (µg/kg)
Acetone 24.6 J
Benzene *4.2 J*

Location: SB-3
Depth: 2.5
Date: 5/1/2014
VOCs (µg/kg)
Acetone 13.7 J
Ethylbenzene *2.5 J*
Toluene *957*

Location: SB-17 SB-101 (b)
Depth: 2
Date: 5/2/2014 Duplicate
VOCs (µg/kg)
Acetone 10.3 J 9.2 J

Location: SB-2
Depth: 2.5
Date: 5/1/2014
VOCs (µg/kg)
Acetone 19.7 J
Benzene *1.2 J*
Toluene 53.7

Location: SB-6
Depth: 2
Date: 5/1/2014
VOCs (µg/kg)
Acetone 18.9 J
Benzene *7.3*
Cumene 1.9 J
cis-1,2-DCE *1.3 J*
Ethylbenzene 1.6 J
Toluene 21.2

Location: SB-1
Depth: 2.5
Date: 5/1/2014
VOCs (µg/kg)
Toluene *27,000*

Location: SB-5
Depth: 2
Date: 5/1/2014
VOCs (µg/kg)
Toluene *37,900*

Location: SB-13
Depth: 3
Date: 5/1/2014 Duplicate
VOCs (µg/kg)
Acetone 14.4 J 13.1 J
Benzene *1.7 J* 5.6 U

Location: SB-11
Depth: 3
Date: 5/1/2014
VOCs (µg/kg)
Toluene 12.4

Location: SB-10
Depth: 2.5
Date: 5/1/2014
VOCs (µg/kg)
Toluene 2.3 J

Location: SB-9
Depth: 2.5
Date: 5/1/2014
VOCs (µg/kg)
Toluene *1,620,000*

Location: SB-4 SB-4
Depth: 1 2
Date: 5/1/2014 5/1/2014
VOCs (µg/kg)
Cumene 90.6 U 51.7 J
cis-1,2-DCE *78.9 J* *45.4 J*
Ethylbenzene 90.6 U *44 J*
Toluene *26,200* *67,200*
m&p-Xylene 181 U 84.5 J
o-Xylene 48.2 J 89.6 J

Location: SB-19
Depth: 3
Date: 5/7/2014
VOCs (µg/kg)
Toluene 61.9

Location: SB-8
Depth: 1.5
Date: 5/1/2014
VOCs (µg/kg)
Benzene *4 J*
Ethylbenzene *2 J*
Toluene 8.4

Location: SB-7
Depth: 2
Date: 5/1/2014
VOCs (µg/kg)
Acetone 1,150 J
cis-1,2-DCE *464*
Toluene *62,800*

LEGEND

- PROPERTY BOUNDARY
- DRAINAGE DITCH
- FENCE
- TREE LINE
- MW-13 MONITORING WELL
- SB-13 SOIL BORING

Location: SB-1 — SAMPLE DESIGNATION
Depth: 2.5 — SAMPLE DEPTH IN FT–BGS
Date: 5/1/2014 — SAMPLE DATE
VOCs (µg/kg)
Toluene *27,000* — CONCENTRATION IN µg/kg

YELLOW SHADING INDICATES VALUES GREATER THAN C_{sat} (A)

BLUE TEXT INDICATES VALUES GREATER THAN SSL_{MCL} (A)

BOLD ITALIC INDICATES VALUES GREATER THAN HHRA SCREENING LEVEL (B)

FT–BGS	FEET BELOW GROUND SURFACE
VOCs	VOLATILE ORGANIC COMPOUNDS
µg/kg	MICROGRAMS PER KILOGRAM
U	NOT DETECTED
J	REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE
cis–1,2–DCE	cis–1,2–DICHLOROETHENE
C_{sat}	SOIL SATURATION CONCENTRATION (A)
SSL_{MCL}	MCL–BASED SOIL SCREENING LEVEL (A)
HHRA	HUMAN HEALTH RISK ASSESSMENT
RSL_I	REGIONAL SCREENING LEVEL FOR INDUSTRIAL EXPOSURE (A)
SSL_{RISK}	RISK BASED SOIL SCREENING LEVEL (A)

NOTES:

A) U.S. EPA REGIONAL SCREENING LEVEL SUMMARY TABLE (MAY 2014).

B) THE HHRA SCREENING LEVEL IS THE MINIMUM OF THE RSL_I OR SSL_{RISK}.

REFERENCES:
1. ERM FIGURE TITLED AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM LAYOUT DRAWING S–1, DATED SEPTEMBER 22, 2008, 86002SRS.DWG.
2. GOOGLE EARTH PRO AERIAL.

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WIX FILTRATION FACILITY
DILLON, SOUTH CAROLINA

PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

FIGURE 5–1

REMEDIAL INVESTIGATION
SOIL SAMPLING RESULTS
(MAY 2014)

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REFERENCES:
1. ERM FIGURE TITLED AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM LAYOUT, DRAWING S-1, DATED SEPTEMBER 22, 2008, 86002SRS.DWG.
2. GOOGLE EARTH PRO AERIAL.

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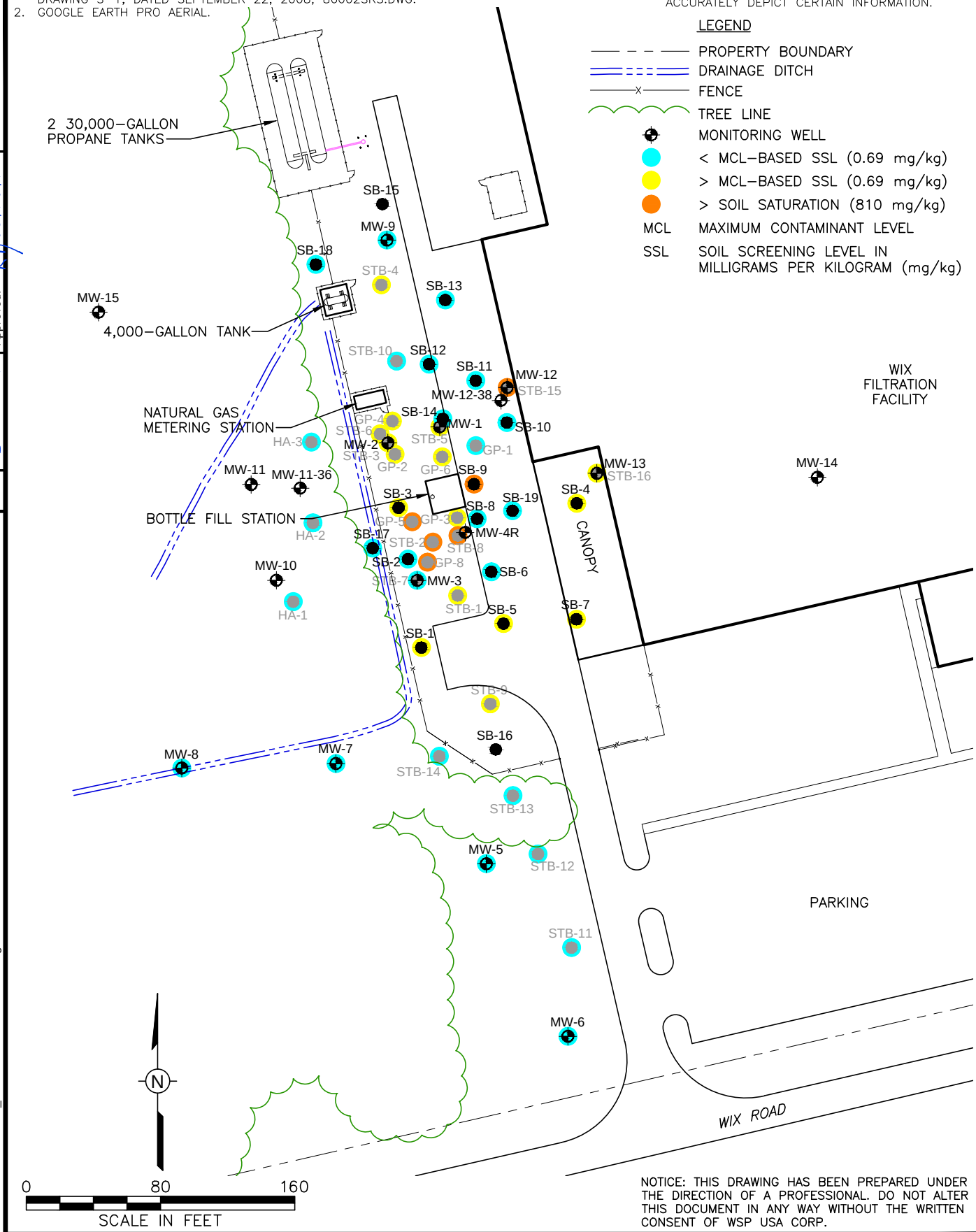

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FIGURE 5-2

SOIL TOLUENE RESULTS

WIX FILTRATION PLANT
DILLON, SOUTH CAROLINA

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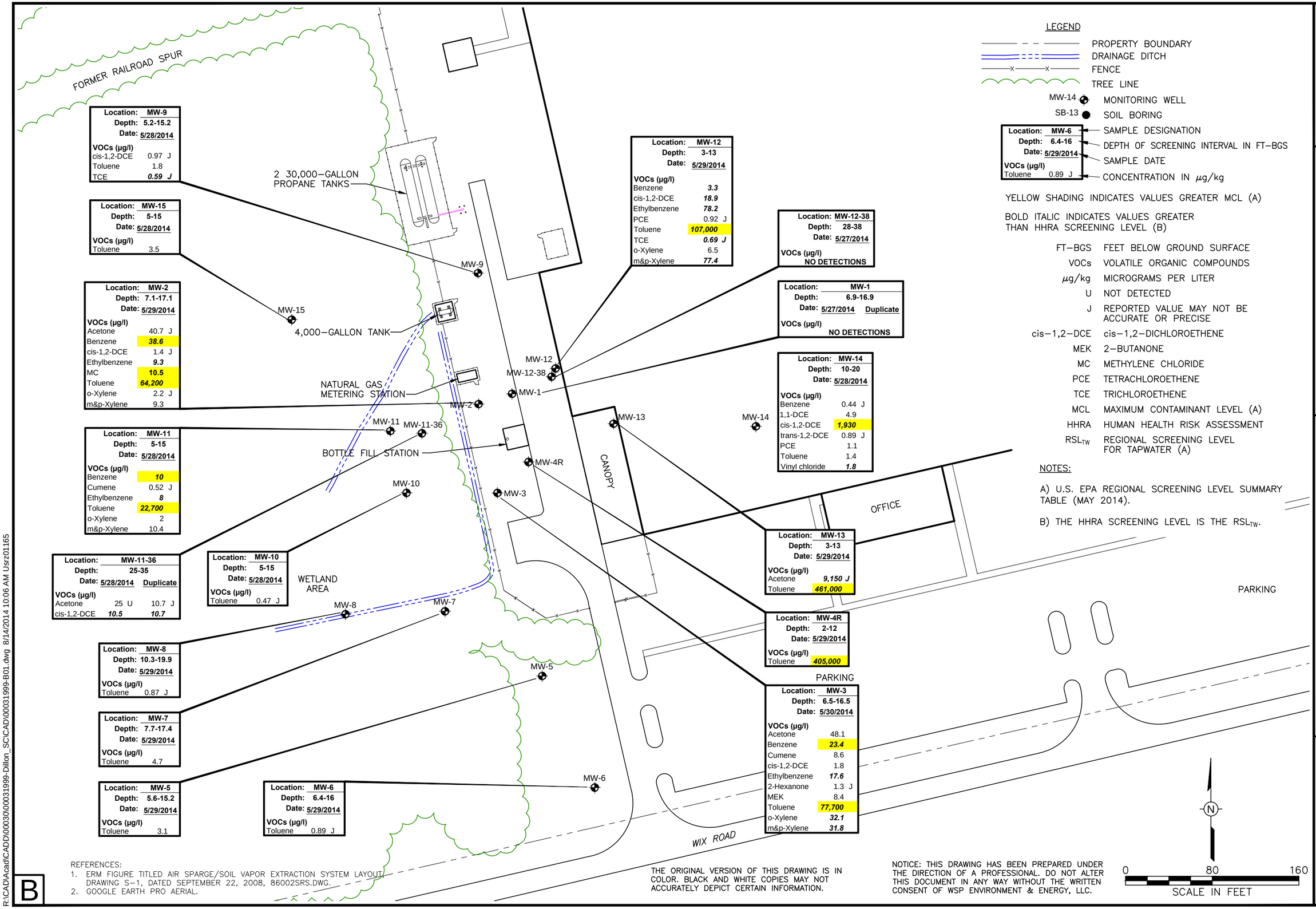
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA



LEGEND

- PROPERTY BOUNDARY
- DRAINAGE DITCH
- FENCE
- TREE LINE
- MW-14 MONITORING WELL
- SB-13 SOIL BORING
- Location: MW-6 — SAMPLE DESIGNATION
- Depth: 6.4-16 — DEPTH OF SCREENING INTERVAL IN FT–BGS
- Date: 5/29/2014 — SAMPLE DATE
- VOCs (µg/l) Toluene 0.89 J — CONCENTRATION IN µg/kg

YELLOW SHADING INDICATES VALUES GREATER MCL (A)

BOLD ITALIC INDICATES VALUES GREATER THAN HHRA SCREENING LEVEL (B)

FT–BGS	FEET BELOW GROUND SURFACE
VOCs	VOLATILE ORGANIC COMPOUNDS
µg/kg	MICROGRAMS PER LITER
U	NOT DETECTED
J	REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE
cis–1,2–DCE	cis–1,2–DICHLOROETHENE
MEK	2–BUTANONE
MC	METHYLENE CHLORIDE
PCE	TETRACHLOROETHENE
TCE	TRICHLOROETHENE
MCL	MAXIMUM CONTAMINANT LEVEL (A)
HHRA	HUMAN HEALTH RISK ASSESSMENT
RSL_{TW}	REGIONAL SCREENING LEVEL FOR TAPWATER (A)

NOTES:

A) U.S. EPA REGIONAL SCREENING LEVEL SUMMARY TABLE (MAY 2014).

B) THE HHRA SCREENING LEVEL IS THE RSL_{TW}.

REFERENCES:
1. ERM FIGURE TITLED AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM LAYOUT, DRAWING S–1, DATED SEPTEMBER 22, 2008, 86002SRS.DWG.
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WIX FILTRATION FACILITY
DILLON, SOUTH CAROLINA

PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

FIGURE 5–3

REMEDIAL INVESTIGATION
GROUNDWATER SAMPLING RESULTS
(MAY 2014)

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REFERENCES:
1. ERM FIGURE TITLED AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM LAYOUT, DRAWING S-1, DATED SEPTEMBER 22, 2008, 86002SRS.DWG.
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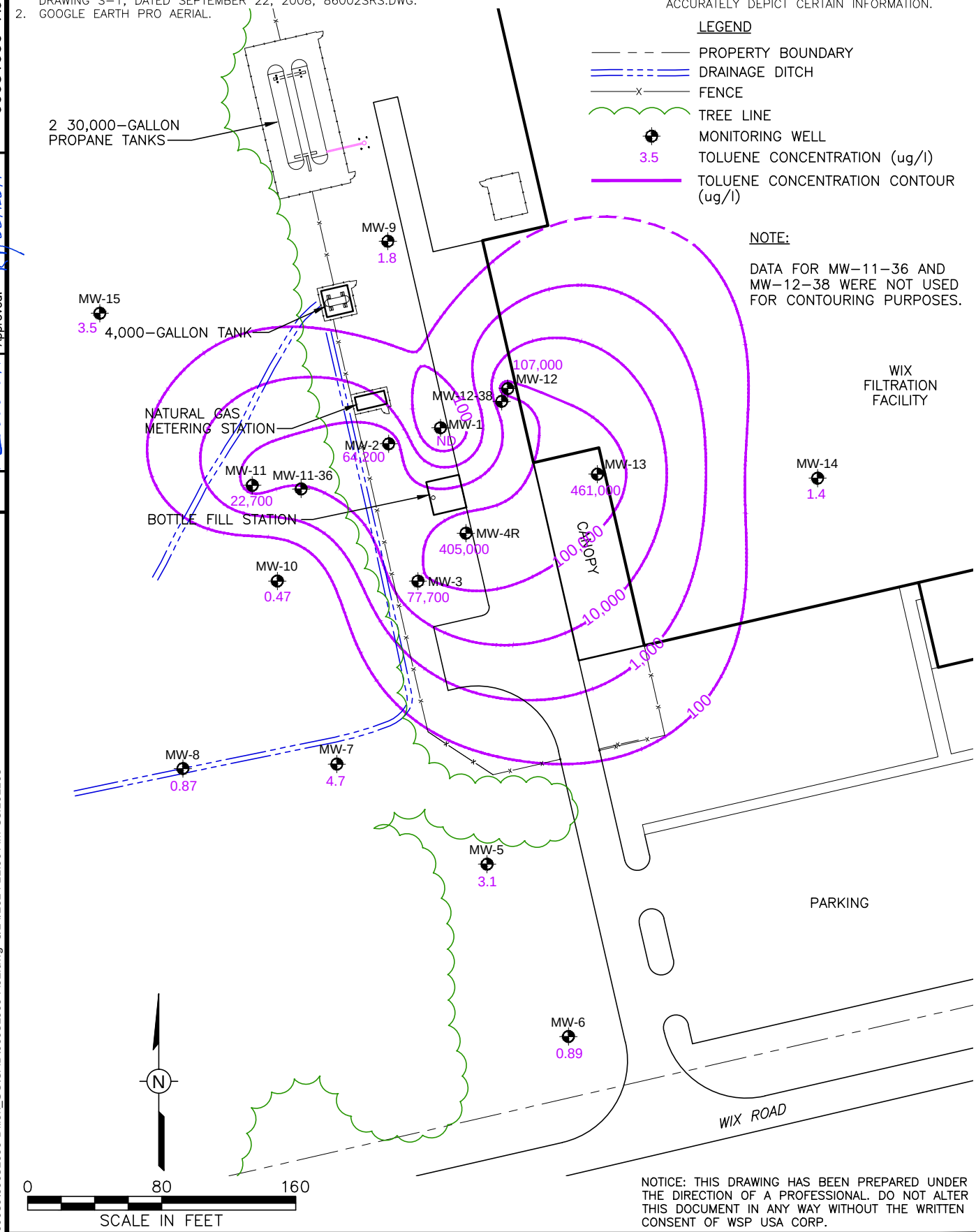

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FIGURE 5-4

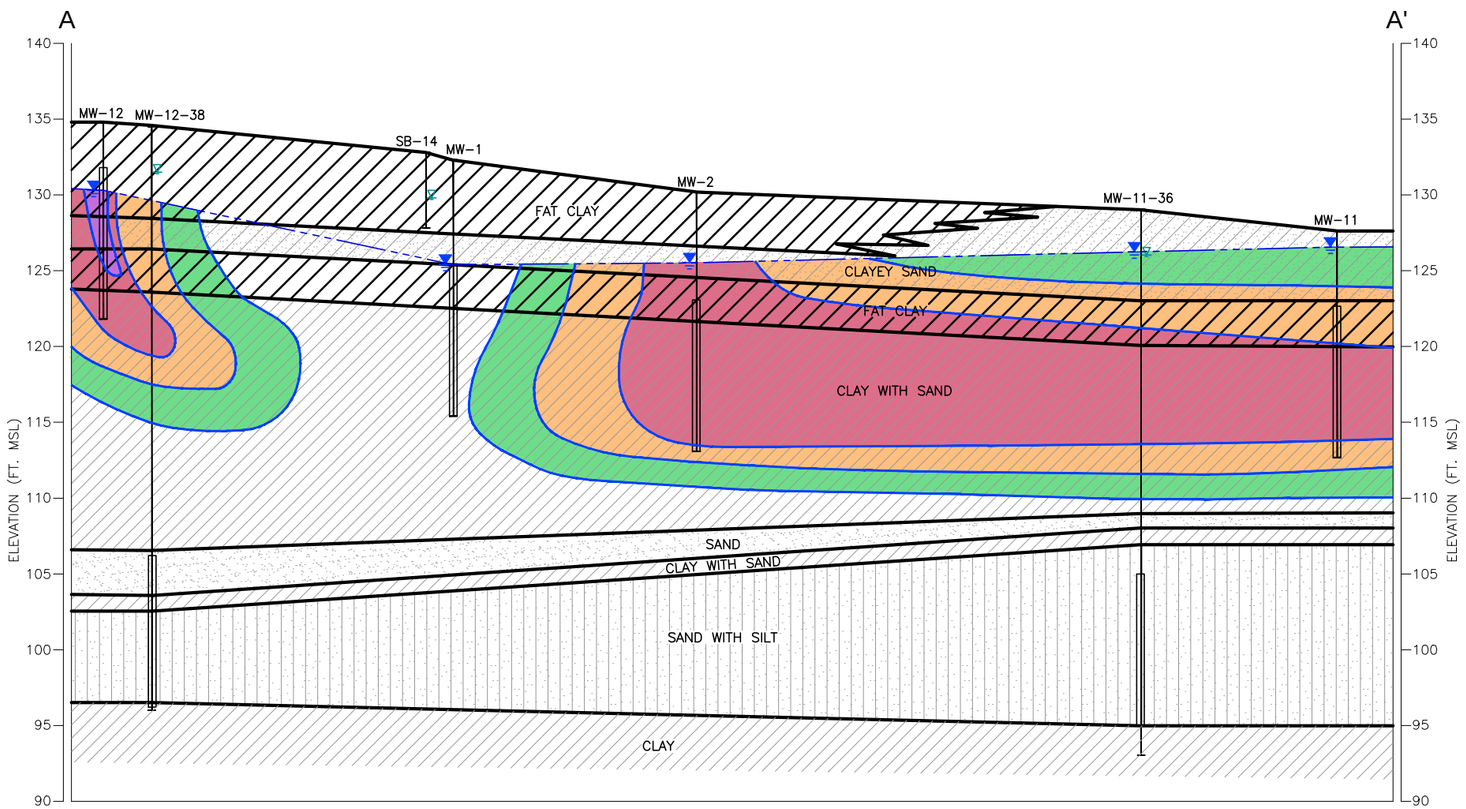
GROUNDWATER ISO-CONCENTRATION MAP FOR TOLUENE (MAY 2014)

WIX FILTRATION PLANT
DILLON, SOUTH CAROLINA

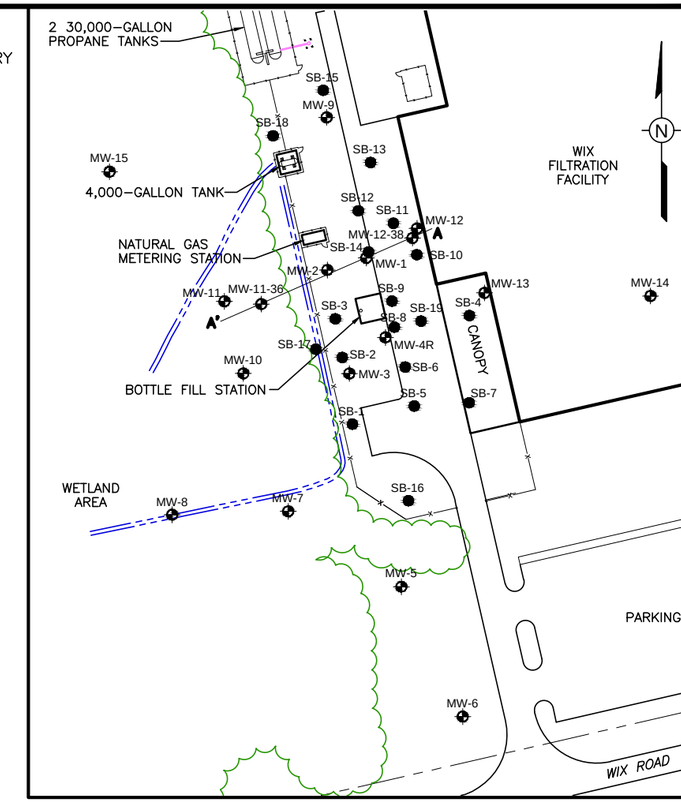
PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

LEGEND

- PROPERTY BOUNDARY
- DRAINAGE DITCH
- FENCE
- TREE LINE
- MONITORING WELL
- SOIL BORING



SECTION A–A'



LOCATION MAP
SCALE: 1"=120'

LEGEND

- GROUND SURFACE
- SATURATED SOIL ENCOUNTERED DURING BORING INSTALLATION
- JUNE 2014 GROUNDWATER ELEVATION
- SCREENED INTERVAL
- BOTTOM OF BORING
- INFERRED LITHOLOGIC CONTACT
- WATER TABLE

TOLUENE CONCENTRATIONS

- 100 ug/l
- 1,000 ug/l
- 10,000 ug/l
- 100,000 ug/l

10 VE=2 20

0 10 20
VERTICAL SCALE IN FEET

0 20 40
HORIZONTAL SCALE IN FEET

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Approved: RN 08/12/2014
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WIX FILTRATION FACILITY
DILLON, SOUTH CAROLINA

PREPARED FOR
WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

FIGURE 5-5

TOLUENE PLUME CROSS SECTION

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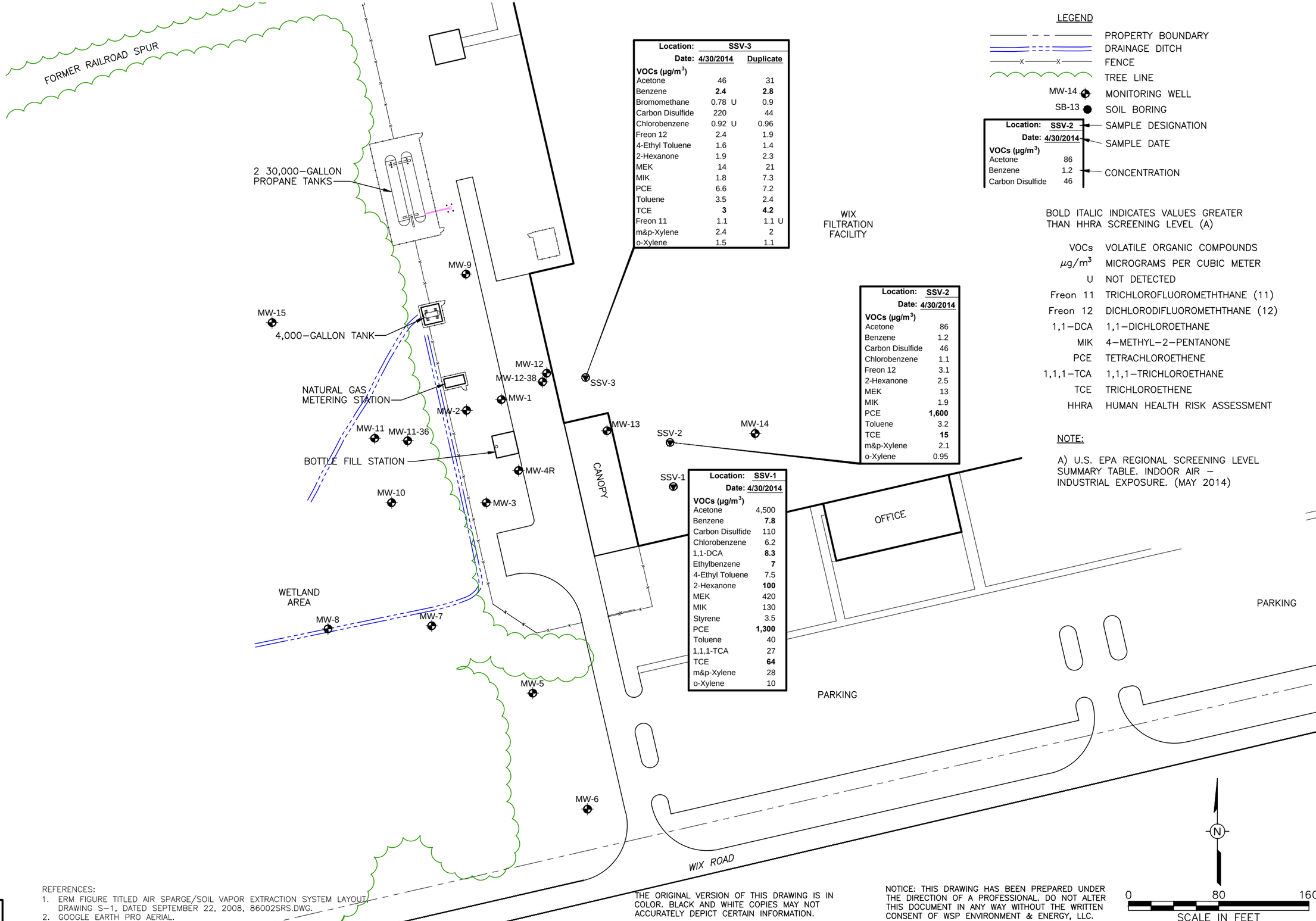

Location:	SSV-3	
Date:	4/30/2014	Duplicate
VOCs (µg/m³)		
Acetone	46	31
Benzene	**2.4**	**2.8**
Bromomethane	0.78 U	0.9
Carbon Disulfide	220	44
Chlorobenzene	0.92 U	0.96
Freon 12	2.4	1.9
4-Ethyl Toluene	1.6	1.4
2-Hexanone	1.9	2.3
MEK	14	21
MIK	1.8	7.3
PCE	6.6	7.2
Toluene	3.5	2.4
TCE	**3**	**4.2**
Freon 11	1.1	1.1 U
m&p-Xylene	2.4	2
o-Xylene	1.5	1.1

Location:	SSV-2
Date:	4/30/2014
VOCs (µg/m³)	
Acetone	86
Benzene	1.2
Carbon Disulfide	46
Chlorobenzene	1.1
Freon 12	3.1
2-Hexanone	2.5
MEK	13
MIK	1.9
PCE	**1,600**
Toluene	3.2
TCE	**15**
m&p-Xylene	2.1
o-Xylene	0.95

Location:	SSV-1
Date:	4/30/2014
VOCs (µg/m³)	
Acetone	4,500
Benzene	**7.8**
Carbon Disulfide	110
Chlorobenzene	6.2
1,1-DCA	**8.3**
Ethylbenzene	**7**
4-Ethyl Toluene	7.5
2-Hexanone	**100**
MEK	420
MIK	130
Styrene	3.5
PCE	**1,300**
Toluene	40
1,1,1-TCA	27
TCE	**64**
m&p-Xylene	28
o-Xylene	10

LEGEND

- PROPERTY BOUNDARY
- DRAINAGE DITCH
- FENCE
- TREE LINE
- MW-14 MONITORING WELL
- SB-13 SOIL BORING

Location:	SSV-2
Date:	4/30/2014
VOCs (µg/m³)	
Acetone	86
Benzene	1.2
Carbon Disulfide	46

SAMPLE DESIGNATION
SAMPLE DATE
CONCENTRATION

BOLD ITALIC INDICATES VALUES GREATER THAN HHRA SCREENING LEVEL (A)

VOCs	VOLATILE ORGANIC COMPOUNDS
µg/m³	MICROGRAMS PER CUBIC METER
U	NOT DETECTED
Freon 11	TRICHLOROFLUOROMETHTHANE (11)
Freon 12	DICHLORODIFLUOROMETHTHANE (12)
1,1–DCA	1,1–DICHLOROETHANE
MIK	4–METHYL–2–PENTANONE
PCE	TETRACHLOROETHENE
1,1,1–TCA	1,1,1–TRICHLOROETHANE
TCE	TRICHLOROETHENE
HHRA	HUMAN HEALTH RISK ASSESSMENT

NOTE:

A) U.S. EPA REGIONAL SCREENING LEVEL SUMMARY TABLE. INDOOR AIR – INDUSTRIAL EXPOSURE. (MAY 2014)

REFERENCES:
1. ERM FIGURE TITLED AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM LAYOUT, DRAWING S–1, DATED SEPTEMBER 22, 2008, 86002SRS.DWG.
2. GOOGLE EARTH PRO AERIAL.

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DWG Name: 00031999–B01

WIX FILTRATION FACILITY
DILLON, SOUTH CAROLINA

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WIX FILTRATION CORP LLC
DILLON, SOUTH CAROLINA

FIGURE 5–6

REMEDIAL INVESTIGATION
SUB–SLAB VAPOR SAMPLING RESULTS
(MAY 2014)

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Primary Source	Primary Release Mechanism	Secondary Source	Secondary Release Mechanism	Exposure Media	Exposure Route	Potential Receptor Populations (a): Onsite Facility Worker	Onsite Construction/ Utility Worker	Offsite Residents
Toluene Storage and Use Area	Historical Leaks from Subgrade Piping and Tank	Soil	Leaching to Subsurface Soil	Surface Soil (<1 foot deep)	Incidental Ingestion	○	○	○
					Dermal Contact	○	○	○
				Subsurface Soil (≥1 foot deep)	Incidental Ingestion	○	●	○
					Dermal Contact	○	●	○
			Wind Erosion	Outdoor Air	Inhalation (particulates)	○	●	○
			Volatilization	Outdoor Air	Inhalation (vapor)	○	●	○
				Indoor Air	Inhalation (vapor)	●	○	○
			Leaching to Groundwater	Shallow Groundwater (<15 feet deep)	Incidental Ingestion	○	●	○
					Dermal Contact	○	●	○
				Deep Groundwater (>15 feet deep)	Incidental Ingestion	○	○	○
					Dermal Contact	○	○	○
			Runoff	Surface Water/Sediments	Incidental Ingestion	○	○	○
					Dermal Contact	○	○	○

a/ ● = Potentially complete exposure pathway.
○ = Pathway evaluated and found incomplete or insignificant, no further evaluation recommended.

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WIX FILTRATION FACILITY
DILLON, SOUTH CAROLINA
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DILLON, SOUTH CAROLINA

FIGURE 7-1

CONCEPTUAL SITE MODEL FOR HUMAN RECEPTORS

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Tables

Table 3-1

Well Construction
Wix Filtration Facility
Dillon, South Carolina (a)

Monitoring Well	Installation Date	May 2014 Survey Data Northing	Easting	Ground Surface (ft-msl)	Top-of-Casing (ft-msl)	Diameter (inches)	Material	Screened Interval (ft-bgs)		(ft-MSL)	
MW-1	5/17/2006	954878.01	2486307.08	132.32	131.85	2	PVC	6.9	16.9	125.42	115.42
MW-2	5/17/2006	954868.49	2486276.21	130.19	129.91	2	PVC	7.1	17.1	123.09	113.09
MW-3	5/17/2006	954786.58	2486293.64	129.27	129.24	2	PVC	6.5	16.5	122.77	112.77
MW-4	5/17/2006	-	-	-	130.47 (b)	2	PVC	6.8	16.7	123.7	113.8
MW-4R	5/8/2014	954815.15	2486322.28	131.11	133.92	2	SS	2	12	129.11	119.11
MW-5	12/6/2006	954617.76	2486334.89	129.24	129.20	2	PVC	5.6	15.2	123.64	114.04
MW-6	12/6/2006	954514.94	2486383.44	129.97	129.97	2	PVC	6.4	16	123.57	113.97
MW-7	12/4/2006	954677.44	2486245.27	128.38	128.48	2	PVC	7.7	17.4	120.68	110.98
MW-8	12/5/2006	954674.78	2486153.39	127.46	130.73	2	PVC	10.3	19.9	117.16	107.56
MW-9	12/7/2006	954989.31	2486275.68	132.11	132.01	2	PVC	5.2	15.2	126.91	116.91
MW-10	2/15/2011	954786.63	2486209.75	127.88	130.78	2	PVC	5	15	122.88	112.88
MW-11	2/15/2011	954843.72	2486194.80	127.63	131.01	2	PVC	5	14.95	122.63	112.68
MW-11-36	5/7/2014	954841.56	2486223.97	129.04	131.63	2	PVC	25	35	104.04	94.04
MW-12	2/15/2011	954901.41	2486347.26	134.81	134.46	2	PVC	3	13	131.81	121.81
MW-12-38	5/6/2014	954893.80	2486343.61	134.51	134.15	2	PVC	28	38	106.51	96.51
MW-13	2/15/2011	954850.39	2486400.74	131.50	131.10	2	PVC	3	13	128.50	118.50
MW-14	2/12/2012	954847.97	2486532.10	135.51	135.25	1.5	PVC	10	20	125.51	115.51
MW-15	2/12/2012	954946.34	2486103.83	128.82	131.11	2	PVC	5	15	123.82	113.82

a/ ft-bgs = feet below ground surface; ft-MSL = feet mean sea level; PVC = polyvinyl chloride; SS = stainless steel.
b/ Well abandoned. Historical survey data provided by ERM.

Table 3-2

Groundwater Elevations
Wix Filtration Facility
Dillon, South Carolina (a)

Monitoring Well	Installation Date	May 2014 Survey Data				Diameter (inches)	Screened Interval (ft-bgs)		March 2010		February 2011		August 2011		February 2012		August 2012	
		Northing	Easting	Ground Surface (ft-msl)	Top-of-Casing (ft-msl)				Depth (ft-toc)	Elevation (ft-msl)	Depth (ft-toc)	Elevation (ft-msl)	Depth (ft-toc)	Elevation (ft-msl)	Depth (ft-toc)	Elevation (ft-msl)	Depth (ft-toc)	Elevation (ft-msl)
MW-1	5/17/2006	954878.01	2486307.08	132.32	131.85	2	6.9	16.9	-	-	2.51	129.34	6.21	125.64	5.13	126.72	5.42	126.43
MW-2	5/17/2006	954868.49	2486276.21	130.19	129.91	2	7.1	17.1	1.77	128.14	2.35	127.56	7.66	122.25	4.29	125.62	5.71	124.20
MW-3	5/17/2006	954786.58	2486293.64	129.27	129.24	2	6.5	16.5	1.15	128.09	1.75	127.49	6.94	122.30	4.27	124.97	5.03	124.21
MW-4 (b)	5/17/2006	-	-	-	130.47	2	6.8	16.7	2.84	127.63	3.04	127.43	9.04	121.43	5.21	125.26	-	-
MW-4R	5/8/2014	954815.15	2486322.28	131.11	133.92	2	2	12	-	-	-	-	-	-	-	-	-	-
MW-5	12/6/2006	954617.76	2486334.89	129.24	129.20	2	5.6	15.2	1.07	128.13	1.75	127.45	7.49	121.71	5.39	123.81	5.28	123.92
MW-6	12/6/2006	954514.94	2486383.44	129.97	129.97	2	6.4	16	-	-	2.57	127.40	8.23	121.74	4.62	125.35	6.20	123.77
MW-7	12/4/2006	954677.44	2486245.27	128.38	128.48	2	7.7	17.4	1.42	127.06	1.38	127.10	6.74	121.74	3.50	124.98	5.22	123.26
MW-8	12/5/2006	954674.78	2486153.39	127.46	130.73	2	10.3	19.9	2.84	127.89	4.28	126.45	10.50	120.23	5.63	125.10	5.44	125.29
MW-9	12/7/2006	954989.31	2486275.68	132.11	132.01	2	5.2	15.2	3.00	129.01	3.61	128.40	7.29	124.72	4.71	127.30	6.29	125.72
MW-10	2/15/2011	954786.63	2486209.75	127.88	130.78	2	5	15	-	-	3.72	127.06	8.29	122.49	5.48	125.30	4.41	126.37
MW-11	2/15/2011	954843.72	2486194.80	127.63	131.01	2	5	14.95	-	-	3.49	127.52	8.99	122.02	5.47	125.54	4.09	126.92
MW-11-36	5/7/2014	954841.56	2486223.97	129.04	131.63	2	25	35	-	-	-	-	-	-	-	-	-	-
MW-12	2/15/2011	954901.41	2486347.26	134.81	134.46	2	3	13	-	-	1.79	132.67	4.26	130.20	5.39	129.07	8.32	126.14
MW-12-38	5/6/2014	954893.80	2486343.61	134.51	134.15	2	28	38	-	-	-	-	-	-	-	-	-	-
MW-13	2/15/2011	954850.39	2486400.74	131.50	131.10	2	3	13	-	-	3.10	128.00	8.30	122.80	5.72	125.38	7.00	124.10
MW-14	2/12/2012	954847.97	2486532.10	135.51	135.25	1.5	10	20	-	-	-	-	-	-	10.42	124.83	11.10	124.15
MW-15	2/12/2012	954946.34	2486103.83	128.82	131.11	2	5	15	-	-	-	-	-	-	6.78	124.33	8.32	122.79

Bold italic values greater than Residential RSL
Shaded values greater than Industrial RSL

Table 3-2

Groundwater Elevations
Wix Filtration Facility
Dillon, South Carolina (a)

Monitoring Well	February 2013		August 2013		February 2014		May 2014	
	Depth (ft-toc)	Elevation (ft-msl)	Depth (ft-toc)	Elevation (ft-msl)	Depth (ft-toc)	Elevation (ft-msl)	Depth (ft-toc)	Elevation (ft-msl)
MW-1	3.00	128.85	3.66	128.19	0.4	131.45	5.25	126.60
MW-2	4.66	125.25	1.99	127.92	0.51	129.40	3.25	126.66
MW-3	3.43	125.81	1.38	127.86	0.63	128.61	2.51	126.73
MW-4 (b)	-	-	-	-	-	-	-	-
MW-4R	-	-	-	-	-	-	7.75 (c)	126.17
MW-5	2.47	126.73	1.67	127.53	0.6	128.60	3.13	126.07
MW-6	3.62	126.35	3.06	126.91	1.3	128.67	3.52	126.45
MW-7	2.69	125.79	1.12	127.36	0.1	128.38	2.46	126.02
MW-8	4.42	126.31	5.37	125.36	3.89	126.84	5.04	125.69
MW-9	5.62	126.39	4.53	127.48	2.76	129.25	4.44	127.57
MW-10	4.00	126.78	5.60	125.18	4.27	126.51	4.19	126.59
MW-11	3.79	127.22	5.56	125.45	4.05	126.96	4.22	126.79
MW-11-36	-	-	-	-	-	-	5.29	126.34
MW-12	5.09	129.37	4.55	129.91	3.58	130.88	3.92	130.54
MW-12-38	-	-	-	-	-	-	8.51	125.64
MW-13	6.87	124.23	2.32	128.78	2.39	128.71	2.98	128.12
MW-14	11.53	123.72	6.75	128.50	6.25	129.00	8.07	127.18
MW-15	6.10	125.01	4.85	126.26	4.3	126.81	6.35	124.76

a/ ft-msl = feet mean sea level; ft-toc = feet top-of-casing; "-" = not measured.
b/ Well abandoned. Historical survey data provided by ERM.
c/ Does not reflect static water level, well did not recover after development.

Bold italic values greater than Residential RSL
Shaded values greater than Industrial RSL

Table 4-1

Soil Physical Properties
Wix Filtration Facility
Dillon, South Carolina (a)

Location	Depth (ft-bgs)	Moisture (percent)	Density (ρ_b) (g/ml)	Specific Gravity	Porosity (η)	USCS Classification
MW-11-36	6-9	25.94	1.59	2.67	0.40	Fat clay with sand (CH)
	12-15	49.96	1.14	2.66	0.57	Sandy lean clay (CL)
MW-12-38	36-38	1.03	-	2.68	-	Poorly graded sand with silt (SP-SM)

a/ ft-bgs = feet below ground surface; g/ml = grams per milliliter; "-" = not available.

Table 5-1

Remedial Investigation Soil Sample Results
Wix Filtration Facility
Dillon, South Carolina (a)

	Screening Levels (c)																
Location:					**SB-1**	**SB-2**	**SB-3**	**SB-4**	**SB-4**	**SB-5**	**SB-6**	**SB-7**	**SB-8**	**SB-9**	**SB-10**	**SB-11**	**SB-12**
Depth (ft-bgs):					**2.5**	**2.5**	**2.5**	**1**	**2**	**2**	**2**	**2**	**1.5**	**2.5**	**2.5**	**3**	**2**
Sample Date:					**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/1/2014**
	C_{sat}	**RSL_i**	**SSL_{MCL}**	**SSL_{RISK}**													
Volatile Organic Compounds (µg/kg)																	
Acetone	114,000,000	67,000,000	-	290	2,450 U (f)	19.7 J	13.7 J	1,810 U	2,180 U	4,660 U	18.9 J	***1,150 J***	85.2 U	46,800 U	89.3 U	83.8 U	12.1 J
Benzene	1,820,000	5,100	2.6	0.23	122 U	***1.2 J***	3.5 U	90.6 U	109 U	233 U	***7.3***	212 U	***4 J***	2,340 U	4.5 U	4.2 U	5.2 U
Bromochloromethane	4,040,000	63,000	-	2.1	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Bromodichloromethane	931,000	1,300	22	0.036	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Bromoform	-	290,000	21	2.4	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Bromomethane	3,590,000	3,000	-	0.19	245 U	7.3 U	7.1 U	181 U	218 U	466 U	8.7 U	424 U	8.5 U	4,680 U	8.9 U	8.4 U	10.3 U
Carbon disulfide	738,000	350,000	-	24	245 U	7.3 U	7.1 U	181 U	218 U	466 U	8.7 U	424 U	8.5 U	4,680 U	8.9 U	8.4 U	10.3 U
Carbon tetrachloride	458,000	2,900	1.9	0.18	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Chlorobenzene	761,000	130,000	68	5.3	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Chloroform	2,540,000	1,400	22	0.061	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Chloromethane	1,320,000	46,000	-	4.9	245 U	7.3 U	7.1 U	181 U	218 U	466 U	8.7 U	424 U	8.5 U	4,680 U	8.9 U	8.4 U	10.3 U
Isopropylbenzene (Cumene)	268,000	990,000	-	74	122 U	3.6 U	3.5 U	90.6 U	51.7 J	233 U	1.9 J	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Cyclohexane	117,000	2,700,000	-	1,300	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,2-Dibromo-3-chloropropane	979,000	64	0.086	0.00014	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Dibromochloromethane	802,000	3,200	21	0.045	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,2-Dibromoethane (EDB)	1,340,000	160	0.014	0.0021	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,2-Dichlorobenzene	376,000	930,000	580	30	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,3-Dichlorobenzene	-	-	-	-	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,4-Dichlorobenzene	-	11,000	72	0.46	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Dichlorodifluoromethane	845,000	37,000	-	30	245 U	7.3 U	7.1 U	181 U	218 U	466 U	8.7 U	424 U	8.5 U	4,680 U	8.9 U	8.4 U	10.3 U
1,1-Dichloroethane	1,690,000	16,000	-	0.78	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,2-Dichloroethane	2,980,000	2,000	1.4	0.048	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,1-Dichloroethene	1,190,000	100,000	2.5	10	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
cis-1,2-Dichloroethene	2,370,000	230,000	21	1.1	122 U	3.6 U	3.5 U	***78.9 J***	***45.4 J***	233 U	***1.3 J***	***464***	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
trans-1,2-Dichloroethene	1,670,000	2,300,000	29	11	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,2-Dichloropropane	1,360,000	4,400	1.7	0.15	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
cis-1,3-Dichloropropene	1,570,000	8,200	-	0.17	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
trans-1,3-Dichloropropene	1,570,000	8,200	-	0.17	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,4-Dioxane (p-Dioxane)	-	23,000	-	0.16	3,670 UJ	109 UJ	106 UJ	2,720 UJ	3,270 UJ	6,990 UJ	130 UJ	6,350 UJ	128 UJ	70,100 UJ	134 U	126 UJ	155 UJ
Chloroethane	2,120,000	5,700,000	-	590	245 U	7.3 U	7.1 U	181 U	218 U	466 U	8.7 U	424 U	8.5 U	4,680 U	8.9 U	8.4 U	10.3 U
Ethylbenzene	480,000	25,000	780	1.7	122 U	3.6 U	***2.5 J***	90.6 U	***44 J***	233 U	1.6 J	212 U	***2 J***	2,340 U	4.5 U	4.2 U	5.2 U
2-Hexanone	3,280,000	130,000	-	0.88	1,220 U	36.4 U	35.4 U	906 U	1,090 U	2,330 U	43.4 U	2,120 U	42.6 U	23,400 U	44.7 U	41.9 U	51.6 U
Methyl acetate	29,000,000	120,000,000	-	410	245 U	7.3 U	7.1 U	181 U	218 U	466 U	8.7 U	424 U	8.5 U	4,680 U	8.9 U	8.4 U	10.3 U
2-Butanone (MEK)	28,400,000	19,000,000	-	120	2,450 U	72.8 U	70.8 U	1,810 U	2,180 U	4,660 U	86.7 U	4,240 U	85.2 U	46,800 U	89.3 U	83.8 U	103 U
Methylcyclohexane	-	-	-	-	245 U	7.3 U	7.1 U	181 U	218 U	466 U	8.7 U	424 U	8.5 U	4,680 U	8.9 U	8.4 U	10.3 U
4-Methyl-2-pentanone (MIBK)	3,360,000	5,600,000	-	28	1,220 U	36.4 U	35.4 U	906 U	1,090 U	2,330 U	43.4 U	2,120 U	42.6 U	23,400 U	44.7 U	41.9 U	51.6 U
Methyl-tert-butyl ether	8,870,000	210,000	-	3.2	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Methylene Chloride	3,320,000	320,000	1.3	2.7	489 U	14.6 U	14.2 U	363 U	436 U	932 U	17.3 U	847 U	17 U	9,350 U	17.9 U	16.8 U	20.6 U
Styrene	867,000	3,500,000	110	130	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,1,2,2-Tetrachloroethane	1,900,000	2,700	-	0.03	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Tetrachloroethene	166,000	39,000	2.3	1.8	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Toluene	818,000	4,700,000	690	76	***27,000***	53.7	***957***	***26,200***	***67,200***	***37,900***	21.2	***62,800***	8.4	***1,620,000***	2.3 J	12.4	5.2 U
1,1,2-Trichlorotrifluoroethane	910,000	17,000,000	-	14,000	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,2,3-Trichlorobenzene	-	66,000	-	2.1	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,2,4-Trichlorobenzene	404,000	26,000	200	1.2	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,1,1-Trichloroethane	640,000	3,600,000	70	280	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
1,1,2-Trichloroethane	2,160,000	630	1.6	0.013	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Trichloroethene	692,000	1,900	1.8	0.1	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Trichlorofluoromethane	1,230,000	310,000	-	73	122 U	3.6 U	3.5 U	90.6 U	109 U	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
Vinyl chloride	3,920,000	1,700	0.69	0.0065	245 U	7.3 U	7.1 U	181 U	218 U	466 U	8.7 U	424 U	8.5 U	4,680 U	8.9 U	8.4 U	10.3 U
m&p-Xylene (e)	388,000	240,000	-	19	245 U	7.3 U	7.1 U	181 U	***84.5 J***	466 U	8.7 U	424 U	8.5 U	4,680 U	8.9 U	8.4 U	10.3 U
o-Xylene	434,000	280,000	-	19	122 U	3.6 U	3.5 U	***48.2 J***	***79.6 J***	233 U	4.3 U	212 U	4.3 U	2,340 U	4.5 U	4.2 U	5.2 U
General Chemistry																	
Percent Moisture	-	-	-	-	21.3	7.1	10.1	11.7	16.6	16	14.2	14.9	17.4	19.8	18.5	18.6	17.4
Total Organic Carbon (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Boxed values greater than C_{sat}
Red values greater than RSL_i
Shaded values greater than SSL_{MCL}
Bold italic values greater than HHRA screening level (f)

Table 5-1

Remedial Investigation Soil Sample Results
Wix Filtration Facility
Dillon, South Carolina (a)

	Screening Levels (c)													
Location:					**SB-13**	**SB-100 (b)**	**SB-14**	**SB-16**	**SB-16**	**SB-17**	**SB-101 (b)**	**SB-18**	**SB-19**	**MW-11D**
Depth (ft-bgs):					**3**	**3**	**2.5**	**6-7**	**14-15**	**2**	**2**	**2.5**	**3**	**26-28**
Sample Date:					**5/1/2014**	**5/1/2014**	**5/1/2014**	**5/2/2014**	**5/2/2014**	**5/2/2014**	**5/2/2014**	**5/2/2014**	**5/7/2014**	**5/7/2014**
	C_{sat}	RSL_I	SSL_{MCL}	SSL_{RISK}										
Volatile Organic Compounds (µg/kg)														
Acetone	114,000,000	67,000,000	-	290	14.4 J	13.1 J	24.6 J	-	-	10.3 J	9.2 J	90.5 U	31.1 U	-
Benzene	1,820,000	5,100	2.6	0.23	***1.7 J***	5.6 U	***4.2 J***	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Bromochloromethane	4,040,000	63,000	-	2.1	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Bromodichloromethane	931,000	1,300	22	0.036	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Bromoform	-	290,000	21	2.4	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Bromomethane	3,590,000	3,000	-	0.19	8.3 U	11.3 U	9.8 U	-	-	7.6 U	7.5 U	9 U	3.1 U	-
Carbon disulfide	738,000	350,000	-	24	8.3 U	11.3 U	9.8 U	-	-	7.6 U	7.5 U	9 U	3.1 U	-
Carbon tetrachloride	458,000	2,900	1.9	0.18	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Chlorobenzene	761,000	130,000	68	5.3	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Chloroform	2,540,000	1,400	22	0.061	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Chloromethane	1,320,000	46,000	-	4.9	8.3 U	11.3 U	9.8 U	-	-	7.6 U	7.5 U	9 U	3.1 U	-
Isopropylbenzene (Cumene)	268,000	990,000	-	74	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Cyclohexane	117,000	2,700,000	-	1,300	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,2-Dibromo-3-chloropropane	979,000	64	0.086	0.00014	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Dibromochloromethane	802,000	3,200	21	0.045	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,2-Dibromoethane (EDB)	1,340,000	160	0.014	0.0021	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,2-Dichlorobenzene	376,000	930,000	580	30	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,3-Dichlorobenzene	-	-	-	-	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,4-Dichlorobenzene	-	11,000	72	0.46	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Dichlorodifluoromethane	845,000	37,000	-	30	8.3 U	11.3 U	9.8 U	-	-	7.6 U	7.5 U	9 U	3.1 U	-
1,1-Dichloroethane	1,690,000	16,000	-	0.78	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,2-Dichloroethane	2,980,000	2,000	1.4	0.048	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,1-Dichloroethene	1,190,000	100,000	2.5	10	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
cis-1,2-Dichloroethene	2,370,000	230,000	21	1.1	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
trans-1,2-Dichloroethene	1,670,000	2,300,000	29	11	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,2-Dichloropropane	1,360,000	4,400	1.7	0.15	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
cis-1,3-Dichloropropene	1,570,000	8,200	-	0.17	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
trans-1,3-Dichloropropene	1,570,000	8,200	-	0.17	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,4-Dioxane (p-Dioxane)	-	23,000	-	0.16	125 UJ	169 UJ	147 UJ	-	-	114 UJ	113 UJ	136 UJ	46.7 U	-
Chloroethane	2,120,000	5,700,000	-	590	8.3 U	11.3 U	9.8 U	-	-	7.6 U	7.5 U	9 U	3.1 U	-
Ethylbenzene	480,000	25,000	780	1.7	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
2-Hexanone	3,280,000	130,000	-	0.88	41.5 U	56.3 U	49.1 U	-	-	38.1 U	37.6 U	45.2 U	15.6 U	-
Methyl acetate	29,000,000	120,000,000	-	410	8.3 U	11.3 U	9.8 U	-	-	7.6 U	7.5 U	9 U	3.1 U	-
2-Butanone (MEK)	28,400,000	19,000,000	-	120	83.1 U	113 U	98.2 U	-	-	76.2 U	75.1 U	90.5 U	31.1 U	-
Methylcyclohexane	-	-	-	-	8.3 U	11.3 U	9.8 U	-	-	7.6 U	7.5 U	9 U	3.1 U	-
4-Methyl-2-pentanone (MIBK)	3,360,000	5,600,000	-	28	41.5 U	56.3 U	49.1 U	-	-	38.1 U	37.6 U	45.2 U	15.6 U	-
Methyl-tert-butyl ether	8,870,000	210,000	-	3.2	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Methylene Chloride	3,320,000	320,000	1.3	2.7	16.6 U	22.5 U	19.6 U	-	-	15.2 U	15 U	18.1 U	6.2 U	-
Styrene	867,000	3,500,000	110	130	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,1,2,2-Tetrachloroethane	1,900,000	2,700	-	0.03	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Tetrachloroethene	166,000	39,000	2.3	1.8	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Toluene	818,000	4,700,000	690	76	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	61.9	-
1,1,2-Trichlorotrifluoroethane	910,000	17,000,000	-	14,000	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,2,3-Trichlorobenzene	-	66,000	-	2.1	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,2,4-Trichlorobenzene	404,000	26,000	200	1.2	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,1,1-Trichloroethane	640,000	3,600,000	70	280	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
1,1,2-Trichloroethane	2,160,000	630	1.6	0.013	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Trichloroethene	692,000	1,900	1.8	0.1	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Trichlorofluoromethane	1,230,000	310,000	-	73	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
Vinyl chloride	3,920,000	1,700	0.69	0.0065	8.3 U	11.3 U	9.8 U	-	-	7.6 U	7.5 U	9 U	3.1 U	-
m&p-Xylene (e)	388,000	240,000	-	19	8.3 U	11.3 U	9.8 U	-	-	7.6 U	7.5 U	9 U	3.1 U	-
o-Xylene	434,000	280,000	-	19	4.2 U	5.6 U	4.9 U	-	-	3.8 U	3.8 U	4.5 U	1.6 U	-
General Chemistry														
Percent Moisture	-	-	-	-	15.9	15.7	14.8	19.9	20.3	13.7	14.7	13.1	16.2	-
Total Organic Carbon (mg/kg)	-	-	-	-	-	-	-	1,090	2,070	-	-	-	-	8,110

a/ C_{sat} = generic soil saturation concentration; RSL_I = Regional Screening Level for industrial exposure; SSL_{RISK} = risk-based protection of groundwater Soil Screening Level; SSL_{MCL} = Maximum Contaminant Level (MCL)-based Soil Screening Level; µg/kg = micrograms per kilogram; mg/kg = milligrams per kilogram; "-" = not promulgated or not analyzed; HHRA = human health risk assessment.
b/ Duplicate of previous sample.
c/ U.S. Environmental Protection Agency (EPA) RSL Summary Table. May 2014.
d/ The lower screening level for m-xylenes or p-xylenes is used.
e/ Data Qualifiers:
U = compound not detected; J = estimated concentration above the method detection limit and below the reporting limit
f/ The HHRA screening level is the minimum of the RSL_I or SSL_{RISK}.

Boxed values greater than C_{sat}
Red values greater than RSL_I
Shaded values greater than SSL_{MCL}
Bold italic values greater than HHRA screening level (f)

Table 5-2

Remedial Investigation Groundwater Sample Results
Wix Filtration Facility
Dillon, South Carolina (a)

		Location:	MW-1		MW-2	MW-3	MW-4R	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11-36	
		Screened Interval (ft-bgs):	6.9-16.9		7.1-17.1	6.5-16.5	2-12	5.6-15.2	6.4-16	7.7-17.4	10.3-19.9	5.2-15.2	5-15	5-15	25-35	
		Sample Date:	5/27/2014	5/27/2014 (b)	5/29/2014	5/30/2014	5/29/2014	5/29/2014	5/29/2014	5/29/2014	5/29/2014	5/28/2014	5/28/2014	5/28/2014	5/28/2014	5/28/2014 (b)
	Screening Levels (c)															
	MCL	RSL_{TW}														
Volatile Organic Compounds (µg/l)																
Acetone	-	1,400	25 U (g)	25 U	40.7 J	48.1	12,500 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	10.7 J
Benzene	5	0.45	1 U	1 U	***38.6***	***23.4***	500 U	1 U	1 U	1 U	1 U	1 U	1 U	***10***	1 U	1 U
Bromochloromethane	-	8.3	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	-	0.13	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	-	9.2	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	-	0.75	5 U	5 U	20 U	5 U	2,500 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 U
Carbon disulfide	-	81	2 U	2 U	8 U	2 U	1,000 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon tetrachloride	5	0.45	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	100	7.8	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	-	0.22	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	-	19	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene (Cumene)	-	45	1 U	1 U	4 U	8.6	500 U	1 U	1 U	1 U	1 U	1 U	1 U	0.52 J	1 U	1 U
Cyclohexane	-	1,300	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	0.2	0.00033	3 U	3 U	12 U	3 U	1,500 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Dibromochloromethane	-	0.17	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane (EDB)	0.05	0.0075	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	600	30	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	-	-	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	75	0.48	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	-	20	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	-	2.7	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	5	0.17	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7	28	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	70	3.6	1 U	1 U	1.4 J	1.8	500 U	1 U	1 U	1 U	1 U	0.97 J	1 U	1 U	***10.5***	***10.7***
trans-1,2-Dichloroethene	100	36	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	5	0.44	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	-	0.47	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	-	0.47	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane (p-Dioxane)	-	0.78	150 U	150 U	600 U	150 U	75,000 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U
Chloroethane	-	2,100	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	700	1.5	1 U	1 U	***9.3***	***17.6***	500 U	1 U	1 U	1 U	1 U	1 U	1 U	***8***	1 U	1 U
2-Hexanone	-	3.8	5 U	5 U	20 U	1.3 J	2,500 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl acetate	-	2,000	10 U	10 U	40 U	10 U	5,000 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylcyclohexane	-	-	10 U	10 U	40 U	10 U	5,000 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone (MEK)	-	560	5 U	5 U	20 U	8.4	2,500 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	-	120	5 U	5 U	20 U	5 U	2,500 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl-tert-butyl ether	-	14	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	5	11	2 U	2 U	10.5	2 U	1,000 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	100	120	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	-	0.076	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	5	4.1	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	110	1 U	1 U	***64,200***	***77,700***	***405,000***	3.1	0.89 J	4.7	0.87 J	1.8	0.47 J	***22,700***	1 U	1 U
1,1,2-Trichlorotrifluoroethane	-	5,500	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	-	0.7	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	70	0.4	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	800	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	5	0.041	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	0.28	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	***0.59 J***	1 U	1 U	1 U	1 U
Trichlorofluoromethane	-	110	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	2	0.019	1 U	1 U	4 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	-	19	1 U	1 U	2.2 J	***32.1***	500 U	1 U	1 U	1 U	1 U	1 U	1 U	2	1 U	1 U
m&p-Xylene (e)	-	19	2 U	2 U	9.3	***31.8***	1,000 U	2 U	2 U	2 U	2 U	2 U	2 U	10.4	2 U	2 U
Xylenes (Total) (f)	10,000	19	2 U	2 U	11.5 J	***63.9***	1,000 U	2 U	2 U	2 U	2 U	2 U	2 U	12.4	2 U	2 U
Field Parameters																
Conductivity (mS/cm)	-	-	0.204	-	0.217	0.248	0.116	0.093	0.048	0.09	0.066	0.222	0.077	0.134	0.377	-
Dissolved Oxygen (mg/l)	-	-	1.37	-	1.14	2.14	6.97	0.47	0.38	0.35	0.47	1.22	0.59	0.39	0.38	-
Oxidation-Reduction Potential (mV)	-	-	-52	-	63	-13	202	245	289	281	90	-39	106	49	-27	-
pH (SU)	-	-	6.8	-	5.63	5.62	4.96	4.28	4.54	4.17	5.04	6.76	5.25	5.37	7.03	-
Temperature (ºC)	-	-	23.7	-	30.73	18.67	20	20.43	20.92	17.4	17.44	25.05	18.78	19.56	18.64	-
Turbidity (NTU)	-	-	45.9	-	2.4	0	0	1.2	5.3	91.9	38.1	82	23.9	47.4	17.9	-

Shaded values greater than MCL
Bold italics greater than HHRA screening level (RSL_{TW})

Table 5-2

Remedial Investigation Groundwater Sample Results
Wix Filtration Facility
Dillon, South Carolina (a)

	Screening Levels (c)						
Location:			**MW-12**	**MW-12-38**	**MW-13**	**MW-14**	**MW-15**
Screened Interval (ft-bgs):			**3-13**	**28-38**	**3-13**	**10-20**	**5-15**
Sample Date:			**5/29/2014**	**5/27/2014**	**5/29/2014**	**5/28/2014**	**5/28/2014**
	MCL	**RSL_{TW}**					
Volatile Organic Compounds (µg/l)							
Acetone	-	1,400	25 U	25 U	***9,150 J***	25 U	25 U
Benzene	5	0.45	***3.3***	1 U	500 U	0.44 J	1 U
Bromochloromethane	-	8.3	1 U	1 U	500 U	1 U	1 U
Bromodichloromethane	-	0.13	1 U	1 U	500 U	1 U	1 U
Bromoform	-	9.2	1 U	1 U	500 U	1 U	1 U
Bromomethane	-	0.75	5 U	5 U	2,500 U	5 U	5 U
Carbon disulfide	-	81	2 U	2 U	1,000 U	2 U	2 U
Carbon tetrachloride	5	0.45	1 U	1 U	500 U	1 U	1 U
Chlorobenzene	100	7.8	1 U	1 U	500 U	1 U	1 U
Chloroform	-	0.22	1 U	1 U	500 U	1 U	1 U
Chloromethane	-	19	1 U	1 U	500 U	1 U	1 U
Isopropylbenzene (Cumene)	-	45	1 U	1 U	500 U	1 U	1 U
Cyclohexane	-	1,300	1 U	1 U	500 U	1 U	1 U
1,2-Dibromo-3-chloropropane	0.2	0.00033	3 U	3 U	1,500 U	3 U	3 U
Dibromochloromethane	-	0.17	1 U	1 U	500 U	1 U	1 U
1,2-Dibromoethane (EDB)	0.05	0.0075	1 U	1 U	500 U	1 U	1 U
1,2-Dichlorobenzene	600	30	1 U	1 U	500 U	1 U	1 U
1,3-Dichlorobenzene	-	-	1 U	1 U	500 U	1 U	1 U
1,4-Dichlorobenzene	75	0.48	1 U	1 U	500 U	1 U	1 U
Dichlorodifluoromethane	-	20	1 U	1 U	500 U	1 U	1 U
1,1-Dichloroethane	-	2.7	1 U	1 U	500 U	1 U	1 U
1,2-Dichloroethane	5	0.17	1 U	1 U	500 U	1 U	1 U
1,1-Dichloroethene	7	28	1 U	1 U	500 U	4.9	1 U
cis-1,2-Dichloroethene	70	3.6	***18.9***	1 U	500 U	***1,930***	1 U
trans-1,2-Dichloroethene	100	36	1 U	1 U	500 U	0.89 J	1 U
1,2-Dichloropropane	5	0.44	1 U	1 U	500 U	1 U	1 U
cis-1,3-Dichloropropene	-	0.47	1 U	1 U	500 U	1 U	1 U
trans-1,3-Dichloropropene	-	0.47	1 U	1 U	500 U	1 U	1 U
1,4-Dioxane (p-Dioxane)	-	0.78	150 U	150 U	75,000 U	150 U	150 U
Chloroethane	-	2,100	1 U	1 U	500 U	1 U	1 U
Ethylbenzene	700	1.5	***78.2***	1 U	500 U	1 U	1 U
2-Hexanone	-	3.8	5 U	5 U	2,500 U	5 U	5 U
Methyl acetate	-	2,000	10 U	10 U	5,000 U	10 U	10 U
Methylcyclohexane	-	-	10 U	10 U	5,000 U	10 U	10 U
2-Butanone (MEK)	-	560	5 U	5 U	2,500 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	-	120	5 U	5 U	2,500 U	5 U	5 U
Methyl-tert-butyl ether	-	14	1 U	1 U	500 U	1 U	1 U
Methylene Chloride	5	11	2 U	2 U	1,000 U	2 U	2 U
Styrene	100	120	1 U	1 U	500 U	1 U	1 U
1,1,2,2-Tetrachloroethane	-	0.076	1 U	1 U	500 U	1 U	1 U
Tetrachloroethene	5	4.1	0.92 J	1 U	500 U	1.1	1 U
Toluene	1,000	110	***107,000***	1 U	***461,000***	1.4	3.5
1,1,2-Trichlorotrifluoroethane	-	5,500	1 U	1 U	500 U	1 U	1 U
1,2,3-Trichlorobenzene	-	0.7	1 U	1 U	500 U	1 U	1 U
1,2,4-Trichlorobenzene	70	0.4	1 U	1 U	500 U	1 U	1 U
1,1,1-Trichloroethane	200	800	1 U	1 U	500 U	1 U	1 U
1,1,2-Trichloroethane	5	0.041	1 U	1 U	500 U	1 U	1 U
Trichloroethene	5	0.28	***0.69 J***	1 U	500 U	1 U	1 U
Trichlorofluoromethane	-	110	1 U	1 U	500 U	1 U	1 U
Vinyl chloride	2	0.019	1 U	1 U	500 U	***1.8***	1 U
o-Xylene	-	19	6.5	1 U	500 U	1 U	1 U
m&p-Xylene (e)	-	19	***77.4***	2 U	1,000 U	2 U	2 U
Xylenes (Total) (f)	10,000	19	***83.9***	2 U	1,000 U	2 U	2 U
Field Parameters							
Conductivity (mS/cm)	-	-	0.71	0.127	0.449	0.134	0.08
Dissolved Oxygen (mg/l)	-	-	0.44	2.04	0.58	0.47	0.64
Oxidation-Reduction Potential (mV)	-	-	-129	75	133	276	19
pH (SU)	-	-	7.13	5.69	5.38	4.36	5.87
Temperature (ºC)	-	-	29.54	136	20.95	22.05	18.54
Turbidity (NTU)	-	-	53.1	78.5	0	33	27.5

Shaded values greater than MCL
Bold italics greater than HHRA screening level (RSL_{TW})

a/ ft-bgs = feet below ground surface; MCL = Maximum Contaninant Level; RSL_{TW} = Regional Screening Level for Tapwater;
µg/l = micrograms per liter; mS/cm = milliSiemens per centimeter; mg/l = milligrams per liter; mV = millivolts; SU = standard units;
ºC = degrees Celcius; NTU = nephlometric turbidity units; HHRA = human health risk assessment.
b/ Duplicate of previous sample.
c/ U.S. Environmental Protection Agency (EPA) RSL Summary Table. May 2014.
d/ The lower screening level for m-xylenes or p-xylenes is used.
e/ Summation of x-xylenes and m&p-xylenes.
f/ Data Qualifiers:
U = compound not detected
J = estimated concentration above the method detection limit and below the reporting limit

Table 5-3

Remedial Investigation Sub-Slab Vapor Sample Results
Wix Filtration Facility
Dillon, South Carolina (a)

	Location:	SSV-1	SSV-2	SSV-3	SSV-4 (b)
	Sample Date:	4/30/2014	4/30/2014	4/30/2014	4/30/2014
	HHRA Screening Level (c)				
Volatile Organic Compounds (µg/m^3)					
Acetone	14,000	4,500	86	46	31
Benzene	1.6	***7.8***	1.2	***2.4***	***2.8***
Benzyl Chloride	0.25	4.1 U (e)	1 U	1 U	1 U
Bromodichloromethane	0.33	5.3 U	1.3 U	1.3 U	1.3 U
Bromoform	11	8.2 U	2.1 U	2.1 U	2.1 U
Bromomethane	2.2	3.1 U	0.78 U	0.78 U	0.9
Carbon Disulfide	310	110	46	220	44
Carbon Tetrachloride	2	5 U	1.3 U	1.3 U	1.3 U
Chlorobenzene	22	6.2	1.1	0.92 U	0.96
Chloroform	0.53	3.9 U	0.98 U	0.98 U	0.98 U
Chloromethane	39	3.3 U	0.83 U	0.83 U	0.83 U
Dibromochloromethane	0.45	6.8 U	1.7 U	1.7 U	1.7 U
1,2-Dibromoethane	0.02	6.1 U	1.5 U	1.5 U	1.5 U
1,2-Dichlorobenzene	88	4.8 U	1.2 U	1.2 U	1.2 U
1,3-Dichlorobenzene	-	4.8 U	1.2 U	1.2 U	1.2 U
1,4-Dichlorobenzene	1.1	4.8 U	1.2 U	1.2 U	1.2 U
Dichlorodifluoromethane (12)	44	3.9 U	3.1	2.4	1.9
1,1-Dichloroethane	7.7	***8.3***	0.81 U	0.81 U	0.81 U
1,2-Dichloroethane	0.47	3.2 U	0.81 U	0.81 U	0.81 U
1,1-Dichloroethene	88	3.2 U	0.79 U	0.79 U	0.79 U
cis-1,2-Dichloroethene	-	3.2 U	0.79 U	0.79 U	0.79 U
trans-1,2-Dichloroethene	-	3.2 U	0.79 U	0.79 U	0.79 U
1,2-Dichloropropane	1.2	3.7 U	0.92 U	0.92 U	0.92 U
cis-1,3-Dichloropropene	3.1	3.6 U	0.91 U	0.91 U	0.91 U
trans-1,3-Dichloropropene	3.1	3.6 U	0.91 U	0.91 U	0.91 U
Chloroethane	4,400	2.1 U	0.53 U	0.53 U	0.53 U
Ethylbenzene	4.9	***7***	0.87 U	0.87 U	0.87 U
4-Ethyl Toluene	-	7.5	0.98 U	1.6	1.4
Hexachlorobutadiene	0.56	8.5 U	2.1 U	2.1 U	2.1 U
2-Hexanone	13	***100***	2.5	1.9	2.3
2-Butanone	2,200	420	13	14	21
4-Methyl-2-Pentanone	1,300	130	1.9	1.8	7.3
t-Butyl Methyl Ether (MTBE)	47	2.9 U	0.72 U	0.72 U	0.72 U
Methylene Chloride	260	2.8 U	0.69 U	0.69 U	0.69 U
Styrene	440	3.5	0.85 U	0.85 U	0.85 U
1,1,2,2-Tetrachloroethane	0.21	11 U	2.7 U	2.7 U	2.7 U
Tetrachloroethene	18	***1,300***	***1,600***	6.6	7.2
Toluene	2,200	40	3.2	3.5	2.4
1,1,2-Cl 1,2,2-F ethane (113)	13,000	6.1 U	1.5 U	1.5 U	1.5 U
1,2,4-Trichlorobenzene	0.88	12 U	3 U	3 U	3 U
1,1,1-Trichloroethane	2,200	27	1.1 U	1.1 U	1.1 U
1,1,2-Trichloroethane	0.088	4.4 U	1.1 U	1.1 U	1.1 U
Trichloroethene	0.88	***64***	***15***	***3***	***4.2***
Trichlorofluoromethane (11)	310	4.5 U	1.1 U	1.1	1.1 U
1,2,4-Trimethylbenzene	3.1	7.8 UJ	2 UJ	2 UJ	2 UJ
1,3,5-Trimethylbenzene	-	7.8 U	2 U	2 U	2 U
Vinyl Acetate	88	14 U	3.5 U	3.5 U	3.5 U
Vinyl Chloride	2.8	2 U	0.51 U	0.51 U	0.51 U
1,2-Cl-1,1,2,2-F ethane (114)	-	5.6 U	1.4 U	1.4 U	1.4 U
m&p-Xylene (d)	44	28	2.1	2.4	2
o-Xylene	44	10	0.95	1.5	1.1
Field Parameters					
Purge Volume (L)	-	1	0.7	2	-
Organic Vapors (ppm)	-	6.4	2.1	1.3	-
Oxygen (ppm)	-	20.9	17.8	20.9	-
Carbon monoxide (ppm)	-	350	186	160	-

a/ HHRA = human health risk assessment; µg/m3 = micrograms per cubic meter; L = liters; ppm = parts per million; "-" = not promulgated or not analyzed.
b/ Duplicate of previous sample.
c/ U.S. Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table.Industrial exposure to indoor or outdoor air. May 2014.
d/ The lower screening level for m-xylenes or p-xylenes is used.
e/ Data Qualifiers:
U = compound not detected
J = estimated concentration above the method detection limit and below the reporting limit

Bold italics values greater than HHRA screening level

Table 7-1

Chemicals of Potential Concern in Soil
Wix Filtration Facility
Dillon, South Carolina (a)

Chemical (μg/kg)	CASRN	Number of Samples (b)	Number of Detects	Detection Frequency (%)	Minimum of Detected Concentrations	Maximum of Detected Concentrations	Location of Maximum Concentration	Range of Detection Limits	Screening Criteria (c)
Acetone	67-64-1	18	8	44	10.3	1,150	SB-7 (2 ft-bgs)	31.1 - 46,800	290
Benzene	71-43-2	18	5	28	1.2	7.3	SB-6 (2 ft-bgs)	1.6 - 2,340	0.23
cis-1,2-Dichloroethene	156-59-2	18	4	22	1.3	464	SB-7 (2 ft-bgs)	1.6 - 2,340	1.1
Ethylbenzene	100-41-4	18	4	22	1.6	44	SB-4 (2 ft-bgs)	1.6 - 2,340	1.7
Toluene	108-88-3	18	13	72	2.3	1,620,000	SB-9 (2.5 ft-bgs)	3.8 - 5.2	76
m&p-Xylenes	108-38-3; 106-42-3	18	1	6	84.5	84.5	SB-4 (2 ft-bgs)	3.1 - 4,680	19
o-Xylene	95-47-6	18	2	11	48.2	79.6	SB-4 (2 ft-bgs)	1.6 - 2,340	19

a/ μg/kg = micrograms per kilogram; CASRN = Chemical Abstracts Service Registry Number; ft-bgs = feet below ground surface.
b/ Duplicate samples were not included in the total number of samples because the duplicate samples were used as a measure of data precision.
c/ The screening criteria are the lower of the U.S. Environmental Protection Agency (2014b) industrial soil regional screening level (RSL) and the protection of groundwater risk-based soil screening level (SSL). Both the industrial soil RSL and risk-based SSL are based on a cancer risk of 1 x 10-6 and a hazard quotient of 0.1.

Table 7-2

Chemicals of Potential Concern in Groundwater
Wix Filtration Facility
Dillon, South Carolina (a)

Chemical (µg/l)	CASRN	Number of Samples (b)	Number of Detects	Detection Frequency (%)	Minimum of Detected Concentrations	Maximum of Detected Concentrations	Location of Maximum Concentration	Range of Detection Limits	Screening Criteria (c)
Acetone	67-64-1	17	3	18	40.7	9,150	MW-13	25 - 12,500	1,400
Benzene	71-43-2	17	5	29	0.44	38.6	MW-2	1 - 500	0.45
cis-1,2-Dichloroethene	156-59-2	17	6	35	0.97	1,930	MW-14	1 - 500	1.1
Ethylbenzene	100-41-4	17	4	24	8	78.2	MW-12	1 - 500	1.5
Toluene	108-88-3	17	14	82	0.47	461,000	MW-13	1	110
Trichloroethene	79-01-6	17	2	12	0.59	0.69	MW-12	1 - 500	0.28
Vinyl chloride	75-01-4	17	1	6	2	2	MW-11	1 - 500	0.019
m&p-Xylenes	108-38-3; 106-42-3	17	4	24	9.3	77.4	MW-12	2 - 1,000	19
o-Xylene	95-47-6	17	4	24	2	32.1	MW-3	1 - 500	19

a/ µg/l = micrograms per liter; CASRN = Chemical Abstracts Service Registry Number.

b/ Duplicate samples were not included in the total number of samples because the duplicate samples were used as a measure of data precision.

c/ The screening criteria are the U.S. Environmental Protection Agency (2014b) tap water Regional Screening Level, assuming a cancer risk of 1 x 10-6 and a hazard quotient of 0.1.

Table 7-3

Chemicals of Potential Concern in Sub-Slab Vapor
Wix Filtration Facility
Dillon, South Carolina (a)

Constituent ($\mu g/m^3$) (b)	CASRN	Number of Samples (b)	Number of Detects	Detection Frequency (%)	Minimum of Detected Concentrations	Maximum of Detected Concentrations	Location of Maximum Concentration	Range of Detection Limits	Screening Criteria (c)
Benzene	71-43-2	3	3	100	1.2	7.8	SSV-1	0.64 - 2.5	1.6
Ethylbenzene	100-41-4	3	1	33	7	7	SSV-1	0.87 - 3.5	4.9
4-Ethyl toluene	622-96-8	3	2	67	1.6	7.5	SSV-1	0.98 - 3.9	NA
2-Hexanone	591-78-6	3	3	100	1.9	100	SSV-1	0.82 - 3.3	13
Tetrachloroethene	127-18-4	3	3	100	6.6	1,600	SSV-2	1.4 - 5.4	18
Trichloroethene	79-01-6	3	3	100	3	64	SSV-1	1.1 - 4.3	0.88

a/ $\mu g/m^3$ = micrograms per cubic meter; CASRN = Chemical Abstracts Service Registry Number; NA = not available.
b/ Duplicate samples were not included in the total number of samples because the duplicate samples were used as a measure of data precision.
c/ The screening criteria are the U.S. Environmental Protection Agency's (2014b) industrial air RSLs, assuming a cancer risk of 1 x 10-6 and a hazard quotient of 0.1.

Table 7-4

Toxicity Values for Chemicals Exhibiting Non-carcinogenic Effects
Wix Filtration Facility
Dillon, South Carolina (a)

Constituent	CASRN	Oral Chronic Reference Dose (mg/kg-day)	Toxicity Source (b)	Oral Chronic Reference Concentration Critical Effect	Oral Chronic Reference Dose Target Organ	Oral Chronic Reference Dose Modifying Factor	Oral Chronic Reference Dose Uncertainty Factor	GIABS (unitless) (c)	Dermal Chronic Reference Dose (mg/kg-day)	Chronic Inhalation Reference Concentration (mg/m^3)	Toxicity Source (b)	Inhalation Chronic Reference Concentration Critical Effect	Inhalation Chronic Reference Concentration Target Organ	Inhalation Chronic Reference Concentration Modifying Factor	Inhalation Chronic Reference Concentration Uncertainty Factor
Acetone	67-64-1	9.00E-01	IRIS	Neuropathy	Neurological	1	1000	1	9.00E-01	3.09E+01	ATSDR	Increased visual evoked response	Neurological	NA	100
Benzene	71-43-2	4.00E-03	IRIS	Decreased lymphocyte count	Blood	1	300	1	4.00E-03	3.00E-02	IRIS	Decreased lymphocyte count	Blood	1	300
cis-1,2-Dichloroethene	156-59-2	2.00E-03	IRIS	Increased relative kidney weight in male rats	Kidney	1	3000	1	2.00E-03	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	1.00E-01	IRIS	Liver and kidney toxicity	Liver and kidney	1	1000	1	1.00E-01	1.00E+00	IRIS	Developmental toxicity	Developmental	1	300
4-Ethyl toluene (d)	622-96-8	1.00E-01	IRIS	Increased average kidney weights in female rats	Kidney	1	1000	1	1.00E-01	4.00E-01	IRIS	Increased average kidney weights in female rats and adrenal weights in male and female rats	Kidney	1	1000
2-Hexanone	591-78-6	5.00E-03	IRIS	Axonal swelling of the peripheral nerve	Nervous system	1	1000	1	5.00E-03	3.00E-02	IRIS	Motor conduction velocity of the sciatic-tibial nerve	Nervous system	1	3000
Tetrachloroethene	127-18-4	6.00E-03	IRIS	Neurotoxicity (color vision; reaction time, cognitive effects)	Nervous system	1	1000	1	6.00E-03	4.00E-02	IRIS	Neurotoxicity (color vision; reaction time, cognitive effects)	Nervous system	1	1000
Toluene	108-88-3	8.00E-02	IRIS	Increased kidney weight	Kidney	1	3000	1	8.00E-02	5.00E+00	IRIS	Neurological effects in occupationally-exposed workers	Neurological	1	10
Trichloroethene	79-01-6	5.00E-04	IRIS	Multiple	Multiple	1	Multiple	1	5.00E-04	2.00E-03	IRIS	Multiple	Multiple	1	Multiple
Vinyl chloride	75-01-4	3.00E-03	IRIS	Liver cell polymorphism	Liver	1	30	1	3.00E-03	1.00E-01	IRIS	Liver cell polymorphism	Liver	1	30
m&p-Xylenes (e)	108-38-3; 106-42-3	2.00E-01	IRIS	Decreased body weight, increased mortality	Body weight	NA	1000	1	2.00E-01	1.00E-01	IRIS	Impaired motor coordination (decreased rotarod performance)	NA	NA	300
o-Xylene (e)	95-47-6	2.00E-01	IRIS	Decreased body weight, increased mortality	Body weight	NA	1000	1	2.00E-01	1.00E-01	IRIS	Impaired motor coordination (decreased rotarod performance)	NA	NA	300

a/ CASRN = Chemical Abstracts Service Registry Number; mg/kg-day = milligrams per kilogram per day; GIABS = fraction of contaminant absorbed in gastrointestinal tract; mg/m^3 = milligrams per cubic meter; NA = not applicable or not available.
b/ IRIS = U.S. Environmental Protection Agency's (EPA's) Integrated Risk Information System (EPA 2014c); ATSDR = Agency for Toxic Substances and Disease Registry Minimal Risk Levels (ATSDR 2013).
c/ Value from EPA's Risk Assessment Guidance for Superfund, Part E, Supplemental Guidance for Dermal Risk Assessment (EPA 2004).
d/ No toxicity value available. The toxicity value for isopropylbenzene is assumed as a surrogate for 4-ethyl toluene.
e/ Toxicity information is for xylenes (CASRN 1330-20-7).

Table 7-5

Toxicity Values for Chemicals Exhibiting Carcinogenic Effects
Wix Filtration Facility
Dillon, South Carolina (a)

Chemical	CASRN	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$	Toxicity Source (b)	EPA Cancer Classification	Oral Slope Factor Tumor Type	Oral Slope Factor Target Organ	GIABS (unitless) (c)	Dermal Slope Factor $(mg/kg\text{-}day)^{-1}$	Inhalation Unit Risk $(\mu g/m3)^{-1}$	Toxicity Source (b)	EPA Cancer Classification	Inhalation Unit Risk Tumor Type	Inhalation Unit Risk Target Organ
Acetone	67-64-1	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	5.50E-02	IRIS	Known/likely human carcinogen	Leukemia	Blood	1	5.50E-02	7.80E-06	IRIS	Known/likely human carcinogen	Leukemia	Blood
cis-1,2-Dichloroethene	156-59-2	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	NA
Ethylbenzene	100-41-4	1.10E-02	Cal/EPA	NA	NA	NA	1	1.10E-02	2.50E-06	Cal/EPA	NA	NA	NA
4-Ethyl toluene (d)	622-96-8	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	NA
Tetrachloroethene	127-18-4	2.10E-03	IRIS	Likely to be carcinogenic in humans	Hepatocellular adenomas or carcinomas	Liver	1	2.10E-03	2.60E-07	IRIS	Likely to be carcinogenic in humans	Hepatocellular adenomas or carcinomas	Liver
Toluene	108-88-3	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	4.60E-02	IRIS	Carcinogenic to humans	Derived from Inhalation Unit Risk	Derived from Inhalation Unit Risk	1	4.60E-02	4.10E-06	IRIS	Carcinogenic to humans	Multiple	Multiple
Vinyl chloride	75-01-4	7.20E-01	IRIS	Known/likely human carcinogen	Total of liver angiosarcomas, hepatocellular, carcinoma, and neoplastic nodules	Liver	1	7.20E-01	4.40E-06	IRIS	Known/likely human carcinogen	Liver angiosarcomas, angiomas, hepatomas, and neoplastic nodules	Liver
m&p-Xylenes	108-38-3; 106-42-3	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	NA

a/ CASRN = Chemical Abstracts Service Registry Number; mg/kg-day = milligrams per kilogram per day; EPA = U.S. Environmental Protection Agency; $\mu g/m^3$ = micrograms per cubic meter; NA = not applicable or not available.
b/ IRIS = EPA's Integrated Risk Information System (EPA 2014c); Cal/EPA = California Environmental Protection Agency's Office of Environmental Health Hazard Assessment's (OEHHA) Toxicity Criteria Database (Cal/EPA OEHHA 2014).
c/ Value from EPA's Risk Assessment Guidance for Superfund, Part E, Supplemental Guidance for Dermal Risk Assessment (EPA 2004).
d/ No toxicity value available. The toxicity value for isopropylbenzene is assumed as a surrogate for 4-ethyl toluene.

Table 7-6

Exposure Point Concentrations for
Chemicals of Potential Concern in Soil and Groundwater
Wix Filtration Facility
Dillon, South Carolina (a)

Chemical	CASRN	Maximum of Detected Concentration	Exposure Point Concentration	Statistic Used (b)
Subsurface Soil (µg/kg) (c)				
Acetone	67-64-1	1,150	663	97.5% KM (Chebyshev) UCL
Benzene	71-43-2	7.3	3.977	95% KM (Percentile Bootstrap) UCL
cis-1,2-Dichloroethene	156-59-2	464	89.94	95% KM (t) UCL
Ethylbenzene	100-41-4	44	11.42	95% KM (t) UCL
Toluene	108-88-3	1,620,000	1,134,659	95% Adjusted Gamma KM-UCL
m&p-Xylene	108-38-3; 106-42-3	84.5	84.5	Maximum assumed; too few detected values for valid statistics
o-Xylene	95-47-6	79.6	79.6	Maximum assumed; too few detected values for valid statistics
Shallow Groundwater (µg/l) (d)				
Acetone	67-64-1	9,150	2,034	95% KM (t) UCL
Benzene	71-43-2	38.6	12.28	95% KM (t) UCL
cis-1,2-Dichloroethene	156-59-2	1,930	906.6	95% GROS Adjusted Gamma UCL
Ethylbenzene	100-41-4	78.2	20.93	95% KM (t) UCL
Toluene	108-88-3	461,000	460,582	99% KM (Chebyshev) UCL
Trichloroethene	79-01-6	0.69	0.69	Maximum assumed; too few detected values for valid statistics
Vinyl chloride	75-01-4	2	2	Maximum assumed; too few detected values for valid statistics
m&p-Xylenes	108-38-3; 106-42-3	77.4	22.98	95% KM (t) UCL
o-Xylene	95-47-6	32.1	8.636	95% KM (t) UCL

a/ CASRN = Chemical Abstracts Service Registry Number; µg/kg = micrograms per kilogram; µg/l = micrograms per liter.
b/ Calculated using U.S. Environmental Protection Agency's Statistical Software ProUCL 5.0.00 for Environmental Applications for Data Sets with and without Nondetect Observations, dated September 2013:
UCL = upper confidence limit;
KM (Chebyshev) UCL = UCL based on Kaplan-Meier estimates using the Chebyshev inequality;
KM (Percentile Bootstrap) UCL = UCL based on Kaplan-Meier estimates using the percentile bootstrap method;
KM (t) UCL = UCL based on Kaplan-Meier estimates using the Student's t-distribution cutoff value;
Adjusted Gamma KM-UCL = UCL based on Kaplan-Meier estimates assuming approximate gamma distribution;
GROS Adjusted Gamma UCL = UCL based on gamma regression on order statistics.
c/ Subsurface soil = soil encountered at 1 foot or deeper below ground surface.
d/ Shallow groundwater = groundwater encountered at less than 15 feet below ground surface.

Table 7-7

Exposure Point Concentrations for
Chemicals of Potential Concern in Indoor Air from Sub-Slab Vapor
Wix Filtration Facility
Dillon, South Carolina (a)

Chemical ($\mu g/m^3$)	CASRN	Maximum Concentration in Sub-Slab Vapor	Exposure Point Concentration in Indoor Air (b)
Benzene	71-43-2	7.8	0.78
Ethylbenzene	100-41-4	7	0.7
4-Ethyl toluene	622-96-8	7.5	0.75
2-Hexanone	591-78-6	100	10
Tetrachloroethene	127-18-4	1,600	160
Trichloroethene	79-01-6	64	6.4

a/ CASRN = Chemical Abstracts Service Registry Number; $\mu g/m^3$ = micrograms per cubic meter.
b/ Calculated using the U.S. Environmental Protection Agency's Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator, Version 3.3.1., May 2014 RSLs (EPA 2014d).

Table 7-8

Exposure Point Concentrations for
Chemicals of Potential Concern in Trench Air from Groundwater
Wix Filtration Facility
Dillon, South Carolina (a)

Chemical	CASRN	Exposure Point Concentration in Groundwater (µg/l)	Exposure Point Concentration in Trench Air ($\mu g/m^3$) (b)
Acetone	67-64-1	2,034	8,374
Benzene	71-43-2	12.28	115
cis-1,2-Dichloroethene	156-59-2	906.6	7,580
Ethylbenzene	100-41-4	20.93	168
Toluene	108-88-3	460,582	3,971,594
Trichloroethene	79-01-6	0.69	5
Vinyl chloride	75-01-4	2	21
m&p-Xylenes	108-38-3; 106-42-3	22.98	184 (c)
o-Xylene	95-47-6	8.636	69 (c)

a/ CASRN = Chemical Abstracts Service Registry Number; µg/l = micrograms per liter; µg/m3 = micrograms per cubic meter.

b/ Calculated using the model for exposure of workers to volatile constituents in a construction or utility trench developed by the Virginia Department of Environmental Quality (VADEQ) for the Virginia Voluntary Remediation Program risk assessment guidance (VADEQ 2014).

c/ Exposure point concentration calculated based on chemical and physical parameters for total xylenes.

Table 7-9

Summary of Risk Estimates for Potential Human Receptors
Wix Filtration Facility
Dillon, South Carolina (a)

Receptor	Exposure Medium	Exposure Route	Excess Lifetime Cancer Risk (a)	Non-Cancer Hazard Index (b)
Onsite Facility Worker	Indoor Air	Inhalation	6.17E-06	1.73E+00
		Exposure Pathway Total	***6.17E-06***	***1.73E+00***
		Risk/Hazard Index Total	**6.2E-06**	**1.7E+00**
Current and Future Onsite Construction and Utility Worker	Subsurface Soil	Ingestion	3.47E-12	1.01E-02
		Dermal Contact (c)	-	-
		Inhalation (Volatiles)	1.07E-11	2.89E-03
		Inhalation (Particulates)	8.19E-19	2.20E-10
		Exposure Pathway Total	***1.42E-11***	**1.30E-02**
	Shallow Groundwater	Ingestion	2.91E-09	5.32E-01
		Dermal Contact	3.15E-08	1.19E+01
		Exposure Pathway Total	***3.44E-08***	***1.24E+01***
	Trench Air	Inhalation	1.17E-06	4.59E+01
		Exposure Pathway Total	***1.17E-06***	***4.59E+01***
		Risk/Hazard Index Total	**1.2E-06**	**5.8E+01**

a/ Excess cancer risks that range between 1×10^{-6} to 1×10^{-4} are generally considered to be acceptable.
b/ A hazard index less than or equal to 1.0 means no adverse health effects are likely associated with exposures to chemicals of potential concern.
c/ All chemicals of potential concern in subsurface soil are volatile organic compounds that would tend to be volatilized from the soil on skin and should be accounted for via the inhalation routes. Thus, the fracion of a volatile organic absorbed dermally from soil is assumed to be zero and the dermal exposure pathway is incomplete.

Appendix A – Historical Analytical Data

TABLE 4. SOIL ANALYTICAL RESULTS - WIX FILTRATION FACILITY, DILLON, SC

EPA Method 8260 (mg/kg) Monitor Well	Depth (ft)	Sample Date	Acetone	Benzene	cis-1,2-DCE	Carbon disulfide	Ethylbenzene	Isopropyl-benzene	p-Isopropyl-toluene	n-Propyl-benzene	Methylene chloride	Naphthalene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylene (Total)	m&p-Xylene	o-Xylene
SCDHEC Preliminary Remediation			14K	0.64	43	360	400	570	NE	240		NE	520	52	21	270	NE	NE
GP-1	--	11/08/05	ND	0.014	ND	0.009	ND	ND	ND	ND	ND	ND	0.156	ND	ND	ND	ND	ND
GP-2	--	11/08/05	0.043	0.004	ND	ND	0.009	ND	0.002	0.004	ND	ND	9.11	0.005	ND	0.009	ND	ND
GP-3	--	11/08/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	656	0.870	ND	ND	ND	ND
GP-4	--	11/08/05	0.041	0.006	ND	ND	0.011	ND	0.006	0.021	ND	ND	44.9	0.009	ND	0.006	ND	ND
GP-5	--	11/08/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,630	ND	ND	ND	ND	ND
GP-6	--	11/08/05	ND	ND	ND	ND	ND	ND	1.710	ND	ND	ND	232	3.21	1.23	ND	ND	ND
GP-7	--	11/08/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	28.0	0.083	ND	ND	ND	ND
GP-8	--	11/08/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	990	1.95	0.800	ND	ND	ND
STB-1	4-6	05/16/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.10	410	4.00	1.30	2.10	ND	ND
STB-2	6-8	05/16/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,800	4.10	ND	ND	ND	ND
STB-3	8-10	05/16/06	ND	ND	ND	ND	0.0099	ND	ND	ND	ND	ND	30.0	0.0082	ND	0.014	0.012	ND
STB-4	4-6	05/16/06	ND	ND	ND	ND	0.290	ND	0.410	ND	ND	ND	66.0	ND	ND	0.450	0.450	ND
STB-5/MW-1	4-6	05/17/06	0.220	0.015	ND	ND	0.038	0.005	0.140	0.055	ND	0.084	370	0.130	0.042	0.084	0.055	0.028
STB-6	6-8	05/17/06	ND	0.0069	ND	ND	0.018	ND	0.011	ND	ND	ND	25.0	ND	ND	0.017	0.014	ND
STB-7/MW-3	2-4	05/17/06	ND	ND	ND	ND	0.0085	0.0094	0.0054	0.022	ND	ND	0.140	ND	0.028	0.011	0.0094	ND
STB-7/MW-3	8-10	05/17/06	--	--	--	ND	--	--	--	--	ND	--	--	--	--	--	--	--
STB-8/MW-4	6-8	05/17/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,000	ND	ND	6.00	ND	4.70
STB-8/MW-4	Duplicate	05/17/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,700	ND	ND	4.40	ND	4.40
STB-9	8-10	05/17/06	ND	0.013	0.0048	ND	0.110	0.079	ND	0.190	ND	0.005	380	0.570	0.230	0.300	0.160	0.140
STB-10	8-10	05/18/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
STB-10	12-14	05/18/06	--	--	--	ND	--	--	--	--	ND	--	--	--	--	--	--	--
STB-11/GP-9	4-6	12/06/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
STB-12/GP-10	6-8	12/05/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
STB-13/GP-11	8-10	12/05/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
STB-14/GP-12	6-8	12/07/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
STB-15/MW-12	2-4	02/15/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,640	ND	ND	ND	ND	ND
STB-16/MW-13	0-2	02/15/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	420	4.09	ND	ND	ND	ND
MW-5	12-14	12/06/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-6	8-10	12/06/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	4-6	12/04/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-8	4-6	12/05/06	ND	ND	ND	ND	ND	ND	0.012	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-9	6-8	12/06/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HA-1/GP-13	0-2	12/07/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HA-2/GP-14	0-2	12/07/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HA-3/GP-15	0-2	12/07/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SED-1	Surface	05/24/06	0.120	ND	ND	ND	ND	ND	0.0049	ND	ND	ND	ND	ND	ND	ND	ND	ND
SED-2	Surface	05/24/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Excavation-1	--	10/18/05	ND	0.002	ND	0.002	0.002	ND	ND	0.002	0.004	ND	11.1	0.008	0.003	0.005	ND	ND
Excavation-2	--	10/18/05	ND	ND	ND	ND	0.128	ND	ND	ND	ND	ND	127	0.211	0.092	0.169	ND	ND
Excavation-3	--	10/18/05	ND	ND	ND	0.002	0.002	ND	ND	ND	ND	ND	29.2	ND	ND	ND	ND	ND
Soil Pile-1	--	10/18/05	ND	ND	ND	0.005	0.010	ND	0.002	0.002	0.006	ND	6.90	0.023	0.005	0.017	ND	ND
Soil Pile-2	--	10/18/05	0.106	0.005	ND	0.003	0.031	0.003	0.003	0.008	0.006	ND	78.4	0.044	0.011	0.040	ND	ND

ND - Not detected "--" - Not analyzed NE - Not established Blue Font - exceeds SCDHEC PRG

APPENDIX B. GROUND WATER ANALYTICAL DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

EPA 8260 (ug/l) Sample Location	Sample Date	Acetone	Benzene	Chloroethane	cis-1,2-DCE	trans-1,2-DCE	1,2-DCE (Total)	1,1-DCA	1,1-DCE	Ethylbenzene	2-Hexanone	Isopropylbenzene	p-Isopropyltoluene	1,2-Dichlorobenzene	n-Propylbenzene	Toluene	TCE	PCE	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,1,1-TCA	Xylene (Total)	m&p-Xylene
SC GWr Std (MCL)		NE	5	NE	70	100	170	NE	7	700	NE	NE	NE		NE	1,000	5	5	NE	NE	200	10K	NE
MW-1	05/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	340,000	ND	ND	ND	ND	ND	230	ND
MW-1	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	260,000	ND	ND	ND	ND	ND	ND	ND
MW-1	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	231,000	ND	ND	ND	ND	ND	ND	ND
MW-1	08/14/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	254,000	ND	ND	ND	ND	ND	ND	--
MW-1	03/12/09	ND	69.8	ND	4.02	ND	4.02	ND	ND	45.9	ND	ND	4.1		ND	286,000	ND	ND	2.18	ND	ND	44	--
MW-1	09/01/09	ND	57.9	ND	2.85	ND	2.85	ND	ND	25.4	ND	ND	3.3		ND	229,000	ND	ND	1.86	1.57	ND	26	--
MW-1	03/10/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	326,000	ND	ND	ND	ND	ND	ND	--
MW-1	09/09/10	62	ND	ND	2.66	ND	ND	ND	ND	48.4	ND	1.02	8.13		3.81	332,000	ND	1.24	10.8	4.05	ND	51.4	--
MW-1	02/23/11	ND	60.3	ND	2.8	ND	2.8	ND	ND	ND	ND	ND	6.75		1.91	282,000	ND	ND	6.39	2.31	ND	ND	--
MW-1	08/12/11	ND	63.2	ND	2.92	ND	ND	ND	ND	35.6	ND	ND	6.02		1.43	364,000	ND	2.08	3.81	1.56	ND	37	--
DUP-01	08/12/11	ND	58.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	338,000	ND	ND	ND	ND	ND	ND	--
MW-1	02/13/12	ND	20.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	18,100	ND	ND	ND	ND	ND	ND	--
MW-1	08/10/12	ND	54.3	ND	1.95	ND	ND	ND	ND	9.28	ND	ND	0.988(j)		0.436(J)	66,700	ND	0.353(J)	1.56	0.614(j)	ND	10.4	--
DUP-01	08/10/12	ND	53	ND	2.2	ND	ND	ND	ND	10.8	ND	ND	0.33(J)		ND	44,200	ND	0.404	3.47	1.23	ND	12.7	--
MW-1	02/12/13	ND	25.6	ND	1.01	ND	ND	ND	ND	0.72(J)	ND	ND	ND		ND	167	ND	ND	1.17	ND	ND	0.669(J)	--
DUP-01	02/12/13	ND	24.8	ND	1.04	ND	ND	ND	ND	1.4	ND	0.290(J)	ND		ND	114	ND	ND	1.47	0.287(J)	ND	1.46(J)	--
MW-1	08/07/13	ND	6.57	ND	0.257(J)	ND	ND	ND	ND	ND	ND	ND	ND		ND	164	ND	ND	ND	ND	ND	ND	--
MW-2	05/24/06	ND	21	ND	ND	ND	ND	ND	ND	3.0	ND	ND	ND		ND	11,000	ND	ND	ND	ND	ND	2.8	2.4
MW-2	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	31,100	ND	ND	ND	ND	ND	ND	ND
MW-2	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	127,000	ND	ND	ND	ND	ND	ND	ND
MW-2	08/14/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	81,500	ND	ND	ND	ND	ND	ND	--
MW-2	03/12/09	ND	56.4	ND	1.89	ND	1.89	ND	ND	27.9	ND	ND	1.24		1.21	141,400	ND	ND	1.1	ND	ND	18.9	--
MW-2	09/01/09	ND	44.8	ND	1.39	ND	1.39	ND	ND	11.9	ND	ND	1.74		ND	91,800	ND	ND	ND	ND	ND	12.4	--
MW-2	03/10/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	99,400	ND	ND	ND	ND	ND	ND	--
MW-2	09/09/10	ND	69.1	ND	1.72	ND	ND	ND	ND	25.5	ND	ND	7.48		1.69	167,000	ND	ND	2.81	ND	ND	24.3	--
MW-2	02/23/11	ND	60	ND	1.72	ND	ND	ND	ND	21	ND	ND	2.94		1.57	115,000	ND	ND	1.73	ND	ND	20.7	--
MW-2	08/12/11	ND	61.6	ND	1.44	ND	ND	ND	ND	10.4	ND	ND	1.03		ND	96,600	ND	ND	ND	ND	ND	11	--
MW-2	02/13/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	222,000	ND	ND	ND	ND	ND	ND	--
MW-2	08/10/12	18.6(J)	64.2	ND	1.84	ND	ND	ND	ND	23.8	ND	0.303(J)	3.82		1.32	137,000		0.295(J)	2.22	0.722(J)	ND	24.4	--
MW-2	02/12/13	29.5(J)	61.4	ND	1.97	ND	ND	ND	ND	20.1		0.295(J)	3.02		1.23	131,000	0.266(J)	0.303(J)	2.08	0.587(J)	ND	22.3	--
MW-2	08/07/13	46.4	52.6	ND	1.35	ND	ND	ND	ND	15.1		ND	2.41		0.787(J)	112,000	ND	ND	1.39	0.450(J)	ND	16.9	--
DUP-01	08/07/13	49.5	49.6	ND	1.43	ND	ND	ND	ND	15.1		ND	2.22		0.733(J)	101,000	ND	ND	1.57	0.580(J)	ND	17.2	--
MW-3	05/24/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	210,000	ND	ND	2,100	ND	ND	ND	ND
DUP-1	05/24/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	220,000	ND	ND	2,100	ND	ND	ND	ND
MW-3	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	142,000	ND	ND	ND	ND	ND	ND	ND
DUP-1	08/08/07	ND	25.3	ND	2.3	ND	2.3	ND	ND	28.5	5.7	16.3	ND		ND	132,000	ND	ND	134	ND	ND	86.4	39.7
MW-3	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	78,300	ND	ND	ND	ND	ND	ND	ND
DUP-1	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	90,300	ND	ND	ND	ND	ND	ND	ND

APPENDIX B. GROUND WATER ANALYTICAL DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

EPA 8260 (ug/l) Sample Location	Sample Date	Acetone	Benzene	Chloroethane	cis-1,2-DCE	trans-1,2-DCE	1,2-DCE (Total)	1,1-DCA	1,1-DCE	Ethylbenzene	2-Hexanone	Isopropylbenzene	p-Isopropyltoluene	1,2-Dichlorobenzene	n-Propylbenzene	Toluene	TCE	PCE	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,1,1-TCA	Xylene (Total)	m&p-Xylene
SC GWr Std (MCL)		NE	5	NE	70	100	170	NE	7	700	NE	NE	NE		NE	1,000	5	5	NE	NE	200	10K	NE
MW-3	08/14/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	57,800	ND	ND	ND	ND	ND	ND	--
MW-3	03/12/09	ND	9.85	ND	ND	ND	ND	ND	ND	15.2	ND	23.8	5.43		35.8	14,200	ND	ND	173	60.2	ND	30.1	--
MW-3	09/01/09	ND	13.8	ND	1.09	ND	1.09	ND	ND	22.7	ND	22.3	7.55		50.1	41,000	ND	ND	159	69.6	ND	63.9	--
MW-3	03/10/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		112	6,470	ND	ND	150	184	ND	ND	--
MW-3	09/09/10	ND	ND	ND	ND	ND	ND	ND	ND	23.7	ND	21.3	6.1		36.2	65,300	ND	ND	156	55.3	ND	68.0	--
MW-3	02/23/11	474	29.4	ND	1.67	ND	ND	ND	ND	38.4	ND	25	5.19		48.1	156,000	ND	ND	165	60.7	ND	113.0	--
MW-3	08/13/11	ND	20.2	ND	1.13	ND	ND	ND	ND	13.9	ND	8.38	1.49		15	104,000	ND	ND	70.6	21	ND	42.2	--
MW-3	02/13/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	161,000	ND	ND	ND	ND	ND	ND	--
MW-3	08/10/12	43.6(J)	21.4	ND	1.29	ND	ND	ND	ND	21.5	ND	11.6	2.41		20.6	93,500	ND	0.465(J)	93.4	30.9	ND	66.5	--
MW-3	02/12/13	58.7	25.5	ND	1.73	ND	ND	ND	ND	33.2	ND	18.6	4.15		33.8	128,000	0.377(J)	0.742(J)	173	57.3	ND	111	--
MW-3	08/07/13	ND	16.8		1.04	ND	ND	ND	ND	12.5	ND	7.21	1.5		8.89	25,400	ND	ND	65.4	21.7		33.4	--
MW-4	05/24/06	27	27	ND	4.8	ND	5.1	ND	ND	3.4	ND	ND	ND		1.1	41,000	ND	ND	ND	1.6	ND	9.3	4.1
MW-4	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	169,000	ND	ND	ND	ND	ND	ND	ND
MW-4	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	321,000	ND	ND	ND	ND	ND	ND	ND
MW-4	08/14/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	321,000	ND	ND	ND	ND	ND	ND	--
DUP-1	08/14/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	333,000	ND	ND	ND	ND	ND	ND	--
MW-4	03/12/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	340,000	ND	ND	ND	ND	ND	ND	--
DUP-1	03/13/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	349,000	ND	ND	ND	ND	ND	ND	--
MW-4	09/01/09	64.7	81.1	ND	12.9	ND	12.9	ND	ND	25.5	ND	4.07	2.06		ND	272,000	ND	1.03	33.1	9.09	ND	56.2	--
MW-4	03/10/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		112	450,000	ND	ND	150	184	ND	ND	--
DUP-1	03/10/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		112	447,000	ND	ND	150	184	ND	ND	--
MW-4	09/09/10	72.8	93.4	ND	13.4	ND	ND	ND	ND	27.4	ND	5.32	1.5		8.31	296,000	ND	1.31	37.4	11.5	ND	59.2	--
DUP-1	09/09/10	70.0	93.1	ND	13.6	ND	ND	ND	ND	25.1	ND	4.71	1.23		6.98	304,000	ND	1.26	32.4	9.87	ND	54.6	--
MW-4	02/24/11	157	95	ND	14	ND	ND	ND	ND	33.3	ND	5.89	1.83		9.44	267,000	ND	ND	40.4	12.8	ND	71.1	--
MW-4	08/12/11	230	118	ND	14	ND	ND	ND	ND	36.8	ND	8.49	3.65		13.6	449,000	ND	2.4	61.5	18.8	ND	79.4	--
MW-4	02/13/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	384,000	ND	ND	ND	ND	ND	ND	--
MW-4	08/10/12	287	20.2	ND	14.1	ND	ND	ND	ND	34.8	ND	5.81	1.5		8.25	404,000	ND	ND	37.4	11.8	ND	72	--
MW-5	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-6	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	DUP-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	59.7	ND	ND	ND	ND	ND	ND	ND
MW-7	08/23/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	08/14/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	--
MW-7	03/13/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	--

APPENDIX B. GROUND WATER ANALYTICAL DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

EPA 8260 (ug/l) Sample Location	Sample Date	Acetone	Benzene	Chloroethane	cis-1,2-DCE	trans-1,2-DCE	1,2-DCE (Total)	1,1-DCA	1,1-DCE	Ethylbenzene	2-Hexanone	Isopropylbenzene	p-Isopropyltoluene	1,2-Dichlorobenzene	n-Propylbenzene	Toluene	TCE	PCE	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,1,1-TCA	Xylene (Total)	m&p-Xylene
SC GWr Std (MCL)		NE	5	NE	70	100	170	NE	7	700	NE	NE	NE		NE	1,000	5	5	NE	NE	200	10K	NE
MW-7	09/01/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	--
MW-7	03/10/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	--
MW-7	09/09/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	--
MW-7	02/23/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	7.76	ND	ND	ND	ND	ND	ND	--
MW-7	08/11/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	--
MW-7	02/13/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	--
DUP-01	02/13/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	--
MW-7	08/09/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	--
MW-7	02/12/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	--
MW-7	08/06/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	).586(J,B)	ND	ND	0.229(J)	ND	ND	0.437(J)	--
MW-8	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-9	01/04/07	ND	ND	ND	3.0	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	1.7	ND	ND	ND	ND	ND	ND
MW-10	02/23/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	2.38	ND	ND	ND	ND	ND	ND	--
MW-10	08/11/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.31	ND	ND	ND	ND	ND	ND	--
MW-10	02/13/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.26	ND	ND	ND	ND	ND	ND	--
MW-10	08/09/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
MW-10	02/12/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
MW-10	08/06/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	).614(J,B)	ND	ND	ND	ND	ND	ND	--
MW-11	02/23/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13,200	ND	ND	1.9	ND	ND	5.19	--
MW-11	08/11/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16,300	ND	ND	ND	ND	ND	ND	--
MW-11	02/12/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	42,900	ND	ND	ND	ND	ND	ND	--
MW-11	08/09/12	ND	0.443(J)	ND	ND	ND	ND	ND	ND	0.845(J)	ND	ND	ND	ND	ND	3,070	ND	ND	0.400(J)	ND	ND	1.04(J)	--
MW-11	02/12/13	ND	0.650(J)	ND	ND	ND	ND	ND	ND	1.06	ND	ND	ND	ND	ND	1,910	ND		0.593(J)	ND	ND	1.14(J)	--
MW-11	08/06/13	ND	13.3	ND	ND	ND	ND	ND	ND	18.1	ND	0.931(J)	1.16	ND	1.29	19,900	ND		5.42	1.88	ND	19.1	--
MW-12	02/24/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	494	ND	ND	1.05	ND	ND	ND	--
MW-12	08/11/11	ND	ND	ND	13.3	ND	ND	ND	ND	191	ND	1.48	5.94	ND	2.84	94,500	ND	ND	27	13.2	ND	230	--
MW-12	02/13/12	ND	ND	ND	ND	ND	ND	ND	ND	62.6	ND	ND	ND	ND	ND	5,770	ND	ND	ND	ND	ND	66.8	--
MW-12	08/09/12	ND	0.528(J)	ND	10.1	ND	ND	ND	ND	91.9	ND	0.588(J)	3.53	ND	1.29	7,060	ND	ND	11.7	6.15	ND	94.5	--
MW-12	02/12/13	ND	0.742(J)	ND	8.06	ND	ND	ND	ND	82.9	ND	0.520(J)	2.85	ND	1.03	498	ND	ND	9.35	5.15	ND	69.8	--
MW-12	08/07/13	ND	1.04	ND	1.03	ND	ND	ND	ND	126	ND	0.664(J)	2.94		1.43	46,100	0.671(J)	ND	15.5	7.53	ND	138	--
MW-13	02/24/11	35800	ND	ND	86.5	7.07	ND	ND	ND	ND	ND	14.8	ND	ND	21.8	371,000	ND	ND	99.3	30.4	ND	187	--
MW-13	08/11/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	446,000	ND	ND	ND	ND	ND	ND	--
MW-13	02/13/12	86,800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	459,000	ND	ND	ND	ND	ND	ND	--
MW-13	08/09/12	66,100	80.6	ND	62	7.27	ND	ND	ND	52.8	ND	89.5	6.97	ND	156	666,000	ND	9	501(E)	218(E)	ND	402	--

APPENDIX B. GROUND WATER ANALYTICAL DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

EPA 8260 (ug/l) Sample Location	Sample Date	Acetone	Benzene	Chloroethane	cis-1,2-DCE	trans-1,2-DCE	1,2-DCE (Total)	1,1-DCA	1,1-DCE	Ethylbenzene	2-Hexanone	Isopropylbenzene	p-Isopropyltoluene	1,2-Dichlorobenzene	n-Propylbenzene	Toluene	TCE	PCE	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,1,1-TCA	Xylene (Total)	m&p-Xylene
SC GWr Std (MCL)		NE	5	NE	70	100	170	NE	7	700	NE	NE	NE		NE	1,000	5	5	NE	NE	200	10K	NE
MW-13	02/12/13	75,300	77.7	ND	63.3	4.62	ND	ND	ND	51.6	ND	22.6	1.42	ND	38.6	395,000	3.08	ND	177	56.7	ND	219	--
MW-13	08/07/13	36,700	69	ND	62.3	6.01	ND	ND	ND	ND	ND	ND	0.829(J)	0.288(J)	22.3	533,000	ND	ND	120	41.2	ND	ND	--
MW-14	02/12/12	ND	ND	ND	436	ND	ND	ND	1.27	ND	ND	ND	ND	ND	ND	ND	ND	1.24	ND	ND	ND	ND	--
MW-14	08/09/12	ND	ND	ND	447	ND	ND	0.887(J)		ND		0.293(J)		ND	0.865(J)	23		0.864(J)	ND	ND	ND	ND	--
MW-14	02/12/13	ND	ND	ND	513	8.67	ND	ND	1.58	ND	ND	ND	ND	ND	ND	1.34	ND	1.06	0.584(J)	ND	ND	ND	--
MW-14	08/07/13	23	0.260(J)	ND	994	491	ND	ND	2.4	ND	ND	ND	ND	ND	ND	2.03(B)	0.244(J)	1.28	0.341(J)	ND0	ND	ND	--
MW-15	02/12/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
MW-15	08/09/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.624(J)	ND	0.731(J)	3	ND	ND	0.541(J)	ND	ND	ND	--
MW-15	02/12/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.303(J)	ND	0.290(J)	0.684(J)	ND	ND	0.884(J)	0.283(J)	ND	0.279(J)	--
MW-15	08/06/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	).594(J,B)	ND	ND	ND	ND	ND	ND	--
Temporary Monitor Wells																							
TW-1	11/18/05	ND	54.1	3.43	3.93	ND	ND	13.9	8.02	39.3	ND	ND	1.88	ND	2.58	140,000	ND	ND	ND	ND	7.52	30.1	ND
TW-2	11/18/05	ND	23.7	ND	2.68	ND	ND	ND	ND	13.8	ND	2.8	3.75	ND	6.49	7,610	ND	ND	28.4	6.64	ND	13	ND
TW-3	11/18/05	ND	55.0	ND	9.15	ND	ND	1.39	1.51	21.9	ND	5.9	1.03	ND	9.85	184,000	ND	1.26	61.1	12.7	ND	44.2	ND
TW-3	DUP-1	51.6	57.8	ND	13.3	ND	ND	ND	ND	43.4	ND	12.8	2.48	ND	24.1	184,000	ND	2.07	137	32.3	ND	88.7	ND
QA/QC Samples	**Equipment blanks**																						
EB-1	11/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.41	ND	ND	ND	ND	ND	ND	ND
EB-1	05/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EB-1	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EB-1	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EB-1	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND
QA/QC Samples	**Field blanks**																						
FB-1	11/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-1	05/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-1	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-1	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-2	08/23/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-1	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.0	ND	ND	ND	ND	ND	ND	ND
QA/QC Samples	**Laboratory trip blanks**																						
TB-1	11/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.73	ND	ND	ND	ND	ND	ND	ND
TB-1	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB-2	08/23/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trip Blank	08/14/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Trip Blank	03/13/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6	ND	ND	ND	ND	ND	--
Trip Blank	09/01/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Trip Blank	03/10/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--

APPENDIX B. GROUND WATER ANALYTICAL DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

EPA 8260 (ug/l) Sample Location	Sample Date	Acetone	Benzene	Chloroethane	cis-1,2-DCE	trans-1,2-DCE	1,2-DCE (Total)	1,1-DCA	1,1-DCE	Ethylbenzene	2-Hexanone	Isopropylbenzene	p-Isopropyltoluene	1,2-Dichlorobenzene	n-Propylbenzene	Toluene	TCE	PCE	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,1,1-TCA	Xylene (Total)	m&p-Xylene
SC GWr Std (MCL)		NE	5	NE	70	100	170	NE	7	700	NE	NE	NE		NE	1,000	5	5	NE	NE	200	10K	NE
Trip Blank	09/09/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Trip Blank	02/23/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46.8	ND	ND	ND	ND	ND	ND	--
Trip Blank	08/11/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46.8	ND	ND	ND	ND	ND	ND	--
Trip Blank	02/12/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46.8	ND	ND	ND	ND	ND	ND	--
Trip Blank	08/09/12	3.25(J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46.8	ND	ND	ND	ND	ND	ND	--
Trip Blank	02/12/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46.8	ND	ND	ND	ND	ND	ND	--
TB-01	08/07/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46.8	ND	ND	ND	ND	ND	ND	--

ND = Not detected above analytical method quantitation limit µg/L = Micrograms per Liter NE = Not established "--" - Not analyzed J - Approximate Value

Blue font - compound exceeds South Carolina MCL if an MCL has been established

APPENDIX B. GROUND WATER ANALYTICAL DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

EPA 8260 (ug/l) Sample Location	Sample Date	o-Xylene	Carbon disulfide	2-Butanone	sec-Butylbenzene	n-Butylbenzene	tert-Butylbenzene	Styrene	2-Chlorotoluene	4-Chlorotoluene	Methylene Chloride	Naphthalene	Vinyl Chloride	2-Hexanone	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene
SC GWr Std (MCL)		NE	360	NE	NE	NE	NE	100	NE	NE	NE	NE	2	NE	NE	NE	NE	70
MW-1	05/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	08/14/08	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	03/12/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	09/01/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	03/10/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	09/09/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	02/23/11	--	2.93	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	08/12/11	--	1.52	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-01	08/12/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	02/13/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	08/10/12	--	0.292(J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-01	08/10/12	--	0.351(J)	ND	ND	ND	ND	0.422(J)	0.754(J)	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	02/12/13	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-01	02/12/13	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.41(J)	ND	ND	ND	ND	ND	ND
MW-1	08/07/13	--	ND	ND	ND	ND	ND	ND	ND	ND	0.359	ND	ND	ND	ND	ND	ND	ND
MW-2	05/24/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	08/14/08	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	03/12/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	09/01/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	03/10/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	09/09/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	02/23/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	08/12/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	02/13/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	08/10/12	--	0.629(J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	02/12/13	--	1.36	ND	ND	ND	ND	ND	ND	ND	ND	1.36(J)	ND	1.41(J)	ND	ND	ND	ND
MW-2	08/07/13	--	0.449(J)	ND	ND	ND	ND	ND	ND		0.349(J)	ND	ND	ND	ND	ND	ND	ND
DUP-01	08/07/13	--	0.394(J)	ND	ND	ND	ND	ND	ND		0.583(J)	ND	ND	ND	ND	ND	ND	ND
MW-3	05/24/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-1	05/24/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-1	08/08/07	46.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-1	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX B. GROUND WATER ANALYTICAL DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

EPA 8260 (ug/l) Sample Location	Sample Date	o-Xylene	Carbon disulfide	2-Butanone	sec-Butylbenzene	n-Butylbenzene	tert-Butylbenzene	Styrene	2-Chlorotoluene	4-Chlorotoluene	Methylene Chloride	Naphthalene	Vinyl Chloride	2-Hexanone	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene
SC GWr Std (MCL)		NE	360	NE	NE	NE	NE	100	NE	NE	NE	NE	2	NE	NE	NE	NE	70
MW-3	08/14/08	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	03/12/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	09/01/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	03/10/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	09/09/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	02/23/11	--	1.27	66.2	1.46	3.5	25.7	3.5	25.7	66.2	1.46	3.5	25.7	ND	ND	ND	ND	ND
MW-3	08/13/11	--	ND	ND	ND	1.26	ND	1.26	ND	ND	ND	1.26	ND	ND	ND	ND	ND	ND
MW-3	02/13/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	08/10/12	--	ND	.82(J)	0.797(J)	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	02/12/13	--	0.417(J)	ND	ND	ND	ND	ND	ND	ND	ND	2.04(J)	ND	2.04(J)	ND	ND	ND	ND
MW-3	08/07/13	--	ND	ND	ND	ND	ND	ND	ND		0.789(J)	ND	ND	ND	ND	ND	ND	ND
MW-4	05/24/06	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	08/14/08	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-1	08/14/08	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	03/12/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-1	03/13/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	09/01/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	03/10/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-1	03/10/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	09/09/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-1	09/09/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	02/24/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	08/12/11	--	2.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	02/13/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	08/10/12	--	2.71	4.7(J)	ND	ND	ND	0.954(J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-5	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-6	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	DUP-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	08/23/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	08/14/08	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	03/13/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX B. GROUND WATER ANALYTICAL DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

EPA 8260 (ug/l) Sample Location	Sample Date	o-Xylene	Carbon disulfide	2-Butanone	sec-Butylbenzene	n-Butylbenzene	tert-Butylbenzene	Styrene	2-Chlorotoluene	4-Chlorotoluene	Methylene Chloride	Naphthalene	Vinyl Chloride	2-Hexanone	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene
SC GWr Std (MCL)		NE	360	NE	NE	NE	NE	100	NE	NE	NE	NE	2	NE	NE	NE	NE	70
MW-7	09/01/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	03/10/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	09/09/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	02/23/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	08/11/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	02/13/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DUP-01	02/13/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	08/09/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	02/12/13	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	08/06/13	--	ND	ND	ND	ND	ND	ND	ND	ND	0.800J	ND	ND	ND	ND	ND	ND	ND
MW-8	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-9	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	02/23/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	08/11/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	02/13/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	08/09/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	02/12/13	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	08/06/13	--	ND	ND	ND	ND	ND	ND	ND	ND	.670(J)	ND	ND	ND	ND	ND	ND	ND
MW-11	02/23/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	08/11/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	02/12/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	08/09/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	02/12/13	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	08/06/13	--	ND	ND	ND	ND	ND	ND	ND	ND	1.71(J)	ND	ND	ND	ND	ND	ND	ND
							ND		ND									
MW-12	02/24/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-12	08/11/11	--	ND	ND	ND	1.54	ND	1.54	ND	ND	ND	1.54	ND	ND	ND	ND	ND	ND
MW-12	02/13/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-12	08/09/12	--	ND	ND	0.263(J)	1.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-12	02/12/13	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.52(J)	ND	ND	ND	ND	ND	ND
MW-12	08/07/13	--	ND	ND	ND	ND	ND	ND	ND	ND	.528(J)	1.52(J)	ND	ND	ND	ND	ND	ND
MW-13	02/24/11	--	7.04	695	ND	ND	ND	ND	ND	695	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	08/11/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	02/13/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	08/09/12	--	7.15	741	0.545(J)	7.06	80.8	7.03	142	23.1	1.51(J)	3.23(J)	0.439(J)	ND	ND	ND	ND	ND

APPENDIX B. GROUND WATER ANALYTICAL DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

EPA 8260 (ug/l) Sample Location	Sample Date	o-Xylene	Carbon disulfide	2-Butanone	sec-Butylbenzene	n-Butylbenzene	tert-Butylbenzene	Styrene	2-Chlorotoluene	4-Chlorotoluene	Methylene Chloride	Naphthalene	Vinyl Chloride	2-Hexanone	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene
SC GWr Std (MCL)		NE	360	NE	NE	NE	NE	100	NE	NE	NE	NE	2	NE	NE	NE	NE	70
MW-13	02/12/13	--	7.34	962	ND	ND	ND	ND	ND	ND	2.65(J)	2.41(J)	0.541(J)	ND	0.910(J)	0.943(J)	0.257(J)	0.351(J)
MW-13	08/07/13	--	3.48	516	0.654(J)	ND	ND	ND	ND	ND	1.53(J)	1.02(J)	ND	ND	ND	ND	ND	ND
MW-14	02/12/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-14	08/09/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-14	02/12/13	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.274(J)	ND	ND	ND	ND	ND
MW-14	08/07/13	--	ND	ND	0.248(J)	ND	ND	ND	ND		0.667(J)	ND	0.580(J)	ND	ND	ND	ND	ND
MW-15	02/12/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	08/09/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	02/12/13	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	08/06/13	--	ND	ND	ND	ND	ND	ND	ND	ND	.898(J)	ND	ND	ND	ND	ND	ND	ND
Temporary Monitor We																		
TW-1	11/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TW-2	11/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TW-3	11/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TW-3	DUP-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
QA/QC Samples																		
EB-1	11/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EB-1	05/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EB-1	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EB-1	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EB-1	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND					
QA/QC Samples																		
FB-1	11/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-1	05/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-1	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-1	08/08/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-2	08/23/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-1	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
QA/QC Samples																		
TB-1	11/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB-1	01/04/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB-2	08/23/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB	01/10/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trip Blank	08/14/08	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trip Blank	03/13/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trip Blank	09/01/09	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trip Blank	03/10/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX B. GROUND WATER ANALYTICAL DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

EPA 8260 (ug/l) Sample Location	Sample Date	o-Xylene	Carbon disulfide	2-Butanone	sec-Butylbenzene	n-Butylbenzene	tert-Butylbenzene	Styrene	2-Chlorotoluene	4-Chlorotoluene	Methylene Chloride	Naphthalene	Vinyl Chloride	2-Hexanone	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene
SC GWr Std (MCL)		NE	360	NE	NE	NE	NE	100	NE	NE	NE	NE	2	NE	NE	NE	NE	70
Trip Blank	09/09/10	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trip Blank	02/23/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trip Blank	08/11/11	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trip Blank	02/12/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trip Blank	08/09/12	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trip Blank	02/12/13	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB-01	08/07/13	--	ND	ND	ND	ND	ND	ND	ND	ND	0.427	ND	ND	ND	ND	ND	ND	ND

ND = Not detected abov E - Exceeded Calibration Range NS - Not Sampled

Blue font - compound e

APPENDIX A. GROUND WATER GAUGING DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

Monitor Well	Gauging Date	TOC Elevation (ft NAVD)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Ground Water Elevation (ft NAVD)
MW-1	05/24/06	131.56	--	3.85	127.71
MW-1	01/04/07	131.56	--	3.25	128.31
MW-1	01/11/08	131.56	--	5.69	125.87
MW-1	03/12/09	131.56	--	3.09	128.47
MW-1	09/01/09	131.56	--	5.45	126.11
MW-1	03/10/10	131.56	--	--	--
MW-1	09/09/10	131.56	--	5.69	125.87
MW-1	02/23/11	131.56	--	2.51	129.05
MW-1	08/11/11	131.56	--	6.21	125.35
MW-1	02/13/12	131.56	--	5.13	126.43
MW-1	08/09/12	131.56	--	5.42	126.14
MW-1	02/12/13	131.56	--	3.00	128.56
MW-1	08/06/13	131.56	--	3.66	127.90
MW-4	05/24/11	130.47	--	4.30	126.17
MW-4	01/04/07	130.47	--	2.71	127.76
MW-4	01/11/08	130.47	--	6.39	124.08
MW-4	03/12/09	130.47	--	2.82	127.65
MW-4	09/01/09	130.47	--	6.70	123.77
MW-4	03/10/10	130.47	--	2.84	127.63
MW-4	09/09/10	130.47	--	7.77	122.70
MW-4	02/23/11	130.47	--	3.04	127.43
MW-4	08/11/11	130.47	--	9.04	121.43
MW-4	02/13/12	130.47	--	5.21	125.26
MW-4	08/09/12	130.47	--	NA	NA
MW-4	02/12/13	130.47	--	NA	NA
MW-4	08/06/13	130.47	--	NA	NA
MW-7	01/04/07	128.24	--	0.55	127.69
MW-7	01/11/08	128.24	--	4.90	123.34
MW-7	03/12/09	128.24	--	1.21	127.03
MW-7	09/01/09	128.24	--	5.00	123.24
MW-7	03/10/10	128.24	--	1.42	126.82
MW-7	09/09/10	128.24	--	6.16	122.08
MW-7	02/23/11	128.24	--	1.38	126.86
MW-7	08/11/11	128.24	--	6.74	121.50
MW-7	02/13/12	128.24	--	3.50	124.74
MW-7	08/09/12	128.24	--	5.22	123.02
MW-7	02/12/13	128.24	--	2.69	125.55
MW-7	08/06/13	128.24	--	1.12	127.12

Monitor Well	Gauging Date	TOC Elevation (ft NAVD)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Ground Water Elevation (ft NAVD)
MW-2	05/24/06	129.58	--	3.58	126.00
MW-2	01/04/07	129.58	--	1.65	127.93
MW-2	01/11/08	129.58	--	5.54	124.04
MW-2	03/12/09	129.58	--	1.87	127.71
MW-2	09/01/09	129.58	--	5.99	123.59
MW-2	03/10/10	129.58	--	1.77	127.81
MW-2	09/09/10	129.58	--	6.74	122.84
MW-2	02/23/11	129.58	--	2.35	127.23
MW-2	08/11/11	129.58	--	7.66	121.92
MW-2	02/13/12	129.58	--	4.29	125.29
MW-2	08/09/12	129.58	--	5.71	123.87
MW-2	02/12/13	129.58	--	4.66	124.92
MW-2	08/06/13	129.58	--	1.99	127.59
MW-5	05/24/11	128.97	--	--	--
MW-5	01/04/07	128.97	--	1.22	127.75
MW-5	01/11/08	128.97	--	5.03	123.94
MW-5	03/12/09	128.97	--	1.21	127.76
MW-5	09/01/09	128.97	--	5.36	123.61
MW-5	03/10/10	128.97	--	1.07	127.90
MW-5	09/09/10	128.97	--	6.39	122.58
MW-5	02/23/11	128.97	--	1.75	127.22
MW-5	08/11/11	128.97	--	7.49	121.48
MW-5	02/13/12	128.97	--	5.39	123.58
MW-5	08/09/12	128.97	--	5.28	123.69
MW-5	02/12/13	128.97	--	2.47	126.50
MW-5	08/06/13	128.97	--	1.67	127.30
MW-8	01/04/07	130.91	--	4.22	126.69
MW-8	01/11/08	130.91	--	8.01	122.90
MW-8	03/12/09	130.91	--	4.28	126.63
MW-8	09/01/09	130.91	--	5.85	125.06
MW-8	03/10/10	130.91	--	2.84	128.07
MW-8	09/09/10	130.91	--	9.18	121.73
MW-8	02/23/11	130.91	--	4.28	126.63
MW-8	08/11/11	130.91	--	10.50	120.41
MW-8	02/13/12	130.91	--	5.63	125.28
MW-8	08/09/12	130.91	--	5.44	125.47
MW-8	02/12/13	130.91	--	4.42	126.49
MW-8	08/06/13	130.91	--	5.37	125.54

Monitor Well	Gauging Date	TOC Elevation (ft NAVD)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Ground Water Elevation (ft NAVD)
MW-3	05/24/06	129.06	--	2.82	126.24
MW-3	01/04/07	129.06	--	1.10	127.96
MW-3	01/11/08	129.06	--	4.61	124.45
MW-3	03/12/09	129.06	--	1.32	127.74
MW-3	09/01/09	129.06	--	4.76	124.30
MW-3	03/10/10	129.06	--	1.15	127.91
MW-3	09/09/10	129.06	--	5.87	123.19
MW-3	02/23/11	129.06	--	1.75	127.31
MW-3	08/11/11	129.06	--	6.94	122.12
MW-3	02/13/12	129.06	--	4.27	124.79
MW-3	08/09/12	129.06	--	5.03	124.03
MW-3	02/12/13	129.06	--	3.43	125.63
MW-3	08/06/13	129.06	--	1.38	127.68
MW-6	05/24/11	129.73	--	--	--
MW-6	01/04/07	129.73	--	1.64	128.09
MW-6	01/11/08	129.73	--	5.86	123.87
MW-6	03/12/09	129.73	--	2.09	127.64
MW-6	09/01/09	129.73	--	6.23	123.50
MW-6	03/10/10	129.73	--	--	--
MW-6	09/09/10	129.73	--	6.74	122.99
MW-6	02/23/11	129.73	--	2.57	127.16
MW-6	08/11/11	129.73	--	8.23	121.50
MW-6	02/13/12	129.73	--	4.62	125.11
MW-6	08/09/12	129.73	--	6.20	123.53
MW-6	02/12/13	129.73	--	3.62	126.11
MW-6	08/06/13	129.73	--	3.06	126.67
MW-9	01/04/07	131.76	--	3.55	128.21
MW-9	01/11/08	131.76	--	5.67	126.09
MW-9	03/12/09	131.76	--	3.58	128.18
MW-9	09/01/09	131.76	--	6.19	125.57
MW-9	03/10/10	131.76	--	3.00	128.76
MW-9	09/09/10	131.76	--	6.98	124.78
MW-9	02/23/11	131.76	--	3.61	128.15
MW-9	08/11/11	131.76	--	7.29	124.47
MW-9	02/13/12	131.76	--	4.71	127.05
MW-9	08/09/12	131.76	--	6.29	125.47
MW-9	02/12/13	131.76	--	5.62	126.14
MW-9	08/06/13	131.76	--	4.53	127.23

APPENDIX A. GROUND WATER GAUGING DATA SUMMARY - WIX FILTRATION FACILITY, DILLON, SC

Monitor Well	Gauging Date	TOC Elevation (ft NAVD)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Ground Water Elevation (ft NAVD)
MW-10	02/23/11	130.34	--	3.72	126.62
MW-10	08/11/11	130.34	--	8.29	122.05
MW-10	02/13/12	130.34	--	5.48	124.86
MW-10	08/09/12	130.34	--	4.41	125.93
MW-10	02/12/13	130.34	--	4.00	126.34
MW-10	08/06/13	130.34	--	5.60	124.74
MW-13	02/23/11	131.42	--	3.10	128.32
MW-13	08/11/11	131.42	--	8.30	123.12
MW-13	02/13/12	131.42	--	5.72	125.70
MW-13	08/09/12	131.42	--	7.00	124.42
MW-13	02/12/13	131.42	--	6.87	124.55
MW-13	08/06/13	131.42	--	2.32	129.1

Monitor Well	Gauging Date	TOC Elevation (ft NAVD)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Ground Water Elevation (ft NAVD)
MW-11	02/23/11	130.59	--	3.49	127.10
MW-11	08/11/11	130.59	--	8.99	121.60
MW-11	02/13/12	130.59	--	5.47	125.12
MW-11	08/09/12	130.59	--	4.09	126.50
MW-11	02/12/13	130.59	--	3.79	126.80
MW-11	08/06/13	130.59	--	5.56	125.03
MW-14	02/13/12	135.01	--	10.42	124.59
MW-14	08/09/12	135.01	--	11.1	123.91
MW-14	02/12/13	135.01	--	11.53	123.48
MW-14	08/06/13	135.01	--	6.75	128.26

Monitor Well	Gauging Date	TOC Elevation (ft NAVD)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Ground Water Elevation (ft NAVD)
MW-12	02/23/11	134.56	--	1.79	132.77
MW-12	08/11/11	134.56	--	4.26	130.30
MW-12	02/13/12	134.56	--	5.39	129.17
MW-12	08/09/12	134.56	--	8.32	126.24
MW-12	02/12/13	134.56	--	5.09	129.47
MW-12	08/06/13	134.56	--	4.55	130.01
MW-15	02/13/12	130.84	--	6.78	124.06
MW-15	08/09/12	130.84	--	8.32	122.52
MW-15	02/12/13	130.84	--	6.10	124.74
MW-15	08/06/13	130.84	--	4.85	125.99

NGVD = National Geodetic Vertical Datum of 1929 TOC = Top of PVC Casing "--" = Not detected or no data available

Appendix B – Boring Logs

Boring Log: MW-11-36

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/7/2014

Surface Elevation (feet AMSL*): 129.04

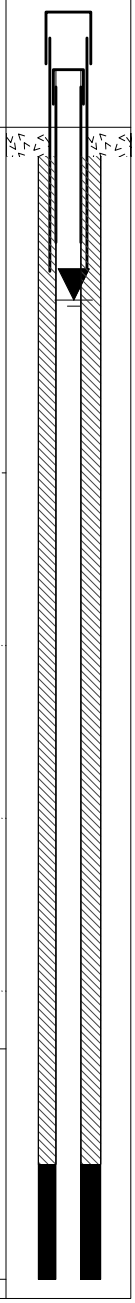
TOC Elevation (feet AMSL*): 131.63

Total Depth (feet): 36

Borehole Diameter (inches): 8

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
	1	0.0		0		***Clayey Sand (SC)*** Reddish brown (7.5YR 7/8); no odor.
2	2	0.0		0		
4	3	0.0		0		
6	4	0.0		100		***Fat Clay with Sand (CH)*** Gray; wet.
8	5	0.0		100		***Lean Clay (cl)*** Brownish yellow (10YR 6/8) with light gray (10YR 6/1) mottling, grades to light gray (10YR 6/1) at 10 ft-bgs, trace gravel; medium stiff to stiff; low plasticity; dry.
10	6	0.0		75		
12	7	0.0		100		***Sandy Lean Clay (CL)*** Gray; moist.
14	8	0.0		100		***Lean Clay (cl)*** Gray (10YR 5/1); soft; wet.
16	9	0.0		100		***Lean Clay with Sand (cl)*** Gray (10YR 5/1) to dark gray (10YR 4/1), fine-grained sand lenses; very soft; wet.
18	10	0.0		100		
20						

Well Details



Geologist(s): Paul Zarella
Subcontractor: ARM
Driller/Operator: Todd Allred
Method: Hollow Stem Auger

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: MW-11-36

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/7/2014

Surface Elevation (feet AMSL*): 129.04

TOC Elevation (feet AMSL*): 131.63

Total Depth (feet): 36

Borehole Diameter (inches): 8

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
	11	0.0		100		***Poorly-Graded Sand (sp)*** Light gray (10YR 7/1) coarse-grained sand, trace silt; very loose; wet.	
22	12	0.0		50		***Lean Clay (cl)*** Gray (10YR 6/1); soft to medium soft; wet.	
24	13	0.0		10		***Poorly-Graded Sand with Silt and Gravel (sp-sm)*** Gray (10YR 6/1) and yellowish brown (10YR 7/8) coarse-grained sand, trace gravel; very loose.	
26	14	0.0		10		***Poorly-Graded Sand with Silt and Gravel (sp-sm)*** Light gray (10YR 7/2) fine- to medium-grained sand; loose; wet.	
28	15	0.0		0			
30	16	0.0		0			
32	17	0.0		50			
34	18	0.0		50		***Lean Clay (cl)*** Dark gray (10YR 4/1); very stiff to hard; dry.	
36						Bottom of Boring at 36 feet	
38							
40							

Geologist(s): Paul Zarella
Subcontractor: ARM
Driller/Operator: Todd Allred
Method: Hollow Stem Auger

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: MW-12-38

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/6/2014

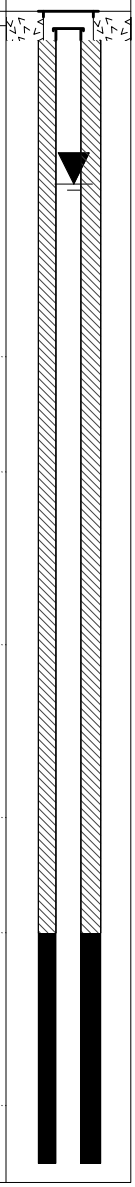
Surface Elevation (feet AMSL*): 134.51

TOC Elevation (feet AMSL*): 134.15

Total Depth (feet): 38.5

Borehole Diameter (inches): 8

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Ground Surface	
	1	0.0		5		***Asphalt*** Asphalt	
2	2	43.0		100		***Fat Clay with Sand (ch)*** Reddish brown (5YR 4/3), some coarse-grained sand; soft; high plasticity; moist; strong odor.	
4	3	27.0		75			
6	4	217		100		***Clayey Sand (sc)*** Light gray (5YR 7/1), coarse- to medium-grained sand; very loose; wet; strong odor.	
8	5	110		75		***Sandy Fat Clay (ch)*** Light gray (5YR 7/1) fine-grained sand; soft; high plasticity; moist.	
10	6	135		100			
12	7	200		50		***Lean Clay (cl)*** Light gray (5YR 7/1), some fine-grained sand; medium soft to stiff; moist.	
14	8	77		25		***Clayey Sand (sc)*** Light gray (5YR 7/1) to gray (5YR 6/1), fine- to medium-grained sand;loose; moist.	
16	9	15		100		***Sandy Lean Clay (cl)*** Light gray (5YR 7/1) fine-grained sand, 2-inch thick clayey sand lenses at 17' and 17.5' bgs.	
18	10	201		100			
20							



Geologist(s): Paul Zarella
Subcontractor: ARM
Driller/Operator: Todd Allred
Method: Hollow Stem Auger

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: MW-12-38

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/6/2014

Surface Elevation (feet AMSL*): 134.51

TOC Elevation (feet AMSL*): 134.15

Total Depth (feet): 38.5

Borehole Diameter (inches): 8

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
	11	0.0	- - - -	100		***Lean Clay with Sand (cl)*** Dark gray (5YR 4/1) to very dark gray (5YR 3/1), fine sand lense at 20' bgs; very soft; moist. *(continued)*	
22	12	0.0	- - - -	100		***Lean Clay (cl)*** Brownish yellow (10YR 5/8) with very pale brown (10YR 8/4) mottling; very soft; moist.	
24	13	2.3	- - - -	100		***Lean Clay (cl)*** Light gray (10YR 5/8) with very pale brown (10YR 8/4) mottling; very soft; moist.	
26	14	1.5	- - - -	50			
28	15	0.0	- - - -	100		***Poorly-Graded Sand (sp)*** Yellow (10 YR.7/8), coarse-grained sand; very loose; wet.	
30	16	N/A	- - - -	0.0			
32	17	5.0	- - - -	0.0		***Sandy Lean Clay (cl)*** Yellow (10YR 7/8) with brownish yellow (10YR 6/8) mottling, coarse-grained sand, some gravel; medium soft; wet. ***Poorly-Graded Sand with Silt (SP-SM)*** Yellow (10YR 7/8), medium- to coarse-grained sand; loose; wet.	
34	18	N/A	- - - -	2			
36	19	N/A	- - - -	0.0			
38						***Lean Clay (cl)*** Black (10YR 2/1), trace light gray silt; very stiff to hard; dry.	
40						Bottom of Boring at 38.5 feet	

Geologist(s): Paul Zarella
Subcontractor: ARM
Driller/Operator: Todd Allred
Method: Hollow Stem Auger

WSP
750 Holiday Drive, Suite 410
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(412) 604-1040

Boring Log: SB-1

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 129.33

Total Depth (feet): 10

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
2, 4	1	13. 4.2 1.7 6.2 31.1 208	- - - -	70		***Topsoil*** ***Fat Clay (ch)*** Brownish yellow (10YR 6/8) with red (2.5YR 4/8) and gray mottling, with fine- to medium-grained sand; soft; plastic; moist, wet at 3 ft-bgs; sweet odor.
6, 8	2	115 6.9 49 7.1 7.1 2.4	- - - -	80		***Sandy Fat Clay (ch)*** Pale Red (10YR 6/1); fine grained; medium loose; wet/saturated; slight sweet odor. ***Fat Clay (ch)*** Greenish gray (GY 6/5) clay with gray fine-grained sand interbeds/inclusions; medium soft; plastic; moist.
10						Bottom of Boring at 10 feet
12, 14, 16, 18, 20						

Geologist(s): Erin M. Huntley
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-2

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 129.6

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
	1	1.1 0.9 0.9 0.9 0.9 1.2 3.4 13.1 16.9	- - - -	94		***Clayey Sand (sc)*** Olive brown (2.5 Y 4/3), fine- to medium-grained sand; loose; wet (from rain).
2						***Sandy Fat Clay (ch)*** Black and gray (interbedded), fine- to medium-grained sand; medium stiff; moist.
4						***Sandy Fat Clay (ch)*** Gray (2.5Y 6/1), fine-grained sand; medium stiff; plastic; moist.
6						Bottom of Boring at 5 feet
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Erin M. Huntley
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
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(412) 604-1040

Boring Log: SB-3

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 129.77

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
	1	0.3 0.2 0.3 0.4 0.4 0.7 4.0 3.2 6.5 3': 1.6 4': 74.4	- - - -	75		***Sandy Fat Clay with Gravel (ch)*** Brown (10YR 5/3),fine- to medium-grained sand; damp. ***Clayey Sand (sc)*** Grayish brown (10YR 5/2); medium-grained; saturated/perched (THIS NEEDS CHECKED). ***Fat Clay (ch)*** Gray (10 YR 5/1 to 2.5 Y 6/1), black staining/STREAKING?? 2 to 2.7 ft-bgs; wet at 3.5 ft-bgs.
2						
4						
6						Bottom of Boring at 5 feet
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Nathaniel Goodhue
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-4

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 131.28

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
						Concrete
2		25.2 9.1 34.4 31.6 10.5 22.9	- - - -	100		***Poorly-Graded Sand with Clay (sp-sc)*** Dark greenish gray (GLEY 1 4/1), some gravel; loose; wet (standing water on concrete).
4						***Clayey Sand (sc)*** Dark greenish gray (GLEY 1 4/1); soft; moist; odor.
6		19.7 2.1 49.3 18.1 33.5 30.8 27.4 47.8 42.7 7 6.7	- - - -	100		***Lean Clay with Sand (CL)*** Olive brown (2.5 YR 4/3) with strong brown and gray mottling, fine-grained sand, trace gravel; moist, wet at 2.5 ft-bgs; odor.
8						***Silt (ml)*** Yellow (2.5 YR 7/6), grades to pale yellow; medium soft; non-plastic.
						Silt (ml) White (2/5 YR 8/1); non-plastic; dry.
10						***Lean Clay with Sand (cl)*** Yellowish brown (10YR 6/8), fine-grained sand; slightly plastic; stiff; moist.
12						***Fat Clay with Sand (ch)*** Greenish gray (GLEY 1 4/10) with yellowish brown (10YR 6/8) mottling, fine-grained sand; plastic; stiff; moist.
14						Bottom of Boring at 5 feet
16						
18						
20						

Geologist(s): Erin M. Huntley
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-5

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 130.21

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
						Concrete
2			- - - -	60		***Sandy Fat Clay (ch)*** Red (2.5 YR 4/8) and yellowish brown(10YR 5/6), trace gravel; stiff; plastic; moist.
4						***Clayey Sand (sc)*** Red (2.5 YR 4/8); medium dense; moist; sweet odor.
6						Bottom of Boring at 5 feet
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Erin M. Huntley
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-6

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 130.52

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
						Concrete
2	SB-6-2	16.1 12.5 7.8 6.8 3.2 37.3	- - - -	55		***Sandy Fat Clay (ch)*** Red (2.5 YR 4/8), trace gravel; stiff; moist; odor.
4						***Fat Clay with Sand (ch)*** Olive brown (2.5 Y 4/4); soft; moist, wet at 2.5 ft-bgs; odor.
6						Bottom of Boring at 5 feet
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Erin M. Huntley
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-7

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 131.04

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
						Concrete
2	SB-7-2	46 7.2 23.6 94.6	- - - -	55		***Sandy Fat Clay (ch)*** Red (2.5 YR 4/8), trace gravel; stiff; moist, wet at 2.25 ft-bgs; odor at water table.
4						
6						Bottom of Boring at 5 feet
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Erin M. Huntley
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-8

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 131.53

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
						5" concrete
2		0 0.3 1.4 2.5	- - - -	25		***Sandy Fat Clay (ch)*** Yellowish red (5YR 5/6) with gray mottling, fine-grained sand; stiff; plastic; moist, wet at 1.75 ft-bgs; sweet odor.
4						
6						Bottom of Boring at 5 feet
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Erin M. Huntley
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-9

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 132.1

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
						Concrete
2	SB-9-2.5	3.3 11.5 53.9 170 60.6	- - - -			***Sandy Fat Clay (ch)*** Yellowish red (5YR 5/8), fine- to medium-grained, trace fine-grained subangular gravel.
4						***Fat Clay (ch)*** Yellowish brown (10YR 5/6); wet at 2.75 ft-bgs; strong odor.
6						Bottom of Boring at 5 feet
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Nathaniel Goodhue
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-10

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 134.58

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
						Asphalt
2	1	2.1 2.7 2.5 2.5 1.8 1.1	- - - -	70		***Poorly-Graded Sand (sp)*** Yellow (2.5Y 8/8), coarse-grained sand; *FILL*
4						***Fat Clay (ch)*** Red (10R 5/8) with gravel.
						Sandy Fat Clay (ch) Yellowish red (5YR 5/6), fine- to medium-grained sand, trace subangular fine-grained gravel.
6						***Fat Clay (ch)*** Yellowish red (5YR 5/6); wet; strong odor.
8						Bottom of Boring at 5 feet
10						
12						
14						
16						
18						
20						

Geologist(s): Nathaniel Goodhue
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-11

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 133.6

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
						Asphalt
2	1	0.3 0.7 0.4 0.5 0.7 0.8 0.5 0.6	- - - -	90		***Poorly-Graded Sand (sp)*** Yellow (2.5 Y 8/8), coarse-grained sand.
						Sandy Fat Clay (ch) Yellowish red (5YR 5/6), very fine- to medium-grained sand.
4						***Fat Clay (ch)*** Strong brown (7.5 YR 5/6), trace very fine-grained sand; wet at 3 ft-bgs; strong odor.
6						Bottom of Boring at 5 feet
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Nathaniel Goodhue
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-12

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 132.89

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
						Asphalt
2	1	0.6 0.6 0.7 0.8 0.8 0.8 0.8	- - - -	90		***Sandy Fat Clay (ch)*** Yellowish red (5YR 5/6), fine- to medium-grained; dry to damp.
4						***Sandy Fat Clay (ch)*** Yellowish red (5YR 5/6) to dark yellowish brown (10YR 4/4), dark gray staining a 4 ft-bgs, trace fine-grained sand; wet at 2.5 ft-bgs.
6						Bottom of Boring at 5 feet
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Nathaniel Goodhue
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-13

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 133.56

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
	1	0.5 0.5 0.6 0.5 0.5 0.5 0.6 0.5 0.5 0.6	- - - -	90		***Asphalt***
						Topsoil
2						***Poorly-Graded Sand (sp)*** Yellow (2.5Y 8/8), coarse-grained sand; *fill*.
4						***Sandy Fat Clay (ch)*** Red (5YR 5/8), fine- to coarse-grained sand.
6						***Fat Clay (ch)*** Yellowish brown (10YR 5/8), trace fine-grained sand; wet at 3 ft-bgs.
						Bottom of Boring at 5 feet
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Nathaniel Goodhue
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
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(412) 604-1040

Boring Log: SB-14

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/1/2014

Surface Elevation (feet AMSL*): 132.81

Total Depth (feet): 5

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
2 4	1	0.5 0.6 0.7 0.6 0.6 0.6 0.6 0.6 0.4	- - - -	90		***Topsoil*** ***Sandy Fat Clay (ch)*** Strong brown (7.5YR 5/6), fine- to medium-grained sand, trace gravel and organic matter ***Fat Clay (ch)*** Yellowish brown (10YR 5/8), trace fine-grained sand, woody debris at 4.5 ft-bgs; wet at 3 ft-bgs.
6 8 10 12 14 16 18 20						Bottom of Boring at 5 feet

Geologist(s): Nathaniel Goodhue
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

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750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-15

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/2/2014

Surface Elevation (feet AMSL*): 132.09

Total Depth (feet): 20

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
2	1	0	- - - -	95		***Topsoil***
4						***Clayey Sand (sc)*** Very dark gray (7.5YR 3/1), very fine- to fine-grained sand.
						Fat Clay (ch) Light olive brown (2.5Y 5/4) to very dark gray (2.5Y 3/1); saturated at 2.25 ft-bgs.
6	2	0	- - - -	100		***Fat Clay (ch)*** Very dark gray (2.5Y 3/1) to light yellowish brown (2.5Y 6/4); wet.
8						
10	3	-	- - - -	0		***Lean Clay (cl)*** Light yellowish brown (2.5Y 6/4) to gray (2.5Y 6/1); wet.
12						
14						
16						
18						
20						

Bottom of Boring at 20 feet

Geologist(s): Nathaniel Goodhue
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-16

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/2/2014

Surface Elevation (feet AMSL*): 129.93

Total Depth (feet): 20

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
						Topsoil
2	1	0	- - - -	100		***Sandy Fat Clay (ch)*** Dark gray, very fine- to medium-grained sand; dry to damp.
4						***Fat Clay (ch)*** Gray; wet at 3.5 ft-bgs.
6	2	0	- - - -	60		
8						
10						***Sandy Fat Clay (ch)*** Gray, very fine- to fine-grained sand; wet.
12	3	0	- - - -	100		***Lean Clay (cl)*** Gray to light grayish brown; wet.
14						
16						***Sandy Lean Clay (cl)*** Light brown, very fine- to medium-grained; wet.
18	4	0	- - - -	100		***Sandy Lean Clay (cl)*** Brownish yellow, very fine- to fine-grained sand, interbedded poorly graded coarse sand; wet.
20						

Bottom of Boring at 20 feet

Geologist(s): Nathaniel Goodhue
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Direct Push

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-17

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/2/2014

Surface Elevation (feet AMSL*): 127.67

Total Depth (feet): 3

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
2	1	0	- - - -	-		***Sandy Fat Clay (ch)*** Brownish gray, fine-grained sand; soft; wet (standing water in ditch). ***Fat Clay with Sand (ch)*** Gray, some strong brown mottling; moist, wet at 2.5 ft-bgs.
4						Bottom of Boring at 3 feet
6						
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Erin M. Huntley
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Hand Auger

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-18

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/2/2014

Surface Elevation (feet AMSL*): 130.18

Total Depth (feet): 3

Borehole Diameter (inches): 2

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
	1	0	- - - -	-		***Topsoil***
2						***Fat Clay (ch)*** Brown with strong brown mottling, trace fine-grained sand.
						Fat Clay (ch) Yellowish brown; plastic; soft; wet.
4						Bottom of Boring at 3 feet
6						
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Erin M. Huntley
Subcontractor: ARM
Driller/Operator: Josh Register
Method: Hand Auger

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Boring Log: SB-19

Project: Wix Filtration Plant

Project No.: 31999

Location: Dillon, South Carolina

Completion Date: 5/7/2014

Surface Elevation (feet AMSL*): 132.17

Total Depth (feet): 4

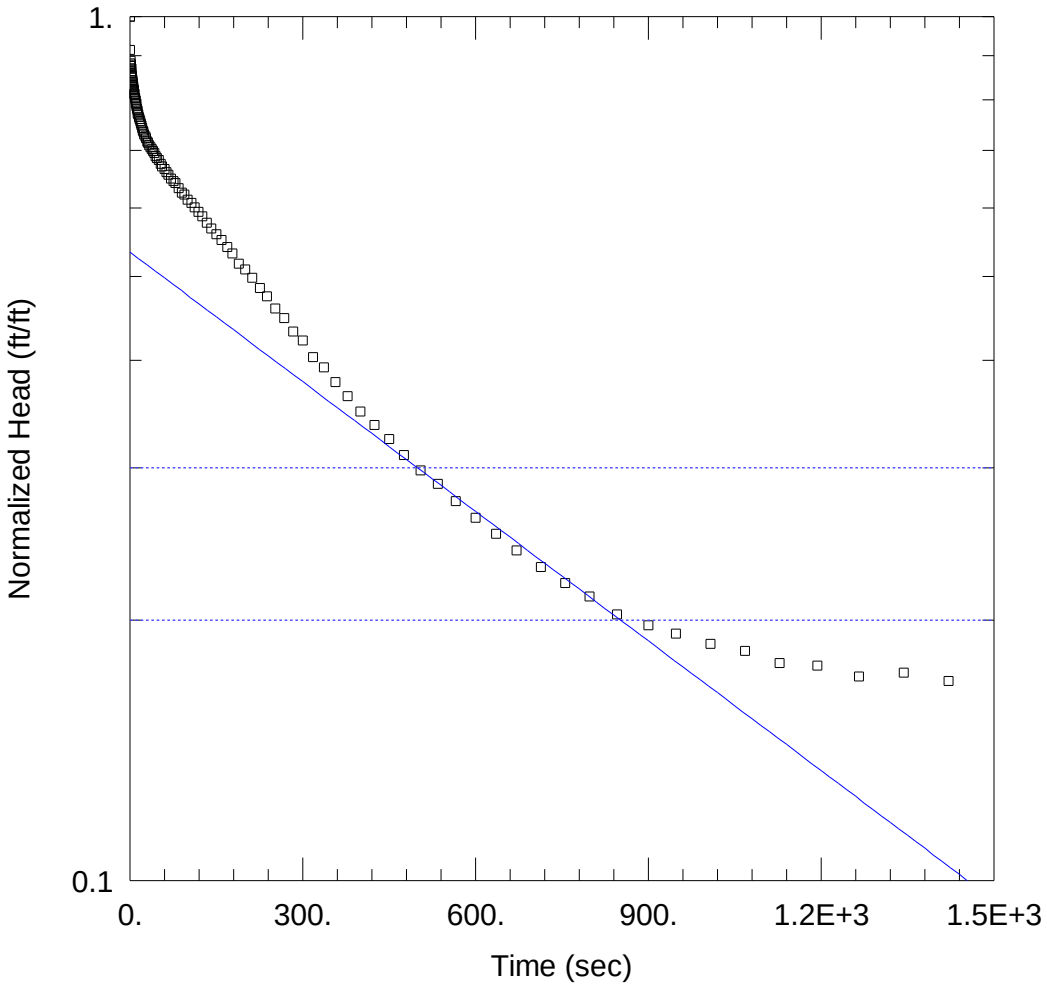
Borehole Diameter (inches): 8

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
	1	0.1	- - - -	100		Concrete
2	2	1.7	- - - -	100		***Fat Clay (ch)*** Light olive brown (2.5YR 5/6) NEED REST OF DESCRIPTION HERE. ***Fat Clay (ch)*** Stong brown (7.5 YR 4/6) with red (2.5YR 4/8) mottling, becoming gray at 4 ft-bgs; stiff.
4						Bottom of Boring at 4 feet
6						
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Paul Zarella
Subcontractor: ARM
Driller/Operator: Todd Allred
Method: Hollow Stem Auger

WSP
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania
(412) 604-1040

Appendix C – Slug Testing



WELL TEST ANALYSIS

Data Set: C:\Users\useh01121\Desktop\Wix Slug\31999_Wix_MW-1.aqt
Date: 06/17/14 Time: 15:42:56

PROJECT INFORMATION

Company: WSP
Client: Wix Filtration
Project: 31999
Location: Dillon, South Carolina
Test Well: MW-1
Test Date: 5/30/2014

AQUIFER DATA

Saturated Thickness: 33.31 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-1)

Initial Displacement: 1.54 ft Static Water Column Height: 12.21 ft
Total Well Penetration Depth: 12.21 ft Screen Length: 10. ft
Casing Radius: 0.086 ft Well Radius: 0.344 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 2.551E-5 cm/sec y0 = 0.8218 ft

Data Set: \\ser03res1us.us.wspgroup.com\es\Clients\Affinia\Dillon SC\RI Activities\Slug Testing\31999_Wix_MW-1.
Date: 08/11/14
Time: 14:18:49

PROJECT INFORMATION

Company: WSP
Client: Wix Filtration
Project: 31999
Location: Dillon, South Carolina
Test Date: 5/30/2014
Test Well: MW-1

AQUIFER DATA

Saturated Thickness: 33.31 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-1

X Location: 2486307.08 ft
Y Location: 954878.01 ft

Initial Displacement: 1.54 ft
Static Water Column Height: 12.21 ft
Casing Radius: 0.086 ft
Well Radius: 0.344 ft
Well Skin Radius: 0.344 ft
Screen Length: 10. ft
Total Well Penetration Depth: 12.21 ft

No. of Observations: 146

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.538	112.8	0.926
0.75	1.409	119.4	0.914
1.231	1.368	126.6	0.903
1.451	1.358	134.4	0.888
1.671	1.355	142.2	0.875
1.891	1.35	150.6	0.861
2.11	1.349	159.6	0.849
2.331	1.341	169.2	0.832
2.55	1.339	178.8	0.818
2.769	1.332	189.6	0.797
3.	1.325	201.	0.784
3.25	1.323	213.	0.767
3.5	1.314	225.6	0.746
3.75	1.313	238.8	0.73
4.	1.308	253.2	0.707
4.319	1.298	268.2	0.689
4.54	1.299	283.8	0.665

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
4.762	1.294	300.6	0.649
5.	1.29	318.6	0.621
5.25	1.287	337.2	0.604
5.5	1.283	357.6	0.581
5.75	1.278	378.6	0.56
6.	1.275	400.8	0.537
6.36	1.272	424.8	0.518
6.72	1.266	450.	0.499
7.14	1.265	476.4	0.478
7.56	1.258	504.6	0.459
7.98	1.253	534.6	0.443
8.46	1.249	566.4	0.423
9.	1.24	600.	0.405
9.48	1.237	636.	0.388
10.08	1.23	672.	0.371
10.68	1.223	714.	0.355
11.28	1.218	756.	0.34
11.94	1.211	798.	0.328
12.67	1.204	846.	0.313
13.44	1.197	900.	0.304
14.22	1.19	948.	0.297
15.06	1.185	1008.	0.289
15.96	1.177	1068.	0.284
16.92	1.171	1128.	0.275
17.88	1.166	1194.	0.273
18.96	1.158	1266.	0.265
20.1	1.152	1344.	0.268
21.3	1.143	1422.	0.262
22.56	1.136	1506.	0.26
23.88	1.132	1596.	0.253
25.32	1.124	1692.	0.251
26.82	1.118	1788.	0.249
28.38	1.112	1896.	0.25
30.06	1.103	2010.	0.247
31.86	1.099	2130.	0.247
33.72	1.093	2256.	0.25
35.76	1.087	2388.	0.247
37.86	1.081	2532.	0.253
40.08	1.076	2682.	0.251
42.48	1.07	2838.	0.255
45.	1.06	3006.	0.266
47.64	1.055	3186.	0.267
50.46	1.05	3372.	0.257
53.46	1.04	3576.	0.239
56.64	1.032	3786.	0.241
60.	1.025	4008.	0.252
63.6	1.017	4248.	0.247
67.2	1.01	4500.	0.254
71.4	1.	4764.	0.251
75.6	0.993	5046.	0.256
79.8	0.987	5346.	0.259
84.6	0.974	5664.	0.27
90.	0.963	6000.	0.252

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
94.8	0.958	6360.	0.255
100.8	0.945	6720.	0.254
106.8	0.937	7140.	0.255

SOLUTION

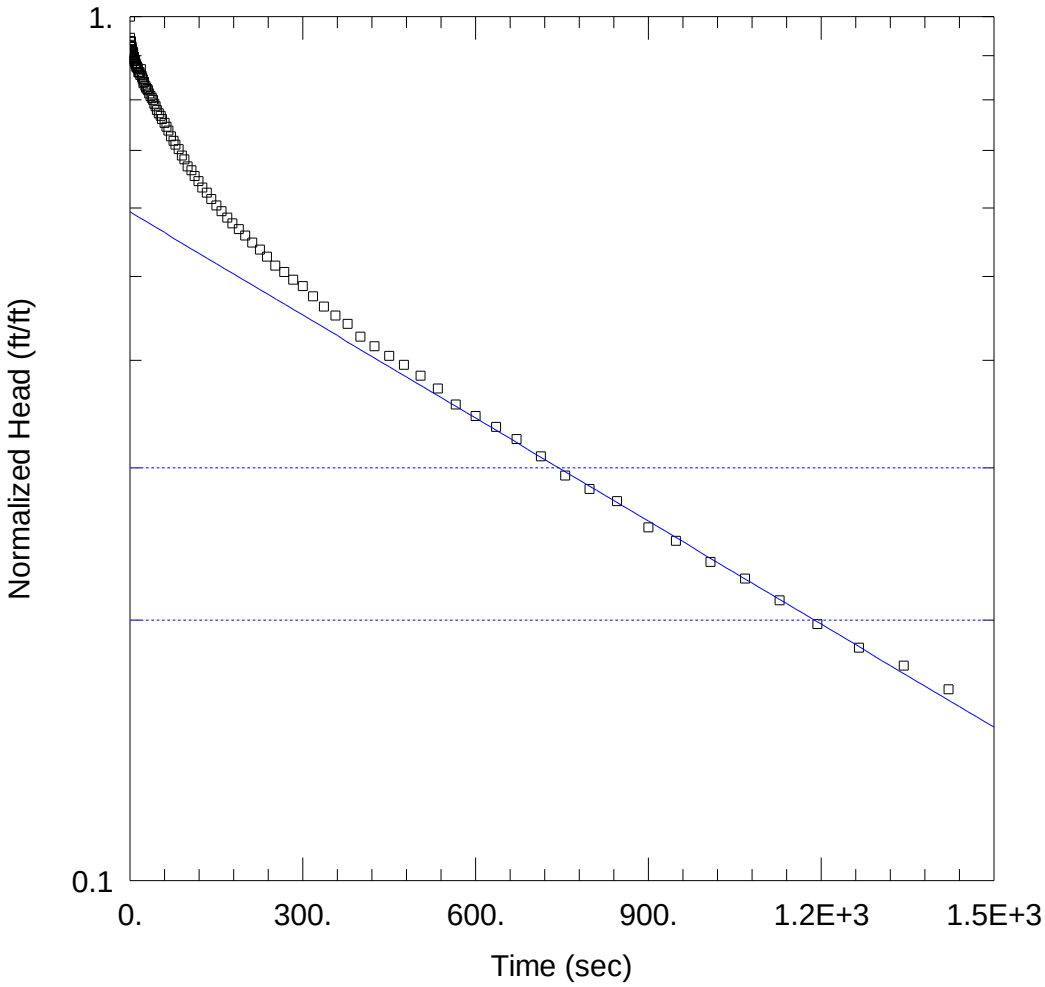
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 2.238

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	2.551E-5	cm/sec
y0	0.8218	ft

T = K*b = 0.0259 cm^2/sec



WELL TEST ANALYSIS

Data Set: C:\Users\useh01121\Desktop\Wix Slug\31999_Wix_MW-3.aqt
Date: 06/17/14 Time: 15:42:30

PROJECT INFORMATION

Company: WSP
Client: Wix Filtration
Project: 31999
Location: Dillon, South Carolina
Test Well: MW-3
Test Date: 5/30/2014

AQUIFER DATA

Saturated Thickness: 35.19 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-3)

Initial Displacement: 1.49 ft
Static Water Column Height: 13.69 ft
Total Well Penetration Depth: 13.69 ft
Screen Length: 10. ft
Casing Radius: 0.086 ft
Well Radius: 0.344 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.071E-5 cm/sec
y0 = 0.8845 ft

Data Set: C:\Users\useh01121\Desktop\Wix Slug\31999_Wix_MW-3.aqt
Date: 08/11/14
Time: 14:20:00

PROJECT INFORMATION

Company: WSP
Client: Wix Filtration
Project: 31999
Location: Dillon, South Carolina
Test Date: 5/30/2014
Test Well: MW-3

AQUIFER DATA

Saturated Thickness: 35.19 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-3

X Location: 2486293.64 ft
Y Location: 954786.58 ft

Initial Displacement: 1.49 ft
Static Water Column Height: 13.69 ft
Casing Radius: 0.086 ft
Well Radius: 0.344 ft
Well Skin Radius: 0.344 ft
Screen Length: 10. ft
Total Well Penetration Depth: 13.69 ft

No. of Observations: 147

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.491	119.4	0.96
0.75	1.408	126.6	0.944
1.149	1.394	134.4	0.932
1.369	1.381	142.2	0.916
1.59	1.395	150.6	0.9
1.809	1.392	159.6	0.887
2.029	1.376	169.2	0.872
2.25	1.375	178.8	0.858
2.5	1.375	189.6	0.845
2.75	1.376	201.	0.831
3.	1.373	213.	0.815
3.25	1.365	225.6	0.8
3.5	1.363	238.8	0.785
3.75	1.365	253.2	0.767
4.	1.364	268.2	0.754
4.25	1.352	283.8	0.738
4.5	1.356	300.6	0.726
4.75	1.358	318.6	0.707
5.	1.355	337.2	0.688
5.25	1.347	357.6	0.671
5.5	1.347	378.6	0.656
5.75	1.35	400.8	0.635
6.	1.339	424.8	0.619
6.36	1.338	450.	0.603

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
6.72	1.336	476.4	0.589
7.14	1.337	504.6	0.572
7.56	1.334	534.6	0.553
7.98	1.324	566.4	0.53
8.46	1.327	600.	0.514
9.	1.323	636.	0.499
9.48	1.317	672.	0.483
10.08	1.312	714.	0.461
10.68	1.311	756.	0.438
11.28	1.306	798.	0.423
11.94	1.301	846.	0.409
12.66	1.304	900.	0.382
13.44	1.299	948.	0.368
14.22	1.297	1008.	0.348
15.06	1.284	1068.	0.333
15.96	1.283	1128.	0.314
16.92	1.284	1194.	0.295
17.88	1.275	1266.	0.277
18.96	1.294	1344.	0.264
20.1	1.273	1422.	0.248
21.3	1.266	1506.	0.237
22.56	1.26	1596.	0.221
23.88	1.247	1692.	0.202
25.32	1.25	1788.	0.182
26.82	1.238	1896.	0.174
28.38	1.232	2010.	0.156
30.06	1.228	2130.	0.143
31.86	1.223	2256.	0.134
33.72	1.213	2388.	0.117
35.76	1.205	2532.	0.104
37.86	1.198	2682.	0.086
40.08	1.192	2838.	0.08
42.48	1.181	3006.	0.071
45.	1.173	3186.	0.064
47.64	1.161	3372.	0.049
50.46	1.151	3576.	0.042
53.46	1.143	3786.	0.037
56.64	1.134	4008.	0.031
60.	1.122	4248.	0.021
63.6	1.11	4500.	0.011
67.2	1.098	4764.	0.008
71.4	1.083	5046.	0.01
75.6	1.07	5346.	-0.021
79.8	1.058	5664.	-0.003
84.6	1.046	6000.	-0.004
90.	1.028	6360.	-0.015
94.8	1.017	6720.	-0.021
100.8	0.999	7140.	-0.015
106.8	0.989	7560.	-0.026
112.8	0.973		

SOLUTION

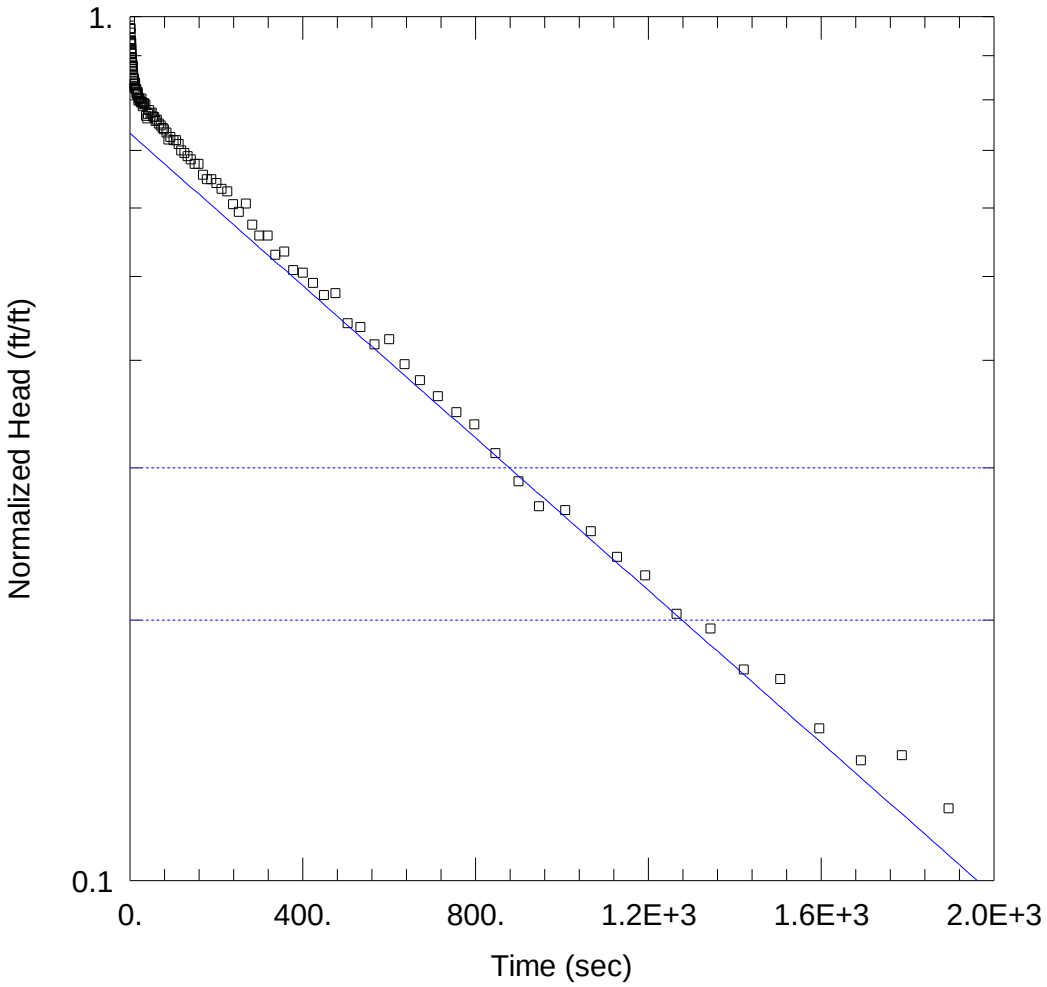
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 2.286

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	2.071E-5	cm/sec
y0	0.8845	ft

T = K*b = 0.02222 cm^2/sec



WELL TEST ANALYSIS

Data Set: C:\Users\useh01121\Desktop\Wix Slug\31999_Wix_MW-13.aqt
Date: 06/17/14 Time: 15:44:31

PROJECT INFORMATION

Company: WSP
Client: Wix Filtration
Project: 31999
Location: Dillon, South Carolina
Test Well: MW-13
Test Date: 5/30/2014

AQUIFER DATA

Saturated Thickness: 34.85 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-13)

Initial Displacement: 1.14 ft Static Water Column Height: 9.85 ft
Total Well Penetration Depth: 10. ft Screen Length: 10. ft
Casing Radius: 0.086 ft Well Radius: 0.344 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 2.15E-5 cm/sec y0 = 0.8347 ft

Data Set: C:\Users\useh01121\Desktop\Wix Slug\31999_Wix_MW-13.aqt
Date: 08/11/14
Time: 14:22:07

PROJECT INFORMATION

Company: WSP
Client: Wix Filtration
Project: 31999
Location: Dillon, South Carolina
Test Date: 5/30/2014
Test Well: MW-13

AQUIFER DATA

Saturated Thickness: 34.85 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-13

X Location: 2486400.74 ft
Y Location: 954850.39 ft

Initial Displacement: 1.14 ft
Static Water Column Height: 9.85 ft
Casing Radius: 0.086 ft
Well Radius: 0.344 ft
Well Skin Radius: 0.344 ft
Screen Length: 10. ft
Total Well Penetration Depth: 10. ft

No. of Observations: 178

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.141	283.8	0.654
0.794	1.13	300.6	0.636
1.014	1.102	318.6	0.636
1.251	1.102	337.2	0.604
1.501	1.104	357.6	0.609
1.751	1.091	378.6	0.58
2.001	1.067	400.8	0.576
2.251	1.069	424.8	0.56
2.501	1.065	450.	0.542
2.751	1.059	476.4	0.545
3.001	1.062	504.6	0.503
3.251	1.047	534.6	0.498
3.501	1.044	566.4	0.476
3.751	1.031	600.	0.482
4.001	1.033	636.	0.451
4.251	1.039	672.	0.432
4.501	1.014	714.	0.414
4.751	1.02	756.	0.397
5.001	1.021	798.	0.384
5.251	1.009	846.	0.356
5.501	0.996	900.	0.33
5.751	1.008	948.	0.309
6.001	1.003	1008.	0.306
6.361	0.999	1068.	0.289

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
6.721	0.998	1128.	0.27
7.141	0.99	1194.	0.257
7.561	0.969	1266.	0.232
7.981	0.975	1344.	0.223
8.461	0.966	1422.	0.2
9.001	0.966	1506.	0.195
9.481	0.96	1596.	0.171
10.08	0.958	1692.	0.157
10.68	0.943	1788.	0.159
11.28	0.952	1896.	0.138
11.94	0.955	2010.	0.128
12.66	0.948	2130.	0.099
13.44	0.939	2256.	0.111
14.22	0.94	2388.	0.087
15.06	0.937	2532.	0.087
15.96	0.928	2682.	0.072
16.92	0.926	2838.	0.077
17.88	0.931	3006.	0.069
18.96	0.928	3186.	0.074
20.1	0.911	3372.	0.062
21.3	0.917	3576.	0.07
22.56	0.914	3786.	0.074
23.88	0.909	4008.	0.063
25.32	0.907	4248.	0.06
26.82	0.916	4500.	0.06
28.38	0.907	4764.	0.059
30.06	0.897	5046.	0.064
31.86	0.902	5346.	0.063
33.72	0.904	5664.	0.062
35.76	0.901	6000.	0.064
37.86	0.875	6360.	0.063
40.08	0.868	6720.	0.045
42.48	0.879	7140.	0.072
45.	0.888	7560.	0.079
47.64	0.88	7980.	0.084
50.46	0.882	8460.	0.062
53.46	0.873	9000.	0.09
56.64	0.871	9480.	0.1
60.	0.863	1.008E+4	0.109
63.6	0.865	1.068E+4	0.11
67.2	0.856	1.128E+4	0.119
71.4	0.853	1.194E+4	0.124
75.6	0.847	1.266E+4	0.123
79.8	0.844	1.344E+4	0.144
84.6	0.837	1.422E+4	0.143
90.	0.821	1.506E+4	0.14
94.8	0.826	1.596E+4	0.137
100.8	0.82	1.692E+4	0.161
106.8	0.819	1.788E+4	0.162
112.8	0.811	1.896E+4	0.161
119.4	0.798	2.01E+4	0.172
126.6	0.792	2.13E+4	0.173
134.4	0.786	2.256E+4	0.165
142.2	0.779	2.388E+4	0.166
150.6	0.77	2.532E+4	0.167
159.6	0.77	2.682E+4	0.166
169.2	0.748	2.838E+4	0.155
178.8	0.738	3.006E+4	0.152
189.6	0.739	3.186E+4	0.164
201.	0.731	3.372E+4	0.174

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
213.	0.72	3.576E+4	0.158
225.6	0.715	3.786E+4	0.163
238.8	0.691	4.008E+4	0.182
253.2	0.677	4.248E+4	0.18
268.2	0.692	4.5E+4	0.199

SOLUTION

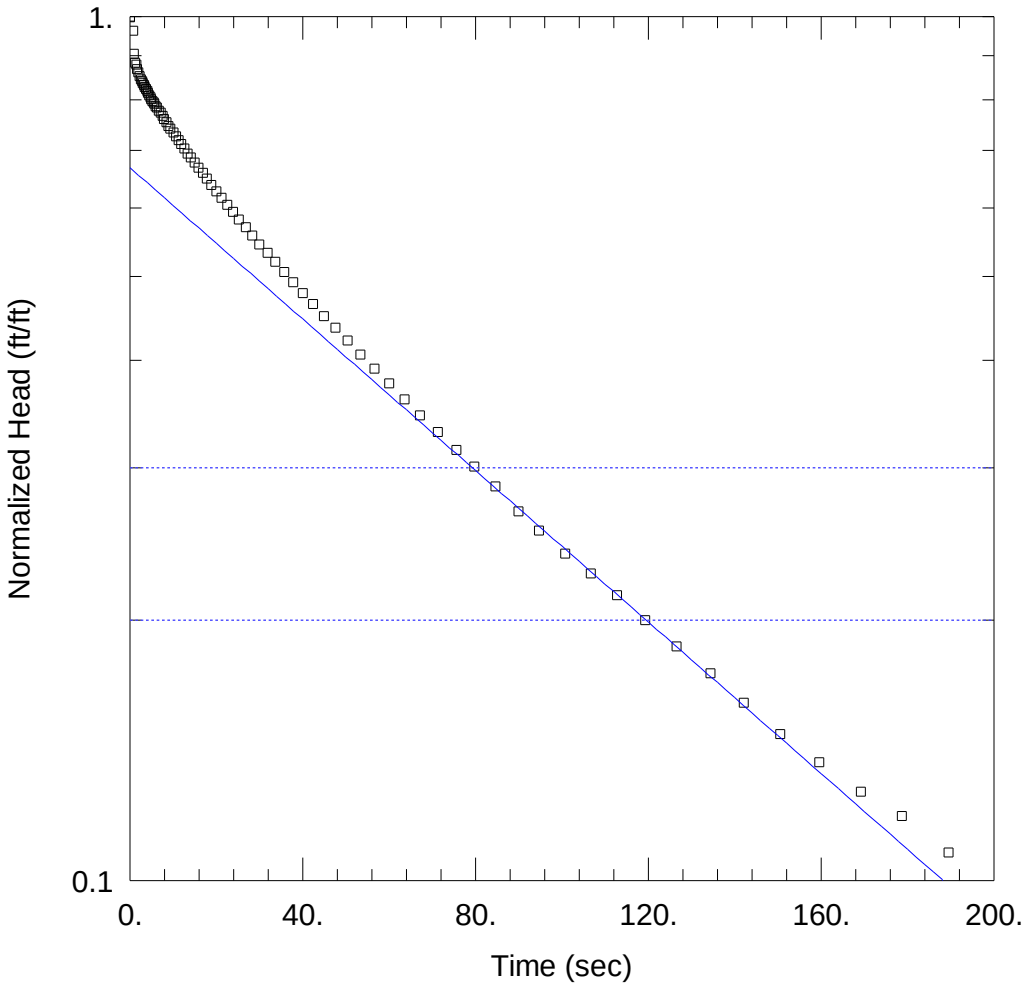
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 2.14

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	2.15E-5	cm/sec
y0	0.8347	ft

T = K*b = 0.02284 cm^2/sec



WELL TEST ANALYSIS

Data Set: C:\Users\useh01121\Desktop\Wix Slug\31999_Wix_MW-12-38.aqt
Date: 06/17/14 Time: 15:43:32

PROJECT INFORMATION

Company: WSP
Client: Wix Filtration
Project: 31999
Location: Dillon, South Carolina
Test Well: MW-12-38
Test Date: 5/30/2014

AQUIFER DATA

Saturated Thickness: 30.19 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-12-38)

Initial Displacement: 2.89 ft
Total Well Penetration Depth: 30.19 ft
Casing Radius: 0.086 ft
Static Water Column Height: 30.19 ft
Screen Length: 10. ft
Well Radius: 0.344 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0003197 cm/sec
y0 = 1.932 ft

Data Set: C:\Users\useh01121\Desktop\Wix Slug\31999_Wix_MW-12-38.aqt
Date: 08/11/14
Time: 14:21:02

PROJECT INFORMATION

Company: WSP
Client: Wix Filtration
Project: 31999
Location: Dillon, South Carolina
Test Date: 5/30/2014
Test Well: MW-12-38

AQUIFER DATA

Saturated Thickness: 30.19 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-12-38

X Location: 2486343.61 ft
Y Location: 954893.8 ft

Initial Displacement: 2.89 ft
Static Water Column Height: 30.19 ft
Casing Radius: 0.086 ft
Well Radius: 0.344 ft
Well Skin Radius: 0.344 ft
Screen Length: 10. ft
Total Well Penetration Depth: 30.19 ft

No. of Observations: 132

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	2.884	75.6	0.91
0.75	2.783	79.8	0.87
1.	2.615	84.6	0.825
1.25	2.554	90.	0.772
1.5	2.539	94.8	0.734
1.75	2.509	100.8	0.69
2.	2.488	106.8	0.655
2.25	2.464	112.8	0.618
2.626	2.442	119.4	0.578
2.845	2.432	126.6	0.539
3.068	2.42	134.4	0.502
3.288	2.406	142.2	0.464
3.508	2.394	150.6	0.427
3.75	2.38	159.6	0.396
4.	2.369	169.2	0.366
4.25	2.358	178.8	0.343
4.5	2.34	189.6	0.311
4.75	2.329	201.	0.285
5.	2.319	213.	0.267
5.25	2.307	225.6	0.242
5.5	2.297	238.8	0.218
5.75	2.291	253.2	0.199
6.	2.276	268.2	0.182
6.36	2.265	283.8	0.164

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
6.72	2.249	300.6	0.148
7.14	2.234	318.6	0.135
7.56	2.217	337.2	0.129
7.98	2.198	357.6	0.11
8.46	2.181	378.6	0.103
9.	2.157	400.8	0.09
9.48	2.141	424.8	0.083
10.08	2.119	450.	0.079
10.68	2.098	476.4	0.07
11.28	2.078	504.6	0.063
11.94	2.057	534.6	0.054
12.66	2.033	566.4	0.055
13.44	2.006	600.	0.054
14.22	1.984	636.	0.04
15.06	1.958	672.	0.041
15.96	1.93	714.	0.039
16.92	1.903	756.	0.03
17.88	1.875	798.	0.034
18.96	1.845	846.	0.033
20.1	1.814	900.	0.026
21.3	1.782	948.	0.024
22.56	1.749	1008.	0.011
23.88	1.716	1068.	0.023
25.32	1.682	1128.	0.023
26.82	1.647	1194.	0.021
28.38	1.612	1266.	0.005
30.06	1.574	1344.	0.021
31.86	1.539	1422.	0.017
33.72	1.502	1506.	-0.001
35.76	1.461	1596.	0.01
37.86	1.422	1692.	0.
40.08	1.383	1788.	0.
42.48	1.342	1896.	0.01
45.	1.3	2010.	0.008
47.64	1.26	2130.	0.008
50.46	1.218	2256.	0.014
53.46	1.173	2388.	0.007
56.64	1.131	2532.	0.01
60.	1.086	2682.	0.014
63.6	1.041	2838.	0.014
67.2	0.998	3006.	0.017
71.4	0.955	3186.	0.019

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.199

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0003197	cm/sec
y0	1.932	ft

T = K*b = 0.2942 cm²/sec

Appendix D – Analytical Data

Data Validation Report for Soil Samples

Wix Filtration Corp LLC Facility
Dillon, South Carolina

May 1- 2, 2014

Data Validation Report

Introduction

This Data Validation Report includes twenty-three soil samples, an equipment blank and a trip blank collected at the Wix Filtration Corp LLC facility in Dillon, South Carolina (Site) on May 1-2, 2014. The samples were analyzed by Pace Analytical Services, Inc. of Huntersville, North Carolina, for volatile organic compounds (VOCs) or total organic carbon (TOC) by U.S. Environmental Protection Agency (EPA) SW-846 Methods 8260 and 9060. The data were reviewed in accordance with the method and chain-of-custody criteria outlined in the National Functional Guidelines of Organic Data Review (July 2007).

SDG#	92199715
Report Date	May 20, 2014
Guidance	National Functional Guidelines of Organic (July 2007) Data Review
Client Name	WSP
Project Name	Wix-Dillon, SC
Laboratory	Pace Analytical
Method Utilized	SW-846 Method 8260
Analytical Fraction	Volatile Organic Compounds

Date Sampled	Sample ID	Laboratory ID	Parameter	Matrix
5/1/2014	SB-1-2.5	91199715001	VOCs	soil
5/1/2014	**SB-2-2.5**	**91199715002**	**VOCs**	**soil**
5/1/2014	SB-3-2.5	91199715003	VOCs	soil
5/1/2014	**SB-4-1**	**91199715004**	**VOCs**	**soil**
5/1/2014	SB-5-2	91199715005	VOCs	soil
5/1/2014	**SB-6-2**	**91199715006**	**VOCs**	**soil**
5/1/2014	SB-7-2	91199715007	VOCs	soil
5/1/2014	**SB-8-1.5**	**91199715008**	**VOCs**	**soil**
5/1/2014	SB-9-2.5	91199715009	VOCs	soil
5/1/2014	**SB-10-2.5**	**91199715010**	**VOCs**	**soil**
5/1/2014	SB-11-3	91199715011	VOCs	soil
5/1/2014	**SB-12-2**	**91199715012**	**VOCs**	**soil**
5/1/2014	SB-13-3	91199715013	VOCs	soil
5/1/2014	**SB-100-3**	**91199715014**	**VOCs**	**soil**
5/1/2014	SB-14-2.5	91199715015	VOCs	soil
5/2/2014	**SB-15-0607**	**91199715016**	**TOC**	**soil**
5/2/2014	SB-14-14-15	91199715017	TOC	soil
5/2/2014	**SB-16-0607**	**91199715018**	**VOCs**	**soil**
5/2/2014	SB-17-2	91199715019	VOCs	soil
5/2/2014	**SB-101-2**	**91199715020**	**VOCs**	**soil**
5/2/2014	SB-18-2.5	91199715021	VOCs	soil
5/1/2014	**SB-4-2**	**91199715022**	**VOCs**	**soil**
5/2/2014	SB-16-1415	91199715023	VOCs	soil
5/2/2014	**EB-050214**	**91199715024**	**VOCs**	**water**
5/2/2014	**TB-050214**	**91199715025**	**VOCs**	**water**

Volatile Organic Compounds

Twenty-three soil samples, an equipment blank and a trip blank were analyzed for VOCs by EPA SW-846 Method 8260. The sample IDs in bold above were reviewed for surrogate recovery, matrix spike/matrix spike duplicate (MS/MSD) recovery, blank contamination, instrument performance, calibration, and calculation criteria.

Reviewed	Achieved Criteria	
■	■	Data Completeness
■	■	Holding Times
■		Calibration
■	■	Blanks
■	■	System Monitoring Compounds

- Laboratory Control Sample
- Matrix Spike/ Matrix Spike Duplicate
- Internal Standards
- Target Compound Identification
- Compound Quantification and Reported Quantitation Limits
- System Performance

Calibration

Several target analytes exceeded the criteria for the continuing calibrations on May 5 and 6, 2014. These analytes are not reported for this sample delivery group.

Blanks

No analytes were detected in any method blank or the trip blank.

Field duplicate

The following field duplicates were collected along with the environmental samples.

Sample ID	Duplicate ID
SB-13	SB-100
SB-17	SB-101

There was good agreement between the sample and its associated duplicate.

Matrix Spike/Matrix Spike Duplicates

Several analytes had elevated recoveries in the MS/MSD sample. It was not necessary to qualify any of the results since data is rarely qualified for MS/MSD alone.

Compound Quantification

The samples listed below were diluted as indicated to bring the 1,1-dichloroethene into the instrument calibration range. It was not necessary to qualify any of the results.

Sample ID	Dilution Factor
SB-3-2.5	100x
SB-4-1	25x
SB-4-1	500x
SB-4-2	25X

Total Organic Carbon

A soil sample was analyzed for TOC by EPA SW-846 Method 9060. The sample was reviewed for surrogate recovery, laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery, blank contamination, instrument performance, calibration, and calculation criteria.

Reviewed	Achieved Criteria	
■	■	Data Completeness
■	■	Holding Times
■	■	Blanks
■	■	Laboratory Control Sample
■	■	Target Compound Identification
■	■	Compound Quantification and Reported Quantitation Limits

Calibration

The initial and continuing calibration criteria were met.

Blanks

No analytes were detected in any method blanks.

Field duplicate

There was no field duplicate sample collected.

Laboratory Control Sample/Laboratory Control Sample Duplicates

The spike recoveries in the LCS/LCSD were within acceptable limits.

Overall Assessment of the Data

The data presented are acceptable as qualified for site characterization activities.

Annotated Form 1’s

Pace Analytical
www.pacelabs.com

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 7.1422
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-2-2.5
Lab ID: 92199715002
Collected: 05/01/14 10:45
Received: 05/02/14 17:20
Analyzed: 05/05/14 18:13
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**19.7J**	72.8	
71-43-2	Benzene	**1.2J**	3.6	
74-97-5	Bromochloromethane	ND	3.6	
75-27-4	Bromodichloromethane	ND	3.6	
75-25-2	Bromoform	ND	3.6	
74-83-9	Bromomethane	ND	7.3	
78-93-3	2-Butanone (MEK)	ND	72.8	
75-15-0	Carbon disulfide	ND	7.3	
56-23-5	Carbon tetrachloride	ND	3.6	
108-90-7	Chlorobenzene	ND	3.6	
75-00-3	Chloroethane	ND	7.3	
67-66-3	Chloroform	ND	3.6	
74-87-3	Chloromethane	ND	7.3	
110-82-7	Cyclohexane	ND	3.6	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.6	
124-48-1	Dibromochloromethane	ND	3.6	
106-93-4	1,2-Dibromoethane (EDB)	ND	3.6	
95-50-1	1,2-Dichlorobenzene	ND	3.6	
541-73-1	1,3-Dichlorobenzene	ND	3.6	
106-46-7	1,4-Dichlorobenzene	ND	3.6	
75-71-8	Dichlorodifluoromethane	ND J	7.3	
75-34-3	1,1-Dichloroethane	ND	3.6	
107-06-2	1,2-Dichloroethane	ND	3.6	
75-35-4	1,1-Dichloroethene	ND	3.6	
156-59-2	cis-1,2-Dichloroethene	ND	3.6	
156-60-5	trans-1,2-Dichloroethene	ND	3.6	
78-87-5	1,2-Dichloropropane	ND	3.6	
10061-01-5	cis-1,3-Dichloropropene	ND	3.6	
10061-02-6	trans-1,3-Dichloropropene	ND	3.6	
123-91-1	1,4-Dioxane (p-Dioxane)	ND J	109	
100-41-4	Ethylbenzene	ND	3.6	
591-78-6	2-Hexanone	ND	36.4	
98-82-8	Isopropylbenzene (Cumene)	ND	3.6	
79-20-9	Methyl acetate	ND	7.3	
108-87-2	Methylcyclohexane	ND	7.3	
75-09-2	Methylene Chloride	ND	14.6	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	36.4	
1634-04-4	Methyl-tert-butyl ether	ND	3.6	
100-42-5	Styrene	ND	3.6	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.6	
127-18-4	Tetrachloroethene	ND	3.6	

JKJ 8/13/14

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 7.1422
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-2-2.5
Lab ID: 92199715002
Collected: 05/01/14 10:45
Received: 05/02/14 17:20
Analyzed: 05/05/14 18:13
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**53.7**	3.6	
87-61-6	1,2,3-Trichlorobenzene	ND	3.6	
120-82-1	1,2,4-Trichlorobenzene	ND	3.6	
71-55-6	1,1,1-Trichloroethane	ND	3.6	
79-00-5	1,1,2-Trichloroethane	ND	3.6	
79-01-6	Trichloroethene	ND	3.6	
75-69-4	Trichlorofluoromethane	ND	3.6	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	3.6	
75-01-4	Vinyl chloride	ND	7.3	
179601-23-1	m&p-Xylene	ND	7.3	
95-47-6	o-Xylene	ND	3.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 11.715
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-4-1
Lab ID: 92199715004
Collected: 05/01/14 12:05
Received: 05/02/14 17:20
Analyzed: 05/05/14 21:32
Dilution Factor: 25

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	1810	
71-43-2	Benzene	ND	90.6	
74-97-5	Bromochloromethane	ND	90.6	
75-27-4	Bromodichloromethane	ND	90.6	
75-25-2	Bromoform	ND	90.6	
74-83-9	Bromomethane	ND	181	
78-93-3	2-Butanone (MEK)	ND	1810	
75-15-0	Carbon disulfide	ND	181	
56-23-5	Carbon tetrachloride	ND	90.6	
108-90-7	Chlorobenzene	ND	90.6	
75-00-3	Chloroethane	ND	181	
67-66-3	Chloroform	ND	90.6	
74-87-3	Chloromethane	ND	181	
110-82-7	Cyclohexane	ND	90.6	
96-12-8	1,2-Dibromo-3-chloropropane	ND	90.6	
124-48-1	Dibromochloromethane	ND	90.6	
106-93-4	1,2-Dibromoethane (EDB)	ND	90.6	
95-50-1	1,2-Dichlorobenzene	ND	90.6	
541-73-1	1,3-Dichlorobenzene	ND	90.6	
106-46-7	1,4-Dichlorobenzene	ND	90.6	
75-71-8	Dichlorodifluoromethane	ND J	181	L3
75-34-3	1,1-Dichloroethane	ND	90.6	
107-06-2	1,2-Dichloroethane	ND	90.6	
75-35-4	1,1-Dichloroethene	ND	90.6	
156-59-2	cis-1,2-Dichloroethene	**78.9J**	90.6	
156-60-5	trans-1,2-Dichloroethene	ND	90.6	
78-87-5	1,2-Dichloropropane	ND	90.6	
10061-01-5	cis-1,3-Dichloropropene	ND	90.6	
10061-02-6	trans-1,3-Dichloropropene	ND	90.6	
123-91-1	1,4-Dioxane (p-Dioxane)	ND J	2720	
100-41-4	Ethylbenzene	ND	90.6	
591-78-6	2-Hexanone	ND	906	
98-82-8	Isopropylbenzene (Cumene)	ND	90.6	
79-20-9	Methyl acetate	ND	181	
108-87-2	Methylcyclohexane	ND	181	
75-09-2	Methylene Chloride	ND	363	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	906	
1634-04-4	Methyl-tert-butyl ether	ND	90.6	
100-42-5	Styrene	ND	90.6	
79-34-5	1,1,2,2-Tetrachloroethane	ND	90.6	L2
127-18-4	Tetrachloroethene	ND	90.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 11.715
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-4-1
Lab ID: 92199715004
Collected: 05/01/14 12:05
Received: 05/02/14 17:20
Analyzed: 05/05/14 21:32
Dilution Factor: 25

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
87-61-6	1,2,3-Trichlorobenzene	ND	90.6	
120-82-1	1,2,4-Trichlorobenzene	ND	90.6	
71-55-6	1,1,1-Trichloroethane	ND	90.6	
79-00-5	1,1,2-Trichloroethane	ND	90.6	
79-01-6	Trichloroethene	ND	90.6	L3
75-69-4	Trichlorofluoromethane	ND	90.6	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	90.6	
75-01-4	Vinyl chloride	ND	181	
179601-23-1	m&p-Xylene	ND	181	
95-47-6	o-Xylene	**48.2J**	90.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 14.2029
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-6-2
Lab ID: 92199715006
Collected: 05/01/14 13:50
Received: 05/02/14 17:20
Analyzed: 05/05/14 22:11
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**18.9J**	86.7	
71-43-2	Benzene	**7.3**	4.3	
74-97-5	Bromochloromethane	ND	4.3	
75-27-4	Bromodichloromethane	ND	4.3	
75-25-2	Bromoform	ND	4.3	
74-83-9	Bromomethane	ND	8.7	
78-93-3	2-Butanone (MEK)	ND	86.7	
75-15-0	Carbon disulfide	ND	8.7	
56-23-5	Carbon tetrachloride	ND	4.3	
108-90-7	Chlorobenzene	ND	4.3	
75-00-3	Chloroethane	ND	8.7	
67-66-3	Chloroform	ND	4.3	
74-87-3	Chloromethane	ND	8.7	
110-82-7	Cyclohexane	ND	4.3	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.3	
124-48-1	Dibromochloromethane	ND	4.3	
106-93-4	1,2-Dibromoethane (EDB)	ND	4.3	
95-50-1	1,2-Dichlorobenzene	ND	4.3	
541-73-1	1,3-Dichlorobenzene	ND	4.3	
106-46-7	1,4-Dichlorobenzene	ND	4.3	
75-71-8	Dichlorodifluoromethane	ND J	8.7	L3
75-34-3	1,1-Dichloroethane	ND	4.3	
107-06-2	1,2-Dichloroethane	ND	4.3	
75-35-4	1,1-Dichloroethene	ND	4.3	
156-59-2	cis-1,2-Dichloroethene	**1.3J**	4.3	
156-60-5	trans-1,2-Dichloroethene	ND	4.3	
78-87-5	1,2-Dichloropropane	ND	4.3	
10061-01-5	cis-1,3-Dichloropropene	ND	4.3	
10061-02-6	trans-1,3-Dichloropropene	ND	4.3	
123-91-1	1,4-Dioxane (p-Dioxane)	ND J	130	
100-41-4	Ethylbenzene	**1.6J**	4.3	
591-78-6	2-Hexanone	ND	43.4	
98-82-8	Isopropylbenzene (Cumene)	**1.9J**	4.3	
79-20-9	Methyl acetate	ND	8.7	
108-87-2	Methylcyclohexane	ND	8.7	
75-09-2	Methylene Chloride	ND	17.3	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	43.4	
1634-04-4	Methyl-tert-butyl ether	ND	4.3	
100-42-5	Styrene	ND	4.3	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.3	L2
127-18-4	Tetrachloroethene	ND	4.3	

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 14.2029
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-6-2
Lab ID: 92199715006
Collected: 05/01/14 13:50
Received: 05/02/14 17:20
Analyzed: 05/05/14 22:11
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**21.2**	4.3	
87-61-6	1,2,3-Trichlorobenzene	ND	4.3	
120-82-1	1,2,4-Trichlorobenzene	ND	4.3	
71-55-6	1,1,1-Trichloroethane	ND	4.3	
79-00-5	1,1,2-Trichloroethane	ND	4.3	
79-01-6	Trichloroethene	ND	4.3	L3
75-69-4	Trichlorofluoromethane	ND	4.3	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	4.3	
75-01-4	Vinyl chloride	ND	8.7	
179601-23-1	m&p-Xylene	ND	8.7	
95-47-6	o-Xylene	ND	4.3	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 17.4424
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-8-1.5
Lab ID: 92199715008
Collected: 05/01/14 14:40
Received: 05/02/14 17:20
Analyzed: 05/05/14 22:51
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	85.2	
71-43-2	Benzene	**4.0J**	4.3	
74-97-5	Bromochloromethane	ND	4.3	
75-27-4	Bromodichloromethane	ND	4.3	
75-25-2	Bromoform	ND	4.3	
74-83-9	Bromomethane	ND	8.5	
78-93-3	2-Butanone (MEK)	ND	85.2	
75-15-0	Carbon disulfide	ND	8.5	
56-23-5	Carbon tetrachloride	ND	4.3	
108-90-7	Chlorobenzene	ND	4.3	
75-00-3	Chloroethane	ND	8.5	
67-66-3	Chloroform	ND	4.3	
74-87-3	Chloromethane	ND	8.5	
110-82-7	Cyclohexane	ND	4.3	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.3	
124-48-1	Dibromochloromethane	ND	4.3	
106-93-4	1,2-Dibromoethane (EDB)	ND	4.3	
95-50-1	1,2-Dichlorobenzene	ND	4.3	
541-73-1	1,3-Dichlorobenzene	ND	4.3	
106-46-7	1,4-Dichlorobenzene	ND	4.3	
75-71-8	Dichlorodifluoromethane	ND J	8.5	L3
75-34-3	1,1-Dichloroethane	ND	4.3	
107-06-2	1,2-Dichloroethane	ND	4.3	
75-35-4	1,1-Dichloroethene	ND	4.3	
156-59-2	cis-1,2-Dichloroethene	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	ND	4.3	
78-87-5	1,2-Dichloropropane	ND	4.3	
10061-01-5	cis-1,3-Dichloropropene	ND	4.3	
10061-02-6	trans-1,3-Dichloropropene	ND	4.3	
123-91-1	1,4-Dioxane (p-Dioxane)	ND J	128	
100-41-4	Ethylbenzene	**2.0J**	4.3	
591-78-6	2-Hexanone	ND	42.6	
98-82-8	Isopropylbenzene (Cumene)	ND	4.3	
79-20-9	Methyl acetate	ND	8.5	
108-87-2	Methylcyclohexane	ND	8.5	
75-09-2	Methylene Chloride	ND	17.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	42.6	
1634-04-4	Methyl-tert-butyl ether	ND	4.3	
100-42-5	Styrene	ND	4.3	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.3	L2
127-18-4	Tetrachloroethene	ND	4.3	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 17.4424
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-8-1.5
Lab ID: 92199715008
Collected: 05/01/14 14:40
Received: 05/02/14 17:20
Analyzed: 05/05/14 22:51
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**8.4**	4.3	
87-61-6	1,2,3-Trichlorobenzene	ND	4.3	
120-82-1	1,2,4-Trichlorobenzene	ND	4.3	
71-55-6	1,1,1-Trichloroethane	ND	4.3	
79-00-5	1,1,2-Trichloroethane	ND	4.3	
79-01-6	Trichloroethene	ND	4.3	L3
75-69-4	Trichlorofluoromethane	ND	4.3	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	4.3	
75-01-4	Vinyl chloride	ND	8.5	
179601-23-1	m&p-Xylene	ND	8.5	
95-47-6	o-Xylene	ND	4.3	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 18.5362
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-10-2.5
Lab ID: 92199715010
Collected: 05/01/14 15:30
Received: 05/02/14 17:20
Analyzed: 05/06/14 18:45
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	89.3	
71-43-2	Benzene	ND	4.5	
74-97-5	Bromochloromethane	ND	4.5	
75-27-4	Bromodichloromethane	ND	4.5	
75-25-2	Bromoform	ND	4.5	
74-83-9	Bromomethane	ND	8.9	
78-93-3	2-Butanone (MEK)	ND	89.3	
75-15-0	Carbon disulfide	ND	8.9	
56-23-5	Carbon tetrachloride	ND	4.5	
108-90-7	Chlorobenzene	ND	4.5	
75-00-3	Chloroethane	ND	8.9	
67-66-3	Chloroform	ND	4.5	
74-87-3	Chloromethane	ND	8.9	
110-82-7	Cyclohexane	ND	4.5	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.5	
124-48-1	Dibromochloromethane	ND	4.5	
106-93-4	1,2-Dibromoethane (EDB)	ND	4.5	
95-50-1	1,2-Dichlorobenzene	ND	4.5	
541-73-1	1,3-Dichlorobenzene	ND	4.5	
106-46-7	1,4-Dichlorobenzene	ND	4.5	
75-71-8	Dichlorodifluoromethane	ND J	8.9	
75-34-3	1,1-Dichloroethane	ND	4.5	
107-06-2	1,2-Dichloroethane	ND	4.5	
75-35-4	1,1-Dichloroethene	ND	4.5	
156-59-2	cis-1,2-Dichloroethene	ND	4.5	
156-60-5	trans-1,2-Dichloroethene	ND	4.5	
78-87-5	1,2-Dichloropropane	ND	4.5	
10061-01-5	cis-1,3-Dichloropropene	ND	4.5	
10061-02-6	trans-1,3-Dichloropropene	ND	4.5	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	134	
100-41-4	Ethylbenzene	ND	4.5	
591-78-6	2-Hexanone	ND	44.7	
98-82-8	Isopropylbenzene (Cumene)	ND	4.5	
79-20-9	Methyl acetate	ND J	8.9	
108-87-2	Methylcyclohexane	ND	8.9	
75-09-2	Methylene Chloride	ND	17.9	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	44.7	
1634-04-4	Methyl-tert-butyl ether	ND	4.5	
100-42-5	Styrene	ND	4.5	
79-34-5	1,1,2,2-Tetrachloroethane	ND J	4.5	
127-18-4	Tetrachloroethene	ND	4.5	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 18.5362
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-10-2.5
Lab ID: 92199715010
Collected: 05/01/14 15:30
Received: 05/02/14 17:20
Analyzed: 05/06/14 18:45
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**2.3J**	4.5	
87-61-6	1,2,3-Trichlorobenzene	ND	4.5	
120-82-1	1,2,4-Trichlorobenzene	ND	4.5	
71-55-6	1,1,1-Trichloroethane	ND	4.5	
79-00-5	1,1,2-Trichloroethane	ND	4.5	
79-01-6	Trichloroethene	ND J	4.5	
75-69-4	Trichlorofluoromethane	ND	4.5	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	4.5	
75-01-4	Vinyl chloride	ND	8.9	
179601-23-1	m&p-Xylene	ND	8.9	
95-47-6	o-Xylene	ND	4.5	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 17.3987
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-12-2
Lab ID: 92199715012
Collected: 05/01/14 16:55
Received: 05/02/14 17:20
Analyzed: 05/06/14 00:10
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**12.1J**	103	
71-43-2	Benzene	ND	5.2	
74-97-5	Bromochloromethane	ND	5.2	
75-27-4	Bromodichloromethane	ND	5.2	
75-25-2	Bromoform	ND	5.2	
74-83-9	Bromomethane	ND	10.3	
78-93-3	2-Butanone (MEK)	ND	103	
75-15-0	Carbon disulfide	ND	10.3	
56-23-5	Carbon tetrachloride	ND	5.2	
108-90-7	Chlorobenzene	ND	5.2	
75-00-3	Chloroethane	ND	10.3	
67-66-3	Chloroform	ND	5.2	
74-87-3	Chloromethane	ND	10.3	
110-82-7	Cyclohexane	ND	5.2	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.2	
124-48-1	Dibromochloromethane	ND	5.2	
106-93-4	1,2-Dibromoethane (EDB)	ND	5.2	
95-50-1	1,2-Dichlorobenzene	ND	5.2	
541-73-1	1,3-Dichlorobenzene	ND	5.2	
106-46-7	1,4-Dichlorobenzene	ND	5.2	
75-71-8	Dichlorodifluoromethane	ND J	10.3	L3
75-34-3	1,1-Dichloroethane	ND	5.2	
107-06-2	1,2-Dichloroethane	ND	5.2	
75-35-4	1,1-Dichloroethene	ND	5.2	
156-59-2	cis-1,2-Dichloroethene	ND	5.2	
156-60-5	trans-1,2-Dichloroethene	ND	5.2	
78-87-5	1,2-Dichloropropane	ND	5.2	
10061-01-5	cis-1,3-Dichloropropene	ND	5.2	
10061-02-6	trans-1,3-Dichloropropene	ND	5.2	
123-91-1	1,4-Dioxane (p-Dioxane)	ND J	155	
100-41-4	Ethylbenzene	ND	5.2	
591-78-6	2-Hexanone	ND	51.6	
98-82-8	Isopropylbenzene (Cumene)	ND	5.2	
79-20-9	Methyl acetate	ND	10.3	
108-87-2	Methylcyclohexane	ND	10.3	
75-09-2	Methylene Chloride	ND	20.6	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	51.6	
1634-04-4	Methyl-tert-butyl ether	ND	5.2	
100-42-5	Styrene	ND	5.2	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.2	L2
127-18-4	Tetrachloroethene	ND	5.2	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 17.3987
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-12-2
Lab ID: 92199715012
Collected: 05/01/14 16:55
Received: 05/02/14 17:20
Analyzed: 05/06/14 00:10
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	5.2	
87-61-6	1,2,3-Trichlorobenzene	ND	5.2	
120-82-1	1,2,4-Trichlorobenzene	ND	5.2	
71-55-6	1,1,1-Trichloroethane	ND	5.2	
79-00-5	1,1,2-Trichloroethane	ND	5.2	
79-01-6	Trichloroethene	ND	5.2	L3
75-69-4	Trichlorofluoromethane	ND	5.2	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	5.2	
75-01-4	Vinyl chloride	ND	10.3	
179601-23-1	m&p-Xylene	ND	10.3	
95-47-6	o-Xylene	ND	5.2	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 15.6813
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-100-3
Lab ID: 92199715014
Collected: 05/01/14 17:30
Received: 05/02/14 17:20
Analyzed: 05/06/14 01:29
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**13.1J**	113	
71-43-2	Benzene	ND	5.6	
74-97-5	Bromochloromethane	ND	5.6	
75-27-4	Bromodichloromethane	ND	5.6	
75-25-2	Bromoform	ND	5.6	
74-83-9	Bromomethane	ND	11.3	
78-93-3	2-Butanone (MEK)	ND	113	
75-15-0	Carbon disulfide	ND	11.3	
56-23-5	Carbon tetrachloride	ND	5.6	
108-90-7	Chlorobenzene	ND	5.6	
75-00-3	Chloroethane	ND	11.3	
67-66-3	Chloroform	ND	5.6	
74-87-3	Chloromethane	ND	11.3	
110-82-7	Cyclohexane	ND	5.6	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.6	
124-48-1	Dibromochloromethane	ND	5.6	
106-93-4	1,2-Dibromoethane (EDB)	ND	5.6	
95-50-1	1,2-Dichlorobenzene	ND	5.6	
541-73-1	1,3-Dichlorobenzene	ND	5.6	
106-46-7	1,4-Dichlorobenzene	ND	5.6	
75-71-8	Dichlorodifluoromethane	ND J	11.3	L3
75-34-3	1,1-Dichloroethane	ND	5.6	
107-06-2	1,2-Dichloroethane	ND	5.6	
75-35-4	1,1-Dichloroethene	ND	5.6	
156-59-2	cis-1,2-Dichloroethene	ND	5.6	
156-60-5	trans-1,2-Dichloroethene	ND	5.6	
78-87-5	1,2-Dichloropropane	ND	5.6	
10061-01-5	cis-1,3-Dichloropropene	ND	5.6	
10061-02-6	trans-1,3-Dichloropropene	ND	5.6	
123-91-1	1,4-Dioxane (p-Dioxane)	ND J	169	
100-41-4	Ethylbenzene	ND	5.6	
591-78-6	2-Hexanone	ND	56.3	
98-82-8	Isopropylbenzene (Cumene)	ND	5.6	
79-20-9	Methyl acetate	ND	11.3	
108-87-2	Methylcyclohexane	ND	11.3	
75-09-2	Methylene Chloride	ND	22.5	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	56.3	
1634-04-4	Methyl-tert-butyl ether	ND	5.6	
100-42-5	Styrene	ND	5.6	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.6	L2
127-18-4	Tetrachloroethene	ND	5.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 15.6813
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-100-3
Lab ID: 92199715014
Collected: 05/01/14 17:30
Received: 05/02/14 17:20
Analyzed: 05/06/14 01:29
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	5.6	
87-61-6	1,2,3-Trichlorobenzene	ND	5.6	
120-82-1	1,2,4-Trichlorobenzene	ND	5.6	
71-55-6	1,1,1-Trichloroethane	ND	5.6	
79-00-5	1,1,2-Trichloroethane	ND	5.6	
79-01-6	Trichloroethene	ND	5.6	L3
75-69-4	Trichlorofluoromethane	ND	5.6	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	5.6	
75-01-4	Vinyl chloride	ND	11.3	
179601-23-1	m&p-Xylene	ND	11.3	
95-47-6	o-Xylene	ND	5.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 14.6584
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-101-2
Lab ID: 92199715020
Collected: 05/02/14 11:05
Received: 05/02/14 17:20
Analyzed: 05/06/14 02:29
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**9.2J**	75.1	
71-43-2	Benzene	ND	3.8	
74-97-5	Bromochloromethane	ND	3.8	
75-27-4	Bromodichloromethane	ND	3.8	
75-25-2	Bromoform	ND	3.8	
74-83-9	Bromomethane	ND	7.5	
78-93-3	2-Butanone (MEK)	ND	75.1	
75-15-0	Carbon disulfide	ND	7.5	
56-23-5	Carbon tetrachloride	ND	3.8	
108-90-7	Chlorobenzene	ND	3.8	
75-00-3	Chloroethane	ND	7.5	
67-66-3	Chloroform	ND	3.8	
74-87-3	Chloromethane	ND	7.5	
110-82-7	Cyclohexane	ND	3.8	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.8	
124-48-1	Dibromochloromethane	ND	3.8	
106-93-4	1,2-Dibromoethane (EDB)	ND	3.8	
95-50-1	1,2-Dichlorobenzene	ND	3.8	
541-73-1	1,3-Dichlorobenzene	ND	3.8	
106-46-7	1,4-Dichlorobenzene	ND	3.8	
75-71-8	Dichlorodifluoromethane	ND J	7.5	L3
75-34-3	1,1-Dichloroethane	ND	3.8	
107-06-2	1,2-Dichloroethane	ND	3.8	
75-35-4	1,1-Dichloroethene	ND	3.8	
156-59-2	cis-1,2-Dichloroethene	ND	3.8	
156-60-5	trans-1,2-Dichloroethene	ND	3.8	
78-87-5	1,2-Dichloropropane	ND	3.8	
10061-01-5	cis-1,3-Dichloropropene	ND	3.8	
10061-02-6	trans-1,3-Dichloropropene	ND	3.8	
123-91-1	1,4-Dioxane (p-Dioxane)	ND J	113	
100-41-4	Ethylbenzene	ND	3.8	
591-78-6	2-Hexanone	ND	37.6	
98-82-8	Isopropylbenzene (Cumene)	ND	3.8	
79-20-9	Methyl acetate	ND	7.5	
108-87-2	Methylcyclohexane	ND	7.5	
75-09-2	Methylene Chloride	ND	15.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	37.6	
1634-04-4	Methyl-tert-butyl ether	ND	3.8	
100-42-5	Styrene	ND	3.8	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.8	L2
127-18-4	Tetrachloroethene	ND	3.8	

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REPORT OF LABORATORY ANALYSIS

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9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 14.6584
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-101-2
Lab ID: 92199715020
Collected: 05/02/14 11:05
Received: 05/02/14 17:20
Analyzed: 05/06/14 02:29
Dilution Factor: 1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	3.8	
87-61-6	1,2,3-Trichlorobenzene	ND	3.8	
120-82-1	1,2,4-Trichlorobenzene	ND	3.8	
71-55-6	1,1,1-Trichloroethane	ND	3.8	
79-00-5	1,1,2-Trichloroethane	ND	3.8	
79-01-6	Trichloroethene	ND	3.8	L3
75-69-4	Trichlorofluoromethane	ND	3.8	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	3.8	
75-01-4	Vinyl chloride	ND	7.5	
179601-23-1	m&p-Xylene	ND	7.5	
95-47-6	o-Xylene	ND	3.8	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 16.621
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-4-2
Lab ID: 92199715022
Collected: 05/01/14 12:00
Received: 05/02/14 17:20
Analyzed: 05/06/14 03:09
Dilution Factor: 25

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	2180	
71-43-2	Benzene	ND	109	
74-97-5	Bromochloromethane	ND	109	
75-27-4	Bromodichloromethane	ND	109	
75-25-2	Bromoform	ND	109	
74-83-9	Bromomethane	ND	218	
78-93-3	2-Butanone (MEK)	ND	2180	
75-15-0	Carbon disulfide	ND	218	
56-23-5	Carbon tetrachloride	ND	109	
108-90-7	Chlorobenzene	ND	109	
75-00-3	Chloroethane	ND	218	
67-66-3	Chloroform	ND	109	
74-87-3	Chloromethane	ND	218	
110-82-7	Cyclohexane	ND	109	
96-12-8	1,2-Dibromo-3-chloropropane	ND	109	
124-48-1	Dibromochloromethane	ND	109	
106-93-4	1,2-Dibromoethane (EDB)	ND	109	
95-50-1	1,2-Dichlorobenzene	ND	109	
541-73-1	1,3-Dichlorobenzene	ND	109	
106-46-7	1,4-Dichlorobenzene	ND	109	
75-71-8	Dichlorodifluoromethane	ND J	218	L3
75-34-3	1,1-Dichloroethane	ND	109	
107-06-2	1,2-Dichloroethane	ND	109	
75-35-4	1,1-Dichloroethene	ND	109	
156-59-2	cis-1,2-Dichloroethene	**45.4J**	109	
156-60-5	trans-1,2-Dichloroethene	ND	109	
78-87-5	1,2-Dichloropropane	ND	109	
10061-01-5	cis-1,3-Dichloropropene	ND	109	
10061-02-6	trans-1,3-Dichloropropene	ND	109	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	3270	
100-41-4	Ethylbenzene	**44.0J**	109	
591-78-6	2-Hexanone	ND	1090	
98-82-8	Isopropylbenzene (Cumene)	**51.7J**	109	
79-20-9	Methyl acetate	ND	218	
108-87-2	Methylcyclohexane	ND	218	
75-09-2	Methylene Chloride	ND	436	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	1090	
1634-04-4	Methyl-tert-butyl ether	ND	109	
100-42-5	Styrene	ND	109	
79-34-5	1,1,2,2-Tetrachloroethane	ND J	109	L2
127-18-4	Tetrachloroethene	ND	109	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Solid
% Moisture: 16.621
Acode: 8260/5035A SC Volatile Org
Prep/Method: EPA 8260
Results reported on a "dry-weight" basis

Sample: SB-4-2
Lab ID: 92199715022
Collected: 05/01/14 12:00
Received: 05/02/14 17:20
Analyzed: 05/06/14 03:09
Dilution Factor: 25

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
87-61-6	1,2,3-Trichlorobenzene	ND	109	
120-82-1	1,2,4-Trichlorobenzene	ND	109	
71-55-6	1,1,1-Trichloroethane	ND	109	
79-00-5	1,1,2-Trichloroethane	ND	109	
79-01-6	Trichloroethene	ND J	109	L3
75-69-4	Trichlorofluoromethane	ND	109	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	109	
75-01-4	Vinyl chloride	ND	218	
179601-23-1	m&p-Xylene	**84.5J**	218	
95-47-6	o-Xylene	**79.6J**	109	

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May 20, 2014

Pam Groff
WSP
11190 Sunrise Valley Drive
Reston, VA 20191

RE: Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Dear Pam Groff:
Enclosed are the analytical results for sample(s) received by the laboratory on May 02, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

Samples were received outside of the recommended temperature range of 0-6 degrees Celsius. The samples were received from the field on ice, indicating the cooldown process had begun.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angela M. Baioni

Angela Baioni for
Kevin Godwin
kevin.godwin@pacelabs.com
Project Manager

Enclosures

cc: Erin Huntley, WSP

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CERTIFICATIONS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Green Bay Certification IDs
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 11888
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

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SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92199715001	**SB-1-2.5**	Solid	05/01/14 10:15	05/02/14 17:20
92199715002	**SB-2-2.5**	Solid	05/01/14 10:45	05/02/14 17:20
92199715003	**SB-3-2.5**	Solid	05/01/14 11:15	05/02/14 17:20
92199715004	**SB-4-1**	Solid	05/01/14 12:05	05/02/14 17:20
92199715005	**SB-5-2**	Solid	05/01/14 12:25	05/02/14 17:20
92199715006	**SB-6-2**	Solid	05/01/14 13:50	05/02/14 17:20
92199715007	**SB-7-2**	Solid	05/01/14 14:10	05/02/14 17:20
92199715008	**SB-8-1.5**	Solid	05/01/14 14:40	05/02/14 17:20
92199715009	**SB-9-2.5**	Solid	05/01/14 14:45	05/02/14 17:20
92199715010	**SB-10-2.5**	Solid	05/01/14 15:30	05/02/14 17:20
92199715011	**SB-11-3**	Solid	05/01/14 16:15	05/02/14 17:20
92199715012	**SB-12-2**	Solid	05/01/14 16:55	05/02/14 17:20
92199715013	**SB-13-3**	Solid	05/01/14 17:15	05/02/14 17:20
92199715014	**SB-100-3**	Solid	05/01/14 17:30	05/02/14 17:20
92199715015	**SB-14-2.5**	Solid	05/01/14 18:00	05/02/14 17:20
92199715018	**SB-16-0607**	Solid	05/02/14 09:30	05/02/14 17:20
92199715019	**SB-17-2**	Solid	05/02/14 11:00	05/02/14 17:20
92199715020	**SB-101-2**	Solid	05/02/14 11:05	05/02/14 17:20
92199715021	**SB-18-2.5**	Solid	05/02/14 11:15	05/02/14 17:20
92199715022	**SB-4-2**	Solid	05/01/14 12:00	05/02/14 17:20
92199715023	**SB-16-1415**	Solid	05/02/14 09:40	05/02/14 17:20
92199715024	**EB-050214**	Water	05/02/14 11:00	05/02/14 17:20
92199715025	**TB-050214**	Solid	05/02/14 00:00	05/02/14 17:20

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SAMPLE ANALYTE COUNT

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92199715001	**SB-1-2.5**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715002	**SB-2-2.5**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715003	**SB-3-2.5**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715004	**SB-4-1**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715005	**SB-5-2**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715006	**SB-6-2**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715007	**SB-7-2**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715008	**SB-8-1.5**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715009	**SB-9-2.5**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715010	**SB-10-2.5**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715011	**SB-11-3**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715012	**SB-12-2**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715013	**SB-13-3**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715014	**SB-100-3**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715015	**SB-14-2.5**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715018	**SB-16-0607**	ASTM D2974-87	AH	1	PASI-G
		EPA 9060	TJJ	6	PASI-G
92199715019	**SB-17-2**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715020	**SB-101-2**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715021	**SB-18-2.5**	EPA 8260	DLK	55	PASI-C

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SAMPLE ANALYTE COUNT

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		ASTM D2974-87	AES	1	PASI-C
92199715022	**SB-4-2**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C
92199715023	**SB-16-1415**	ASTM D2974-87	AH	1	PASI-G
		EPA 9060	TJJ	6	PASI-G
92199715024	**EB-050214**	EPA 8011	JMC	2	PASI-C
		EPA 8260	GAW	54	PASI-C
92199715025	**TB-050214**	EPA 8260	DLK	55	PASI-C

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SUMMARY OF DETECTION

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92199715001	**SB-1-2.5**					
EPA 8260	Toluene	27000	ug/kg	1220	05/06/14 17:26	
ASTM D2974-87	Percent Moisture	21.3	%	0.10	05/05/14 16:35	
92199715002	**SB-2-2.5**					
EPA 8260	Acetone	19.7J	ug/kg	72.8	05/05/14 18:13	
EPA 8260	Benzene	1.2J	ug/kg	3.6	05/05/14 18:13	
EPA 8260	Toluene	53.7	ug/kg	3.6	05/05/14 18:13	
ASTM D2974-87	Percent Moisture	7.1	%	0.10	05/05/14 16:35	
92199715003	**SB-3-2.5**					
EPA 8260	Acetone	13.7J	ug/kg	70.8	05/05/14 18:33	
EPA 8260	Ethylbenzene	2.5J	ug/kg	3.5	05/05/14 18:33	
EPA 8260	Toluene	957	ug/kg	380	05/06/14 17:45	
ASTM D2974-87	Percent Moisture	10.1	%	0.10	05/05/14 16:35	
92199715004	**SB-4-1**					
EPA 8260	cis-1,2-Dichloroethene	78.9J	ug/kg	90.6	05/05/14 21:32	
EPA 8260	Toluene	26200	ug/kg	1810	05/06/14 19:05	
EPA 8260	o-Xylene	48.2J	ug/kg	90.6	05/05/14 21:32	
ASTM D2974-87	Percent Moisture	11.7	%	0.10	05/05/14 16:35	
92199715005	**SB-5-2**					
EPA 8260	Toluene	37900	ug/kg	2330	05/06/14 19:25	
ASTM D2974-87	Percent Moisture	16.0	%	0.10	05/05/14 16:36	
92199715006	**SB-6-2**					
EPA 8260	Acetone	18.9J	ug/kg	86.7	05/05/14 22:11	
EPA 8260	Benzene	7.3	ug/kg	4.3	05/05/14 22:11	
EPA 8260	cis-1,2-Dichloroethene	1.3J	ug/kg	4.3	05/05/14 22:11	
EPA 8260	Ethylbenzene	1.6J	ug/kg	4.3	05/05/14 22:11	
EPA 8260	Isopropylbenzene (Cumene)	1.9J	ug/kg	4.3	05/05/14 22:11	
EPA 8260	Toluene	21.2	ug/kg	4.3	05/05/14 22:11	
ASTM D2974-87	Percent Moisture	14.2	%	0.10	05/05/14 16:36	
92199715007	**SB-7-2**					
EPA 8260	Acetone	1150J	ug/kg	4240	05/05/14 22:31	
EPA 8260	cis-1,2-Dichloroethene	464	ug/kg	212	05/05/14 22:31	
EPA 8260	Toluene	62800	ug/kg	2120	05/06/14 19:44	
ASTM D2974-87	Percent Moisture	14.9	%	0.10	05/05/14 16:36	
92199715008	**SB-8-1.5**					
EPA 8260	Benzene	4.0J	ug/kg	4.3	05/05/14 22:51	
EPA 8260	Ethylbenzene	2.0J	ug/kg	4.3	05/05/14 22:51	
EPA 8260	Toluene	8.4	ug/kg	4.3	05/05/14 22:51	
ASTM D2974-87	Percent Moisture	17.4	%	0.10	05/05/14 16:36	
92199715009	**SB-9-2.5**					
EPA 8260	Toluene	1620000	ug/kg	46800	05/06/14 20:04	
ASTM D2974-87	Percent Moisture	19.8	%	0.10	05/05/14 16:36	

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SUMMARY OF DETECTION

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92199715010	**SB-10-2.5**					
EPA 8260	Toluene	2.3J	ug/kg	4.5	05/06/14 18:45	
ASTM D2974-87	Percent Moisture	18.5	%	0.10	05/05/14 16:36	
92199715011	**SB-11-3**					
EPA 8260	Toluene	12.4	ug/kg	4.2	05/05/14 23:50	
ASTM D2974-87	Percent Moisture	18.6	%	0.10	05/05/14 16:36	
92199715012	**SB-12-2**					
EPA 8260	Acetone	12.1J	ug/kg	103	05/06/14 00:10	
ASTM D2974-87	Percent Moisture	17.4	%	0.10	05/05/14 16:36	
92199715013	**SB-13-3**					
EPA 8260	Acetone	14.4J	ug/kg	83.1	05/06/14 00:30	
EPA 8260	Benzene	1.7J	ug/kg	4.2	05/06/14 00:30	
ASTM D2974-87	Percent Moisture	15.9	%	0.10	05/05/14 16:37	
92199715014	**SB-100-3**					
EPA 8260	Acetone	13.1J	ug/kg	113	05/06/14 01:29	
ASTM D2974-87	Percent Moisture	15.7	%	0.10	05/05/14 16:37	
92199715015	**SB-14-2.5**					
EPA 8260	Acetone	24.6J	ug/kg	98.2	05/06/14 01:49	
EPA 8260	Benzene	4.2J	ug/kg	4.9	05/06/14 01:49	
ASTM D2974-87	Percent Moisture	14.8	%	0.10	05/05/14 16:16	
92199715018	**SB-16-0607**					
ASTM D2974-87	Percent Moisture	19.9	%	0.10	05/13/14 17:39	
EPA 9060	RSD%	3.9	%		05/09/14 11:57	
EPA 9060	Total Organic Carbon	1060	mg/kg	749	05/09/14 11:57	
EPA 9060	Total Organic Carbon	1040	mg/kg	749	05/09/14 12:03	
EPA 9060	Total Organic Carbon	1110	mg/kg	749	05/09/14 12:09	
EPA 9060	Total Organic Carbon	1130	mg/kg	749	05/09/14 12:15	
EPA 9060	Mean Total Organic Carbon	1090	mg/kg	749	05/09/14 11:57	
92199715019	**SB-17-2**					
EPA 8260	Acetone	10.3J	ug/kg	76.2	05/06/14 02:09	
ASTM D2974-87	Percent Moisture	13.7	%	0.10	05/05/14 16:37	
92199715020	**SB-101-2**					
EPA 8260	Acetone	9.2J	ug/kg	75.1	05/06/14 02:29	
ASTM D2974-87	Percent Moisture	14.7	%	0.10	05/05/14 16:37	
92199715021	**SB-18-2.5**					
ASTM D2974-87	Percent Moisture	13.1	%	0.10	05/05/14 16:37	
92199715022	**SB-4-2**					
EPA 8260	cis-1,2-Dichloroethene	45.4J	ug/kg	109	05/06/14 03:09	
EPA 8260	Ethylbenzene	44.0J	ug/kg	109	05/06/14 03:09	
EPA 8260	Isopropylbenzene (Cumene)	51.7J	ug/kg	109	05/06/14 03:09	
EPA 8260	Toluene	67200	ug/kg	2180	05/06/14 20:24	
EPA 8260	m&p-Xylene	84.5J	ug/kg	218	05/06/14 03:09	

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SUMMARY OF DETECTION

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92199715022	**SB-4-2**					
EPA 8260	o-Xylene	79.6J	ug/kg	109	05/06/14 03:09	
ASTM D2974-87	Percent Moisture	16.6	%	0.10	05/05/14 16:37	
92199715023	**SB-16-1415**					
ASTM D2974-87	Percent Moisture	20.3	%	0.10	05/13/14 17:39	
EPA 9060	RSD%	10.4	%		05/09/14 12:21	
EPA 9060	Total Organic Carbon	2140	mg/kg	753	05/09/14 12:21	
EPA 9060	Total Organic Carbon	2310	mg/kg	753	05/09/14 12:26	
EPA 9060	Total Organic Carbon	2010	mg/kg	753	05/09/14 12:33	
EPA 9060	Total Organic Carbon	1810	mg/kg	753	05/09/14 12:39	
EPA 9060	Mean Total Organic Carbon	2070	mg/kg	753	05/09/14 12:21	
92199715024	**EB-050214**					
EPA 8260	Toluene	0.45J	ug/L	1.0	05/09/14 17:18	

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PROJECT NARRATIVE

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Method: **EPA 8011**
Description: 8011 GCS EDB and DBCP
Client: WSP Environmental Strategies
Date: May 20, 2014

General Information:
1 sample was analyzed for EPA 8011. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 8011 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Method: **EPA 8260**
Description: 8260 MSV Low Level SC
Client: WSP Environmental Strategies
Date: May 20, 2014

General Information:
1 sample was analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: MSV/26766

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 1195856)
  - Bromomethane
  - Chloroethane

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Method: **EPA 8260**
Description: 8260/5035A SC Volatile Org
Client: WSP Environmental Strategies
Date: May 20, 2014

General Information:
20 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: MSV/26686

S0: Surrogate recovery outside laboratory control limits.
- SB-3-2.5 (Lab ID: 92199715003)
  - 1,2-Dichloroethane-d4 (S)

QC Batch: MSV/26690

S0: Surrogate recovery outside laboratory control limits.
- MS (Lab ID: 1191280)
  - 1,2-Dichloroethane-d4 (S)
- MSD (Lab ID: 1191281)
  - 1,2-Dichloroethane-d4 (S)
- SB-11-3 (Lab ID: 92199715011)
  - 1,2-Dichloroethane-d4 (S)
- SB-8-1.5 (Lab ID: 92199715008)
  - 1,2-Dichloroethane-d4 (S)

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
- TB-050214 (Lab ID: 92199715025)
  - 1,2-Dichloroethane-d4 (S)

QC Batch: MSV/26704

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
- SB-10-2.5 (Lab ID: 92199715010)
  - 1,2-Dichloroethane-d4 (S)

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PROJECT NARRATIVE

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Method: **EPA 8260**
Description: 8260/5035A SC Volatile Org
Client: WSP Environmental Strategies
Date: May 20, 2014

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: MSV/26686

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- LCS (Lab ID: 1191199)
  - Dichlorodifluoromethane

QC Batch: MSV/26690

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 1191279)
  - 1,1,2,2-Tetrachloroethane
  - Dichlorodifluoromethane
  - Trichloroethene

QC Batch: MSV/26704

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 1191977)
  - 1,1,2,2-Tetrachloroethane
  - Dichlorodifluoromethane
  - Trichloroethene

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/26690

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92199715013

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 1191280)
  - Dichlorodifluoromethane
  - Methyl acetate
- MSD (Lab ID: 1191281)
  - Dichlorodifluoromethane
  - Methyl acetate

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1191280)
  - 1,1,2-Trichloroethane
  - 1,2,3-Trichlorobenzene
  - 1,2,4-Trichlorobenzene
  - 1,2-Dibromo-3-chloropropane
  - 1,2-Dichloroethane
  - 1,3-Dichlorobenzene

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PROJECT NARRATIVE

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Method: **EPA 8260**
Description: 8260/5035A SC Volatile Org
Client: WSP Environmental Strategies
Date: May 20, 2014

QC Batch: MSV/26690

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92199715013

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- 1,4-Dioxane (p-Dioxane)
- 2-Butanone (MEK)
- 2-Hexanone
- 4-Methyl-2-pentanone (MIBK)
- Bromodichloromethane
- Dibromochloromethane
- Methyl-tert-butyl ether

- MSD (Lab ID: 1191281)
  - 1,2,3-Trichlorobenzene
  - 1,2,4-Trichlorobenzene
  - 1,2-Dichlorobenzene
  - 1,3-Dichlorobenzene
  - 1,4-Dichlorobenzene
  - 2-Butanone (MEK)
  - 4-Methyl-2-pentanone (MIBK)
  - Chlorobenzene
  - Methyl-tert-butyl ether
  - Styrene

R1: RPD value was outside control limits.

- MSD (Lab ID: 1191281)
  - 1,1,2,2-Tetrachloroethane
  - 1,1,2-Trichloroethane
  - 1,2,3-Trichlorobenzene
  - 1,2,4-Trichlorobenzene
  - 1,2-Dibromo-3-chloropropane
  - 1,2-Dibromoethane (EDB)
  - 1,2-Dichlorobenzene
  - 1,3-Dichlorobenzene
  - 1,4-Dichlorobenzene
  - 1,4-Dioxane (p-Dioxane)
  - 2-Hexanone
  - Bromoform
  - Chlorobenzene
  - Dibromochloromethane
  - Styrene
  - m&p-Xylene
  - o-Xylene
  - trans-1,3-Dichloropropene

Additional Comments:

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PROJECT NARRATIVE

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Method: **EPA 9060**
Description: Total Organic Carbon Quad
Client: WSP Environmental Strategies
Date: May 20, 2014

General Information:
2 samples were analyzed for EPA 9060. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-1-2.5
		Lab ID:	92199715001
% Moisture:	21.2668	Collected:	05/01/14 10:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 17:54
Results reported on a "dry-weight" basis		Dilution Factor:	25

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	2450	
71-43-2	Benzene	ND	122	
74-97-5	Bromochloromethane	ND	122	
75-27-4	Bromodichloromethane	ND	122	
75-25-2	Bromoform	ND	122	
74-83-9	Bromomethane	ND	245	
78-93-3	2-Butanone (MEK)	ND	2450	
75-15-0	Carbon disulfide	ND	245	
56-23-5	Carbon tetrachloride	ND	122	
108-90-7	Chlorobenzene	ND	122	
75-00-3	Chloroethane	ND	245	
67-66-3	Chloroform	ND	122	
74-87-3	Chloromethane	ND	245	
110-82-7	Cyclohexane	ND	122	
96-12-8	1,2-Dibromo-3-chloropropane	ND	122	
124-48-1	Dibromochloromethane	ND	122	
106-93-4	1,2-Dibromoethane (EDB)	ND	122	
95-50-1	1,2-Dichlorobenzene	ND	122	
541-73-1	1,3-Dichlorobenzene	ND	122	
106-46-7	1,4-Dichlorobenzene	ND	122	
75-71-8	Dichlorodifluoromethane	ND	245	
75-34-3	1,1-Dichloroethane	ND	122	
107-06-2	1,2-Dichloroethane	ND	122	
75-35-4	1,1-Dichloroethene	ND	122	
156-59-2	cis-1,2-Dichloroethene	ND	122	
156-60-5	trans-1,2-Dichloroethene	ND	122	
78-87-5	1,2-Dichloropropane	ND	122	
10061-01-5	cis-1,3-Dichloropropene	ND	122	
10061-02-6	trans-1,3-Dichloropropene	ND	122	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	3670	
100-41-4	Ethylbenzene	ND	122	
591-78-6	2-Hexanone	ND	1220	
98-82-8	Isopropylbenzene (Cumene)	ND	122	
79-20-9	Methyl acetate	ND	245	
108-87-2	Methylcyclohexane	ND	245	
75-09-2	Methylene Chloride	ND	489	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	1220	
1634-04-4	Methyl-tert-butyl ether	ND	122	
100-42-5	Styrene	ND	122	
79-34-5	1,1,2,2-Tetrachloroethane	ND	122	
127-18-4	Tetrachloroethene	ND	122	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-1-2.5
		Lab ID:	92199715001
% Moisture:	21.2668	Collected:	05/01/14 10:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 17:54
Results reported on a "dry-weight" basis		Dilution Factor:	25

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
87-61-6	1,2,3-Trichlorobenzene	ND	122	
120-82-1	1,2,4-Trichlorobenzene	ND	122	
71-55-6	1,1,1-Trichloroethane	ND	122	
79-00-5	1,1,2-Trichloroethane	ND	122	
79-01-6	Trichloroethene	ND	122	
75-69-4	Trichlorofluoromethane	ND	122	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	122	
75-01-4	Vinyl chloride	ND	245	
179601-23-1	m&p-Xylene	ND	245	
95-47-6	o-Xylene	ND	122	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-1-2.5
		Lab ID:	92199715001
% Moisture:	21.2668	Collected:	05/01/14 10:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 17:26
Results reported on a "dry-weight" basis		Dilution Factor:	250

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**27000**	1220	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-1-2.5
		Lab ID:	92199715001
% Moisture:		Collected:	05/01/14 10:15
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:35
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**21.3**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-2-2.5
		Lab ID:	92199715002
% Moisture:	7.1422	Collected:	05/01/14 10:45
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 18:13
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**19.7J**	72.8	
71-43-2	Benzene	**1.2J**	3.6	
74-97-5	Bromochloromethane	ND	3.6	
75-27-4	Bromodichloromethane	ND	3.6	
75-25-2	Bromoform	ND	3.6	
74-83-9	Bromomethane	ND	7.3	
78-93-3	2-Butanone (MEK)	ND	72.8	
75-15-0	Carbon disulfide	ND	7.3	
56-23-5	Carbon tetrachloride	ND	3.6	
108-90-7	Chlorobenzene	ND	3.6	
75-00-3	Chloroethane	ND	7.3	
67-66-3	Chloroform	ND	3.6	
74-87-3	Chloromethane	ND	7.3	
110-82-7	Cyclohexane	ND	3.6	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.6	
124-48-1	Dibromochloromethane	ND	3.6	
106-93-4	1,2-Dibromoethane (EDB)	ND	3.6	
95-50-1	1,2-Dichlorobenzene	ND	3.6	
541-73-1	1,3-Dichlorobenzene	ND	3.6	
106-46-7	1,4-Dichlorobenzene	ND	3.6	
75-71-8	Dichlorodifluoromethane	ND	7.3	
75-34-3	1,1-Dichloroethane	ND	3.6	
107-06-2	1,2-Dichloroethane	ND	3.6	
75-35-4	1,1-Dichloroethene	ND	3.6	
156-59-2	cis-1,2-Dichloroethene	ND	3.6	
156-60-5	trans-1,2-Dichloroethene	ND	3.6	
78-87-5	1,2-Dichloropropane	ND	3.6	
10061-01-5	cis-1,3-Dichloropropene	ND	3.6	
10061-02-6	trans-1,3-Dichloropropene	ND	3.6	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	109	
100-41-4	Ethylbenzene	ND	3.6	
591-78-6	2-Hexanone	ND	36.4	
98-82-8	Isopropylbenzene (Cumene)	ND	3.6	
79-20-9	Methyl acetate	ND	7.3	
108-87-2	Methylcyclohexane	ND	7.3	
75-09-2	Methylene Chloride	ND	14.6	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	36.4	
1634-04-4	Methyl-tert-butyl ether	ND	3.6	
100-42-5	Styrene	ND	3.6	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.6	
127-18-4	Tetrachloroethene	ND	3.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-2-2.5
		Lab ID:	92199715002
% Moisture:	7.1422	Collected:	05/01/14 10:45
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 18:13
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**53.7**	3.6	
87-61-6	1,2,3-Trichlorobenzene	ND	3.6	
120-82-1	1,2,4-Trichlorobenzene	ND	3.6	
71-55-6	1,1,1-Trichloroethane	ND	3.6	
79-00-5	1,1,2-Trichloroethane	ND	3.6	
79-01-6	Trichloroethene	ND	3.6	
75-69-4	Trichlorofluoromethane	ND	3.6	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	3.6	
75-01-4	Vinyl chloride	ND	7.3	
179601-23-1	m&p-Xylene	ND	7.3	
95-47-6	o-Xylene	ND	3.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-2-2.5
		Lab ID:	92199715002
% Moisture:		Collected:	05/01/14 10:45
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:35
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**7.1**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-3-2.5
		Lab ID:	92199715003
% Moisture:	10.1031	Collected:	05/01/14 11:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 18:33
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**13.7J**	70.8	
71-43-2	Benzene	ND	3.5	
74-97-5	Bromochloromethane	ND	3.5	
75-27-4	Bromodichloromethane	ND	3.5	
75-25-2	Bromoform	ND	3.5	
74-83-9	Bromomethane	ND	7.1	
78-93-3	2-Butanone (MEK)	ND	70.8	
75-15-0	Carbon disulfide	ND	7.1	
56-23-5	Carbon tetrachloride	ND	3.5	
108-90-7	Chlorobenzene	ND	3.5	
75-00-3	Chloroethane	ND	7.1	
67-66-3	Chloroform	ND	3.5	
74-87-3	Chloromethane	ND	7.1	
110-82-7	Cyclohexane	ND	3.5	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.5	
124-48-1	Dibromochloromethane	ND	3.5	
106-93-4	1,2-Dibromoethane (EDB)	ND	3.5	
95-50-1	1,2-Dichlorobenzene	ND	3.5	
541-73-1	1,3-Dichlorobenzene	ND	3.5	
106-46-7	1,4-Dichlorobenzene	ND	3.5	
75-71-8	Dichlorodifluoromethane	ND	7.1	
75-34-3	1,1-Dichloroethane	ND	3.5	
107-06-2	1,2-Dichloroethane	ND	3.5	
75-35-4	1,1-Dichloroethene	ND	3.5	
156-59-2	cis-1,2-Dichloroethene	ND	3.5	
156-60-5	trans-1,2-Dichloroethene	ND	3.5	
78-87-5	1,2-Dichloropropane	ND	3.5	
10061-01-5	cis-1,3-Dichloropropene	ND	3.5	
10061-02-6	trans-1,3-Dichloropropene	ND	3.5	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	106	
100-41-4	Ethylbenzene	**2.5J**	3.5	
591-78-6	2-Hexanone	ND	35.4	
98-82-8	Isopropylbenzene (Cumene)	ND	3.5	
79-20-9	Methyl acetate	ND	7.1	
108-87-2	Methylcyclohexane	ND	7.1	
75-09-2	Methylene Chloride	ND	14.2	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	35.4	
1634-04-4	Methyl-tert-butyl ether	ND	3.5	
100-42-5	Styrene	ND	3.5	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.5	
127-18-4	Tetrachloroethene	ND	3.5	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-3-2.5
		Lab ID:	92199715003
% Moisture:	10.1031	Collected:	05/01/14 11:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 18:33
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
87-61-6	1,2,3-Trichlorobenzene	ND	3.5	
120-82-1	1,2,4-Trichlorobenzene	ND	3.5	
71-55-6	1,1,1-Trichloroethane	ND	3.5	
79-00-5	1,1,2-Trichloroethane	ND	3.5	
79-01-6	Trichloroethene	ND	3.5	
75-69-4	Trichlorofluoromethane	ND	3.5	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	3.5	
75-01-4	Vinyl chloride	ND	7.1	
179601-23-1	m&p-Xylene	ND	7.1	
95-47-6	o-Xylene	ND	3.5	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-3-2.5
		Lab ID:	92199715003
% Moisture:	10.1031	Collected:	05/01/14 11:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 17:45
Results reported on a "dry-weight" basis		Dilution Factor:	100

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**957**	380	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-3-2.5
		Lab ID:	92199715003
% Moisture:		Collected:	05/01/14 11:15
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:35
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**10.1**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-4-1
		Lab ID:	92199715004
% Moisture:	11.715	Collected:	05/01/14 12:05
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 21:32
Results reported on a "dry-weight" basis		Dilution Factor:	25

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	1810	
71-43-2	Benzene	ND	90.6	
74-97-5	Bromochloromethane	ND	90.6	
75-27-4	Bromodichloromethane	ND	90.6	
75-25-2	Bromoform	ND	90.6	
74-83-9	Bromomethane	ND	181	
78-93-3	2-Butanone (MEK)	ND	1810	
75-15-0	Carbon disulfide	ND	181	
56-23-5	Carbon tetrachloride	ND	90.6	
108-90-7	Chlorobenzene	ND	90.6	
75-00-3	Chloroethane	ND	181	
67-66-3	Chloroform	ND	90.6	
74-87-3	Chloromethane	ND	181	
110-82-7	Cyclohexane	ND	90.6	
96-12-8	1,2-Dibromo-3-chloropropane	ND	90.6	
124-48-1	Dibromochloromethane	ND	90.6	
106-93-4	1,2-Dibromoethane (EDB)	ND	90.6	
95-50-1	1,2-Dichlorobenzene	ND	90.6	
541-73-1	1,3-Dichlorobenzene	ND	90.6	
106-46-7	1,4-Dichlorobenzene	ND	90.6	
75-71-8	Dichlorodifluoromethane	ND	181	L3
75-34-3	1,1-Dichloroethane	ND	90.6	
107-06-2	1,2-Dichloroethane	ND	90.6	
75-35-4	1,1-Dichloroethene	ND	90.6	
156-59-2	cis-1,2-Dichloroethene	**78.9J**	90.6	
156-60-5	trans-1,2-Dichloroethene	ND	90.6	
78-87-5	1,2-Dichloropropane	ND	90.6	
10061-01-5	cis-1,3-Dichloropropene	ND	90.6	
10061-02-6	trans-1,3-Dichloropropene	ND	90.6	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	2720	
100-41-4	Ethylbenzene	ND	90.6	
591-78-6	2-Hexanone	ND	906	
98-82-8	Isopropylbenzene (Cumene)	ND	90.6	
79-20-9	Methyl acetate	ND	181	
108-87-2	Methylcyclohexane	ND	181	
75-09-2	Methylene Chloride	ND	363	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	906	
1634-04-4	Methyl-tert-butyl ether	ND	90.6	
100-42-5	Styrene	ND	90.6	
79-34-5	1,1,2,2-Tetrachloroethane	ND	90.6	L2
127-18-4	Tetrachloroethene	ND	90.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-4-1
		Lab ID:	92199715004
% Moisture:	11.715	Collected:	05/01/14 12:05
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 21:32
Results reported on a "dry-weight" basis		Dilution Factor:	25

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
87-61-6	1,2,3-Trichlorobenzene	ND	90.6	
120-82-1	1,2,4-Trichlorobenzene	ND	90.6	
71-55-6	1,1,1-Trichloroethane	ND	90.6	
79-00-5	1,1,2-Trichloroethane	ND	90.6	
79-01-6	Trichloroethene	ND	90.6	L3
75-69-4	Trichlorofluoromethane	ND	90.6	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	90.6	
75-01-4	Vinyl chloride	ND	181	
179601-23-1	m&p-Xylene	ND	181	
95-47-6	o-Xylene	**48.2J**	90.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-4-1
		Lab ID:	92199715004
% Moisture:	11.715	Collected:	05/01/14 12:05
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 19:05
Results reported on a "dry-weight" basis		Dilution Factor:	500

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**26200**	1810	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-4-1
		Lab ID:	92199715004
% Moisture:		Collected:	05/01/14 12:05
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:35
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**11.7**	0.10	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-5-2
		Lab ID:	92199715005
% Moisture:	16.0287	Collected:	05/01/14 12:25
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 21:51
Results reported on a "dry-weight" basis		Dilution Factor:	50

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	4660	
71-43-2	Benzene	ND	233	
74-97-5	Bromochloromethane	ND	233	
75-27-4	Bromodichloromethane	ND	233	
75-25-2	Bromoform	ND	233	
74-83-9	Bromomethane	ND	466	
78-93-3	2-Butanone (MEK)	ND	4660	
75-15-0	Carbon disulfide	ND	466	
56-23-5	Carbon tetrachloride	ND	233	
108-90-7	Chlorobenzene	ND	233	
75-00-3	Chloroethane	ND	466	
67-66-3	Chloroform	ND	233	
74-87-3	Chloromethane	ND	466	
110-82-7	Cyclohexane	ND	233	
96-12-8	1,2-Dibromo-3-chloropropane	ND	233	
124-48-1	Dibromochloromethane	ND	233	
106-93-4	1,2-Dibromoethane (EDB)	ND	233	
95-50-1	1,2-Dichlorobenzene	ND	233	
541-73-1	1,3-Dichlorobenzene	ND	233	
106-46-7	1,4-Dichlorobenzene	ND	233	
75-71-8	Dichlorodifluoromethane	ND	466	L3
75-34-3	1,1-Dichloroethane	ND	233	
107-06-2	1,2-Dichloroethane	ND	233	
75-35-4	1,1-Dichloroethene	ND	233	
156-59-2	cis-1,2-Dichloroethene	ND	233	
156-60-5	trans-1,2-Dichloroethene	ND	233	
78-87-5	1,2-Dichloropropane	ND	233	
10061-01-5	cis-1,3-Dichloropropene	ND	233	
10061-02-6	trans-1,3-Dichloropropene	ND	233	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	6990	
100-41-4	Ethylbenzene	ND	233	
591-78-6	2-Hexanone	ND	2330	
98-82-8	Isopropylbenzene (Cumene)	ND	233	
79-20-9	Methyl acetate	ND	466	
108-87-2	Methylcyclohexane	ND	466	
75-09-2	Methylene Chloride	ND	932	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	2330	
1634-04-4	Methyl-tert-butyl ether	ND	233	
100-42-5	Styrene	ND	233	
79-34-5	1,1,2,2-Tetrachloroethane	ND	233	L2
127-18-4	Tetrachloroethene	ND	233	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-5-2
		Lab ID:	92199715005
% Moisture:	16.0287	Collected:	05/01/14 12:25
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 21:51
Results reported on a "dry-weight" basis		Dilution Factor:	50

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
87-61-6	1,2,3-Trichlorobenzene	ND	233	
120-82-1	1,2,4-Trichlorobenzene	ND	233	
71-55-6	1,1,1-Trichloroethane	ND	233	
79-00-5	1,1,2-Trichloroethane	ND	233	
79-01-6	Trichloroethene	ND	233	L3
75-69-4	Trichlorofluoromethane	ND	233	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	233	
75-01-4	Vinyl chloride	ND	466	
179601-23-1	m&p-Xylene	ND	466	
95-47-6	o-Xylene	ND	233	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-5-2
		Lab ID:	92199715005
% Moisture:	16.0287	Collected:	05/01/14 12:25
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 19:25
Results reported on a "dry-weight" basis		Dilution Factor:	500

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**37900**	2330	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-5-2
		Lab ID:	92199715005
% Moisture:		Collected:	05/01/14 12:25
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:36
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**16.0**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-6-2
		Lab ID:	92199715006
% Moisture:	14.2029	Collected:	05/01/14 13:50
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 22:11
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**18.9J**	86.7	
71-43-2	Benzene	**7.3**	4.3	
74-97-5	Bromochloromethane	ND	4.3	
75-27-4	Bromodichloromethane	ND	4.3	
75-25-2	Bromoform	ND	4.3	
74-83-9	Bromomethane	ND	8.7	
78-93-3	2-Butanone (MEK)	ND	86.7	
75-15-0	Carbon disulfide	ND	8.7	
56-23-5	Carbon tetrachloride	ND	4.3	
108-90-7	Chlorobenzene	ND	4.3	
75-00-3	Chloroethane	ND	8.7	
67-66-3	Chloroform	ND	4.3	
74-87-3	Chloromethane	ND	8.7	
110-82-7	Cyclohexane	ND	4.3	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.3	
124-48-1	Dibromochloromethane	ND	4.3	
106-93-4	1,2-Dibromoethane (EDB)	ND	4.3	
95-50-1	1,2-Dichlorobenzene	ND	4.3	
541-73-1	1,3-Dichlorobenzene	ND	4.3	
106-46-7	1,4-Dichlorobenzene	ND	4.3	
75-71-8	Dichlorodifluoromethane	ND	8.7	L3
75-34-3	1,1-Dichloroethane	ND	4.3	
107-06-2	1,2-Dichloroethane	ND	4.3	
75-35-4	1,1-Dichloroethene	ND	4.3	
156-59-2	cis-1,2-Dichloroethene	**1.3J**	4.3	
156-60-5	trans-1,2-Dichloroethene	ND	4.3	
78-87-5	1,2-Dichloropropane	ND	4.3	
10061-01-5	cis-1,3-Dichloropropene	ND	4.3	
10061-02-6	trans-1,3-Dichloropropene	ND	4.3	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	130	
100-41-4	Ethylbenzene	**1.6J**	4.3	
591-78-6	2-Hexanone	ND	43.4	
98-82-8	Isopropylbenzene (Cumene)	**1.9J**	4.3	
79-20-9	Methyl acetate	ND	8.7	
108-87-2	Methylcyclohexane	ND	8.7	
75-09-2	Methylene Chloride	ND	17.3	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	43.4	
1634-04-4	Methyl-tert-butyl ether	ND	4.3	
100-42-5	Styrene	ND	4.3	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.3	L2
127-18-4	Tetrachloroethene	ND	4.3	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-6-2
		Lab ID:	92199715006
% Moisture:	14.2029	Collected:	05/01/14 13:50
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 22:11
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**21.2**	4.3	
87-61-6	1,2,3-Trichlorobenzene	ND	4.3	
120-82-1	1,2,4-Trichlorobenzene	ND	4.3	
71-55-6	1,1,1-Trichloroethane	ND	4.3	
79-00-5	1,1,2-Trichloroethane	ND	4.3	
79-01-6	Trichloroethene	ND	4.3	L3
75-69-4	Trichlorofluoromethane	ND	4.3	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	4.3	
75-01-4	Vinyl chloride	ND	8.7	
179601-23-1	m&p-Xylene	ND	8.7	
95-47-6	o-Xylene	ND	4.3	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-6-2
		Lab ID:	92199715006
% Moisture:		Collected:	05/01/14 13:50
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:36
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**14.2**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-7-2
		Lab ID:	92199715007
% Moisture:	14.9484	Collected:	05/01/14 14:10
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 22:31
Results reported on a "dry-weight" basis		Dilution Factor:	50

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**1150J**	4240	
71-43-2	Benzene	ND	212	
74-97-5	Bromochloromethane	ND	212	
75-27-4	Bromodichloromethane	ND	212	
75-25-2	Bromoform	ND	212	
74-83-9	Bromomethane	ND	424	
78-93-3	2-Butanone (MEK)	ND	4240	
75-15-0	Carbon disulfide	ND	424	
56-23-5	Carbon tetrachloride	ND	212	
108-90-7	Chlorobenzene	ND	212	
75-00-3	Chloroethane	ND	424	
67-66-3	Chloroform	ND	212	
74-87-3	Chloromethane	ND	424	
110-82-7	Cyclohexane	ND	212	
96-12-8	1,2-Dibromo-3-chloropropane	ND	212	
124-48-1	Dibromochloromethane	ND	212	
106-93-4	1,2-Dibromoethane (EDB)	ND	212	
95-50-1	1,2-Dichlorobenzene	ND	212	
541-73-1	1,3-Dichlorobenzene	ND	212	
106-46-7	1,4-Dichlorobenzene	ND	212	
75-71-8	Dichlorodifluoromethane	ND	424	L3
75-34-3	1,1-Dichloroethane	ND	212	
107-06-2	1,2-Dichloroethane	ND	212	
75-35-4	1,1-Dichloroethene	ND	212	
156-59-2	cis-1,2-Dichloroethene	**464**	212	
156-60-5	trans-1,2-Dichloroethene	ND	212	
78-87-5	1,2-Dichloropropane	ND	212	
10061-01-5	cis-1,3-Dichloropropene	ND	212	
10061-02-6	trans-1,3-Dichloropropene	ND	212	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	6350	
100-41-4	Ethylbenzene	ND	212	
591-78-6	2-Hexanone	ND	2120	
98-82-8	Isopropylbenzene (Cumene)	ND	212	
79-20-9	Methyl acetate	ND	424	
108-87-2	Methylcyclohexane	ND	424	
75-09-2	Methylene Chloride	ND	847	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	2120	
1634-04-4	Methyl-tert-butyl ether	ND	212	
100-42-5	Styrene	ND	212	
79-34-5	1,1,2,2-Tetrachloroethane	ND	212	L2
127-18-4	Tetrachloroethene	ND	212	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-7-2
		Lab ID:	92199715007
% Moisture:	14.9484	Collected:	05/01/14 14:10
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 22:31
Results reported on a "dry-weight" basis		Dilution Factor:	50

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
87-61-6	1,2,3-Trichlorobenzene	ND	212	
120-82-1	1,2,4-Trichlorobenzene	ND	212	
71-55-6	1,1,1-Trichloroethane	ND	212	
79-00-5	1,1,2-Trichloroethane	ND	212	
79-01-6	Trichloroethene	ND	212	L3
75-69-4	Trichlorofluoromethane	ND	212	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	212	
75-01-4	Vinyl chloride	ND	424	
179601-23-1	m&p-Xylene	ND	424	
95-47-6	o-Xylene	ND	212	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-7-2
		Lab ID:	92199715007
% Moisture:	14.9484	Collected:	05/01/14 14:10
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 19:44
Results reported on a "dry-weight" basis		Dilution Factor:	500

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**62800**	2120	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-7-2
		Lab ID:	92199715007
% Moisture:		Collected:	05/01/14 14:10
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:36
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**14.9**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-8-1.5
		Lab ID:	92199715008
% Moisture:	17.4424	Collected:	05/01/14 14:40
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 22:51
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	85.2	
71-43-2	Benzene	**4.0J**	4.3	
74-97-5	Bromochloromethane	ND	4.3	
75-27-4	Bromodichloromethane	ND	4.3	
75-25-2	Bromoform	ND	4.3	
74-83-9	Bromomethane	ND	8.5	
78-93-3	2-Butanone (MEK)	ND	85.2	
75-15-0	Carbon disulfide	ND	8.5	
56-23-5	Carbon tetrachloride	ND	4.3	
108-90-7	Chlorobenzene	ND	4.3	
75-00-3	Chloroethane	ND	8.5	
67-66-3	Chloroform	ND	4.3	
74-87-3	Chloromethane	ND	8.5	
110-82-7	Cyclohexane	ND	4.3	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.3	
124-48-1	Dibromochloromethane	ND	4.3	
106-93-4	1,2-Dibromoethane (EDB)	ND	4.3	
95-50-1	1,2-Dichlorobenzene	ND	4.3	
541-73-1	1,3-Dichlorobenzene	ND	4.3	
106-46-7	1,4-Dichlorobenzene	ND	4.3	
75-71-8	Dichlorodifluoromethane	ND	8.5	L3
75-34-3	1,1-Dichloroethane	ND	4.3	
107-06-2	1,2-Dichloroethane	ND	4.3	
75-35-4	1,1-Dichloroethene	ND	4.3	
156-59-2	cis-1,2-Dichloroethene	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	ND	4.3	
78-87-5	1,2-Dichloropropane	ND	4.3	
10061-01-5	cis-1,3-Dichloropropene	ND	4.3	
10061-02-6	trans-1,3-Dichloropropene	ND	4.3	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	128	
100-41-4	Ethylbenzene	**2.0J**	4.3	
591-78-6	2-Hexanone	ND	42.6	
98-82-8	Isopropylbenzene (Cumene)	ND	4.3	
79-20-9	Methyl acetate	ND	8.5	
108-87-2	Methylcyclohexane	ND	8.5	
75-09-2	Methylene Chloride	ND	17.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	42.6	
1634-04-4	Methyl-tert-butyl ether	ND	4.3	
100-42-5	Styrene	ND	4.3	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.3	L2
127-18-4	Tetrachloroethene	ND	4.3	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-8-1.5
		Lab ID:	92199715008
% Moisture:	17.4424	Collected:	05/01/14 14:40
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 22:51
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**8.4**	4.3	
87-61-6	1,2,3-Trichlorobenzene	ND	4.3	
120-82-1	1,2,4-Trichlorobenzene	ND	4.3	
71-55-6	1,1,1-Trichloroethane	ND	4.3	
79-00-5	1,1,2-Trichloroethane	ND	4.3	
79-01-6	Trichloroethene	ND	4.3	L3
75-69-4	Trichlorofluoromethane	ND	4.3	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	4.3	
75-01-4	Vinyl chloride	ND	8.5	
179601-23-1	m&p-Xylene	ND	8.5	
95-47-6	o-Xylene	ND	4.3	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-8-1.5
		Lab ID:	92199715008
% Moisture:		Collected:	05/01/14 14:40
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:36
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**17.4**	0.10	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-9-2.5
		Lab ID:	92199715009
% Moisture:	19.8394	Collected:	05/01/14 14:45
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 23:11
Results reported on a "dry-weight" basis		Dilution Factor:	500

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	46800	
71-43-2	Benzene	ND	2340	
74-97-5	Bromochloromethane	ND	2340	
75-27-4	Bromodichloromethane	ND	2340	
75-25-2	Bromoform	ND	2340	
74-83-9	Bromomethane	ND	4680	
78-93-3	2-Butanone (MEK)	ND	46800	
75-15-0	Carbon disulfide	ND	4680	
56-23-5	Carbon tetrachloride	ND	2340	
108-90-7	Chlorobenzene	ND	2340	
75-00-3	Chloroethane	ND	4680	
67-66-3	Chloroform	ND	2340	
74-87-3	Chloromethane	ND	4680	
110-82-7	Cyclohexane	ND	2340	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2340	
124-48-1	Dibromochloromethane	ND	2340	
106-93-4	1,2-Dibromoethane (EDB)	ND	2340	
95-50-1	1,2-Dichlorobenzene	ND	2340	
541-73-1	1,3-Dichlorobenzene	ND	2340	
106-46-7	1,4-Dichlorobenzene	ND	2340	
75-71-8	Dichlorodifluoromethane	ND	4680	L3
75-34-3	1,1-Dichloroethane	ND	2340	
107-06-2	1,2-Dichloroethane	ND	2340	
75-35-4	1,1-Dichloroethene	ND	2340	
156-59-2	cis-1,2-Dichloroethene	ND	2340	
156-60-5	trans-1,2-Dichloroethene	ND	2340	
78-87-5	1,2-Dichloropropane	ND	2340	
10061-01-5	cis-1,3-Dichloropropene	ND	2340	
10061-02-6	trans-1,3-Dichloropropene	ND	2340	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	70100	
100-41-4	Ethylbenzene	ND	2340	
591-78-6	2-Hexanone	ND	23400	
98-82-8	Isopropylbenzene (Cumene)	ND	2340	
79-20-9	Methyl acetate	ND	4680	
108-87-2	Methylcyclohexane	ND	4680	
75-09-2	Methylene Chloride	ND	9350	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	23400	
1634-04-4	Methyl-tert-butyl ether	ND	2340	
100-42-5	Styrene	ND	2340	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2340	L2
127-18-4	Tetrachloroethene	ND	2340	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-9-2.5
		Lab ID:	92199715009
% Moisture:	19.8394	Collected:	05/01/14 14:45
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 23:11
Results reported on a "dry-weight" basis		Dilution Factor:	500

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
87-61-6	1,2,3-Trichlorobenzene	ND	2340	
120-82-1	1,2,4-Trichlorobenzene	ND	2340	
71-55-6	1,1,1-Trichloroethane	ND	2340	
79-00-5	1,1,2-Trichloroethane	ND	2340	
79-01-6	Trichloroethene	ND	2340	L3
75-69-4	Trichlorofluoromethane	ND	2340	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	2340	
75-01-4	Vinyl chloride	ND	4680	
179601-23-1	m&p-Xylene	ND	4680	
95-47-6	o-Xylene	ND	2340	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-9-2.5
		Lab ID:	92199715009
% Moisture:	19.8394	Collected:	05/01/14 14:45
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 20:04
Results reported on a "dry-weight" basis		Dilution Factor:	10000

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**1620000**	46800	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-9-2.5
		Lab ID:	92199715009
% Moisture:		Collected:	05/01/14 14:45
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:36
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**19.8**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-10-2.5
		Lab ID:	92199715010
% Moisture:	18.5362	Collected:	05/01/14 15:30
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 18:45
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	89.3	
71-43-2	Benzene	ND	4.5	
74-97-5	Bromochloromethane	ND	4.5	
75-27-4	Bromodichloromethane	ND	4.5	
75-25-2	Bromoform	ND	4.5	
74-83-9	Bromomethane	ND	8.9	
78-93-3	2-Butanone (MEK)	ND	89.3	
75-15-0	Carbon disulfide	ND	8.9	
56-23-5	Carbon tetrachloride	ND	4.5	
108-90-7	Chlorobenzene	ND	4.5	
75-00-3	Chloroethane	ND	8.9	
67-66-3	Chloroform	ND	4.5	
74-87-3	Chloromethane	ND	8.9	
110-82-7	Cyclohexane	ND	4.5	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.5	
124-48-1	Dibromochloromethane	ND	4.5	
106-93-4	1,2-Dibromoethane (EDB)	ND	4.5	
95-50-1	1,2-Dichlorobenzene	ND	4.5	
541-73-1	1,3-Dichlorobenzene	ND	4.5	
106-46-7	1,4-Dichlorobenzene	ND	4.5	
75-71-8	Dichlorodifluoromethane	ND	8.9	
75-34-3	1,1-Dichloroethane	ND	4.5	
107-06-2	1,2-Dichloroethane	ND	4.5	
75-35-4	1,1-Dichloroethene	ND	4.5	
156-59-2	cis-1,2-Dichloroethene	ND	4.5	
156-60-5	trans-1,2-Dichloroethene	ND	4.5	
78-87-5	1,2-Dichloropropane	ND	4.5	
10061-01-5	cis-1,3-Dichloropropene	ND	4.5	
10061-02-6	trans-1,3-Dichloropropene	ND	4.5	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	134	
100-41-4	Ethylbenzene	ND	4.5	
591-78-6	2-Hexanone	ND	44.7	
98-82-8	Isopropylbenzene (Cumene)	ND	4.5	
79-20-9	Methyl acetate	ND	8.9	
108-87-2	Methylcyclohexane	ND	8.9	
75-09-2	Methylene Chloride	ND	17.9	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	44.7	
1634-04-4	Methyl-tert-butyl ether	ND	4.5	
100-42-5	Styrene	ND	4.5	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.5	
127-18-4	Tetrachloroethene	ND	4.5	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-10-2.5
		Lab ID:	92199715010
% Moisture:	18.5362	Collected:	05/01/14 15:30
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 18:45
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**2.3J**	4.5	
87-61-6	1,2,3-Trichlorobenzene	ND	4.5	
120-82-1	1,2,4-Trichlorobenzene	ND	4.5	
71-55-6	1,1,1-Trichloroethane	ND	4.5	
79-00-5	1,1,2-Trichloroethane	ND	4.5	
79-01-6	Trichloroethene	ND	4.5	
75-69-4	Trichlorofluoromethane	ND	4.5	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	4.5	
75-01-4	Vinyl chloride	ND	8.9	
179601-23-1	m&p-Xylene	ND	8.9	
95-47-6	o-Xylene	ND	4.5	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-10-2.5
		Lab ID:	92199715010
% Moisture:		Collected:	05/01/14 15:30
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:36
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**18.5**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-11-3
		Lab ID:	92199715011
% Moisture:	18.5878	Collected:	05/01/14 16:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 23:50
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	83.8	
71-43-2	Benzene	ND	4.2	
74-97-5	Bromochloromethane	ND	4.2	
75-27-4	Bromodichloromethane	ND	4.2	
75-25-2	Bromoform	ND	4.2	
74-83-9	Bromomethane	ND	8.4	
78-93-3	2-Butanone (MEK)	ND	83.8	
75-15-0	Carbon disulfide	ND	8.4	
56-23-5	Carbon tetrachloride	ND	4.2	
108-90-7	Chlorobenzene	ND	4.2	
75-00-3	Chloroethane	ND	8.4	
67-66-3	Chloroform	ND	4.2	
74-87-3	Chloromethane	ND	8.4	
110-82-7	Cyclohexane	ND	4.2	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.2	
124-48-1	Dibromochloromethane	ND	4.2	
106-93-4	1,2-Dibromoethane (EDB)	ND	4.2	
95-50-1	1,2-Dichlorobenzene	ND	4.2	
541-73-1	1,3-Dichlorobenzene	ND	4.2	
106-46-7	1,4-Dichlorobenzene	ND	4.2	
75-71-8	Dichlorodifluoromethane	ND	8.4	L3
75-34-3	1,1-Dichloroethane	ND	4.2	
107-06-2	1,2-Dichloroethane	ND	4.2	
75-35-4	1,1-Dichloroethene	ND	4.2	
156-59-2	cis-1,2-Dichloroethene	ND	4.2	
156-60-5	trans-1,2-Dichloroethene	ND	4.2	
78-87-5	1,2-Dichloropropane	ND	4.2	
10061-01-5	cis-1,3-Dichloropropene	ND	4.2	
10061-02-6	trans-1,3-Dichloropropene	ND	4.2	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	126	
100-41-4	Ethylbenzene	ND	4.2	
591-78-6	2-Hexanone	ND	41.9	
98-82-8	Isopropylbenzene (Cumene)	ND	4.2	
79-20-9	Methyl acetate	ND	8.4	
108-87-2	Methylcyclohexane	ND	8.4	
75-09-2	Methylene Chloride	ND	16.8	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	41.9	
1634-04-4	Methyl-tert-butyl ether	ND	4.2	
100-42-5	Styrene	ND	4.2	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.2	L2
127-18-4	Tetrachloroethene	ND	4.2	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-11-3
		Lab ID:	92199715011
% Moisture:	18.5878	Collected:	05/01/14 16:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 23:50
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**12.4**	4.2	
87-61-6	1,2,3-Trichlorobenzene	ND	4.2	
120-82-1	1,2,4-Trichlorobenzene	ND	4.2	
71-55-6	1,1,1-Trichloroethane	ND	4.2	
79-00-5	1,1,2-Trichloroethane	ND	4.2	
79-01-6	Trichloroethene	ND	4.2	L3
75-69-4	Trichlorofluoromethane	ND	4.2	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	4.2	
75-01-4	Vinyl chloride	ND	8.4	
179601-23-1	m&p-Xylene	ND	8.4	
95-47-6	o-Xylene	ND	4.2	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-11-3
		Lab ID:	92199715011
% Moisture:		Collected:	05/01/14 16:15
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:36
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**18.6**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-12-2
		Lab ID:	92199715012
% Moisture:	17.3987	Collected:	05/01/14 16:55
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 00:10
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**12.1J**	103	
71-43-2	Benzene	ND	5.2	
74-97-5	Bromochloromethane	ND	5.2	
75-27-4	Bromodichloromethane	ND	5.2	
75-25-2	Bromoform	ND	5.2	
74-83-9	Bromomethane	ND	10.3	
78-93-3	2-Butanone (MEK)	ND	103	
75-15-0	Carbon disulfide	ND	10.3	
56-23-5	Carbon tetrachloride	ND	5.2	
108-90-7	Chlorobenzene	ND	5.2	
75-00-3	Chloroethane	ND	10.3	
67-66-3	Chloroform	ND	5.2	
74-87-3	Chloromethane	ND	10.3	
110-82-7	Cyclohexane	ND	5.2	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.2	
124-48-1	Dibromochloromethane	ND	5.2	
106-93-4	1,2-Dibromoethane (EDB)	ND	5.2	
95-50-1	1,2-Dichlorobenzene	ND	5.2	
541-73-1	1,3-Dichlorobenzene	ND	5.2	
106-46-7	1,4-Dichlorobenzene	ND	5.2	
75-71-8	Dichlorodifluoromethane	ND	10.3	L3
75-34-3	1,1-Dichloroethane	ND	5.2	
107-06-2	1,2-Dichloroethane	ND	5.2	
75-35-4	1,1-Dichloroethene	ND	5.2	
156-59-2	cis-1,2-Dichloroethene	ND	5.2	
156-60-5	trans-1,2-Dichloroethene	ND	5.2	
78-87-5	1,2-Dichloropropane	ND	5.2	
10061-01-5	cis-1,3-Dichloropropene	ND	5.2	
10061-02-6	trans-1,3-Dichloropropene	ND	5.2	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	155	
100-41-4	Ethylbenzene	ND	5.2	
591-78-6	2-Hexanone	ND	51.6	
98-82-8	Isopropylbenzene (Cumene)	ND	5.2	
79-20-9	Methyl acetate	ND	10.3	
108-87-2	Methylcyclohexane	ND	10.3	
75-09-2	Methylene Chloride	ND	20.6	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	51.6	
1634-04-4	Methyl-tert-butyl ether	ND	5.2	
100-42-5	Styrene	ND	5.2	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.2	L2
127-18-4	Tetrachloroethene	ND	5.2	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-12-2
		Lab ID:	92199715012
% Moisture:	17.3987	Collected:	05/01/14 16:55
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 00:10
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	5.2	
87-61-6	1,2,3-Trichlorobenzene	ND	5.2	
120-82-1	1,2,4-Trichlorobenzene	ND	5.2	
71-55-6	1,1,1-Trichloroethane	ND	5.2	
79-00-5	1,1,2-Trichloroethane	ND	5.2	
79-01-6	Trichloroethene	ND	5.2	L3
75-69-4	Trichlorofluoromethane	ND	5.2	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	5.2	
75-01-4	Vinyl chloride	ND	10.3	
179601-23-1	m&p-Xylene	ND	10.3	
95-47-6	o-Xylene	ND	5.2	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-12-2
		Lab ID:	92199715012
% Moisture:		Collected:	05/01/14 16:55
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:36
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**17.4**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-13-3
		Lab ID:	92199715013
% Moisture:	15.9339	Collected:	05/01/14 17:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 00:30
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**14.4J**	83.1	
71-43-2	Benzene	**1.7J**	4.2	
74-97-5	Bromochloromethane	ND	4.2	
75-27-4	Bromodichloromethane	ND	4.2	M1
75-25-2	Bromoform	ND	4.2	R1
74-83-9	Bromomethane	ND	8.3	
78-93-3	2-Butanone (MEK)	ND	83.1	M1
75-15-0	Carbon disulfide	ND	8.3	
56-23-5	Carbon tetrachloride	ND	4.2	
108-90-7	Chlorobenzene	ND	4.2	M1,R1
75-00-3	Chloroethane	ND	8.3	
67-66-3	Chloroform	ND	4.2	
74-87-3	Chloromethane	ND	8.3	
110-82-7	Cyclohexane	ND	4.2	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.2	M1,R1
124-48-1	Dibromochloromethane	ND	4.2	M1,R1
106-93-4	1,2-Dibromoethane (EDB)	ND	4.2	R1
95-50-1	1,2-Dichlorobenzene	ND	4.2	M1,R1
541-73-1	1,3-Dichlorobenzene	ND	4.2	M1,R1
106-46-7	1,4-Dichlorobenzene	ND	4.2	M1,R1
75-71-8	Dichlorodifluoromethane	ND	8.3	L3,M0
75-34-3	1,1-Dichloroethane	ND	4.2	
107-06-2	1,2-Dichloroethane	ND	4.2	M1
75-35-4	1,1-Dichloroethene	ND	4.2	
156-59-2	cis-1,2-Dichloroethene	ND	4.2	
156-60-5	trans-1,2-Dichloroethene	ND	4.2	
78-87-5	1,2-Dichloropropane	ND	4.2	
10061-01-5	cis-1,3-Dichloropropene	ND	4.2	
10061-02-6	trans-1,3-Dichloropropene	ND	4.2	R1
123-91-1	1,4-Dioxane (p-Dioxane)	ND	125	M1,R1
100-41-4	Ethylbenzene	ND	4.2	
591-78-6	2-Hexanone	ND	41.5	M1,R1
98-82-8	Isopropylbenzene (Cumene)	ND	4.2	
79-20-9	Methyl acetate	ND	8.3	
108-87-2	Methylcyclohexane	ND	8.3	
75-09-2	Methylene Chloride	ND	16.6	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	41.5	M1
1634-04-4	Methyl-tert-butyl ether	ND	4.2	M1
100-42-5	Styrene	ND	4.2	M1,R1
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.2	L2,R1
127-18-4	Tetrachloroethene	ND	4.2	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-13-3
		Lab ID:	92199715013
% Moisture:	15.9339	Collected:	05/01/14 17:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 00:30
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	4.2	
87-61-6	1,2,3-Trichlorobenzene	ND	4.2	M1,R1
120-82-1	1,2,4-Trichlorobenzene	ND	4.2	M1,R1
71-55-6	1,1,1-Trichloroethane	ND	4.2	
79-00-5	1,1,2-Trichloroethane	ND	4.2	M1,R1
79-01-6	Trichloroethene	ND	4.2	L3
75-69-4	Trichlorofluoromethane	ND	4.2	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	4.2	
75-01-4	Vinyl chloride	ND	8.3	
179601-23-1	m&p-Xylene	ND	8.3	R1
95-47-6	o-Xylene	ND	4.2	R1

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-13-3
		Lab ID:	92199715013
% Moisture:		Collected:	05/01/14 17:15
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:37
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**15.9**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-100-3
		Lab ID:	92199715014
% Moisture:	15.6813	Collected:	05/01/14 17:30
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 01:29
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**13.1J**	113	
71-43-2	Benzene	ND	5.6	
74-97-5	Bromochloromethane	ND	5.6	
75-27-4	Bromodichloromethane	ND	5.6	
75-25-2	Bromoform	ND	5.6	
74-83-9	Bromomethane	ND	11.3	
78-93-3	2-Butanone (MEK)	ND	113	
75-15-0	Carbon disulfide	ND	11.3	
56-23-5	Carbon tetrachloride	ND	5.6	
108-90-7	Chlorobenzene	ND	5.6	
75-00-3	Chloroethane	ND	11.3	
67-66-3	Chloroform	ND	5.6	
74-87-3	Chloromethane	ND	11.3	
110-82-7	Cyclohexane	ND	5.6	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.6	
124-48-1	Dibromochloromethane	ND	5.6	
106-93-4	1,2-Dibromoethane (EDB)	ND	5.6	
95-50-1	1,2-Dichlorobenzene	ND	5.6	
541-73-1	1,3-Dichlorobenzene	ND	5.6	
106-46-7	1,4-Dichlorobenzene	ND	5.6	
75-71-8	Dichlorodifluoromethane	ND	11.3	L3
75-34-3	1,1-Dichloroethane	ND	5.6	
107-06-2	1,2-Dichloroethane	ND	5.6	
75-35-4	1,1-Dichloroethene	ND	5.6	
156-59-2	cis-1,2-Dichloroethene	ND	5.6	
156-60-5	trans-1,2-Dichloroethene	ND	5.6	
78-87-5	1,2-Dichloropropane	ND	5.6	
10061-01-5	cis-1,3-Dichloropropene	ND	5.6	
10061-02-6	trans-1,3-Dichloropropene	ND	5.6	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	169	
100-41-4	Ethylbenzene	ND	5.6	
591-78-6	2-Hexanone	ND	56.3	
98-82-8	Isopropylbenzene (Cumene)	ND	5.6	
79-20-9	Methyl acetate	ND	11.3	
108-87-2	Methylcyclohexane	ND	11.3	
75-09-2	Methylene Chloride	ND	22.5	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	56.3	
1634-04-4	Methyl-tert-butyl ether	ND	5.6	
100-42-5	Styrene	ND	5.6	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.6	L2
127-18-4	Tetrachloroethene	ND	5.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-100-3
		Lab ID:	92199715014
% Moisture:	15.6813	Collected:	05/01/14 17:30
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 01:29
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	5.6	
87-61-6	1,2,3-Trichlorobenzene	ND	5.6	
120-82-1	1,2,4-Trichlorobenzene	ND	5.6	
71-55-6	1,1,1-Trichloroethane	ND	5.6	
79-00-5	1,1,2-Trichloroethane	ND	5.6	
79-01-6	Trichloroethene	ND	5.6	L3
75-69-4	Trichlorofluoromethane	ND	5.6	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	5.6	
75-01-4	Vinyl chloride	ND	11.3	
179601-23-1	m&p-Xylene	ND	11.3	
95-47-6	o-Xylene	ND	5.6	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-100-3
		Lab ID:	92199715014
% Moisture:		Collected:	05/01/14 17:30
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:37
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**15.7**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-14-2.5
		Lab ID:	92199715015
% Moisture:	14.8235	Collected:	05/01/14 18:00
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 01:49
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**24.6J**	98.2	
71-43-2	Benzene	**4.2J**	4.9	
74-97-5	Bromochloromethane	ND	4.9	
75-27-4	Bromodichloromethane	ND	4.9	
75-25-2	Bromoform	ND	4.9	
74-83-9	Bromomethane	ND	9.8	
78-93-3	2-Butanone (MEK)	ND	98.2	
75-15-0	Carbon disulfide	ND	9.8	
56-23-5	Carbon tetrachloride	ND	4.9	
108-90-7	Chlorobenzene	ND	4.9	
75-00-3	Chloroethane	ND	9.8	
67-66-3	Chloroform	ND	4.9	
74-87-3	Chloromethane	ND	9.8	
110-82-7	Cyclohexane	ND	4.9	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.9	
124-48-1	Dibromochloromethane	ND	4.9	
106-93-4	1,2-Dibromoethane (EDB)	ND	4.9	
95-50-1	1,2-Dichlorobenzene	ND	4.9	
541-73-1	1,3-Dichlorobenzene	ND	4.9	
106-46-7	1,4-Dichlorobenzene	ND	4.9	
75-71-8	Dichlorodifluoromethane	ND	9.8	L3
75-34-3	1,1-Dichloroethane	ND	4.9	
107-06-2	1,2-Dichloroethane	ND	4.9	
75-35-4	1,1-Dichloroethene	ND	4.9	
156-59-2	cis-1,2-Dichloroethene	ND	4.9	
156-60-5	trans-1,2-Dichloroethene	ND	4.9	
78-87-5	1,2-Dichloropropane	ND	4.9	
10061-01-5	cis-1,3-Dichloropropene	ND	4.9	
10061-02-6	trans-1,3-Dichloropropene	ND	4.9	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	147	
100-41-4	Ethylbenzene	ND	4.9	
591-78-6	2-Hexanone	ND	49.1	
98-82-8	Isopropylbenzene (Cumene)	ND	4.9	
79-20-9	Methyl acetate	ND	9.8	
108-87-2	Methylcyclohexane	ND	9.8	
75-09-2	Methylene Chloride	ND	19.6	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	49.1	
1634-04-4	Methyl-tert-butyl ether	ND	4.9	
100-42-5	Styrene	ND	4.9	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.9	L2
127-18-4	Tetrachloroethene	ND	4.9	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-14-2.5
		Lab ID:	92199715015
% Moisture:	14.8235	Collected:	05/01/14 18:00
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 01:49
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	4.9	
87-61-6	1,2,3-Trichlorobenzene	ND	4.9	
120-82-1	1,2,4-Trichlorobenzene	ND	4.9	
71-55-6	1,1,1-Trichloroethane	ND	4.9	
79-00-5	1,1,2-Trichloroethane	ND	4.9	
79-01-6	Trichloroethene	ND	4.9	L3
75-69-4	Trichlorofluoromethane	ND	4.9	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	4.9	
75-01-4	Vinyl chloride	ND	9.8	
179601-23-1	m&p-Xylene	ND	9.8	
95-47-6	o-Xylene	ND	4.9	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-14-2.5
		Lab ID:	92199715015
% Moisture:		Collected:	05/01/14 18:00
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:16
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**14.8**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-0607
		Lab ID:	92199715018
% Moisture:		Collected:	05/02/14 09:30
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/13/14 17:39
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**19.9**	0.10	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-0607
		Lab ID:	92199715018
% Moisture:	19.8768	Collected:	05/02/14 09:30
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 11:57
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: mg/kg

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	**1060**	749	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-0607
		Lab ID:	92199715018
% Moisture:	19.8768	Collected:	05/02/14 09:30
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 12:03
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: mg/kg

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	**1040**	749	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-0607
		Lab ID:	92199715018
% Moisture:	19.8768	Collected:	05/02/14 09:30
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 12:09
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: mg/kg

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	**1110**	749	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-0607
		Lab ID:	92199715018
% Moisture:	19.8768	Collected:	05/02/14 09:30
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 12:15
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: mg/kg

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	**1130**	749	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-0607
		Lab ID:	92199715018
% Moisture:		Collected:	05/02/14 09:30
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 11:57
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	RSD%	**3.9**		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-0607
		Lab ID:	92199715018
% Moisture:	19.8768	Collected:	05/02/14 09:30
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 11:57
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: mg/kg

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Mean Total Organic Carbon	**1090**	749	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-17-2
		Lab ID:	92199715019
% Moisture:	13.6803	Collected:	05/02/14 11:00
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 02:09
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**10.3J**	76.2	
71-43-2	Benzene	ND	3.8	
74-97-5	Bromochloromethane	ND	3.8	
75-27-4	Bromodichloromethane	ND	3.8	
75-25-2	Bromoform	ND	3.8	
74-83-9	Bromomethane	ND	7.6	
78-93-3	2-Butanone (MEK)	ND	76.2	
75-15-0	Carbon disulfide	ND	7.6	
56-23-5	Carbon tetrachloride	ND	3.8	
108-90-7	Chlorobenzene	ND	3.8	
75-00-3	Chloroethane	ND	7.6	
67-66-3	Chloroform	ND	3.8	
74-87-3	Chloromethane	ND	7.6	
110-82-7	Cyclohexane	ND	3.8	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.8	
124-48-1	Dibromochloromethane	ND	3.8	
106-93-4	1,2-Dibromoethane (EDB)	ND	3.8	
95-50-1	1,2-Dichlorobenzene	ND	3.8	
541-73-1	1,3-Dichlorobenzene	ND	3.8	
106-46-7	1,4-Dichlorobenzene	ND	3.8	
75-71-8	Dichlorodifluoromethane	ND	7.6	L3
75-34-3	1,1-Dichloroethane	ND	3.8	
107-06-2	1,2-Dichloroethane	ND	3.8	
75-35-4	1,1-Dichloroethene	ND	3.8	
156-59-2	cis-1,2-Dichloroethene	ND	3.8	
156-60-5	trans-1,2-Dichloroethene	ND	3.8	
78-87-5	1,2-Dichloropropane	ND	3.8	
10061-01-5	cis-1,3-Dichloropropene	ND	3.8	
10061-02-6	trans-1,3-Dichloropropene	ND	3.8	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	114	
100-41-4	Ethylbenzene	ND	3.8	
591-78-6	2-Hexanone	ND	38.1	
98-82-8	Isopropylbenzene (Cumene)	ND	3.8	
79-20-9	Methyl acetate	ND	7.6	
108-87-2	Methylcyclohexane	ND	7.6	
75-09-2	Methylene Chloride	ND	15.2	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	38.1	
1634-04-4	Methyl-tert-butyl ether	ND	3.8	
100-42-5	Styrene	ND	3.8	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.8	L2
127-18-4	Tetrachloroethene	ND	3.8	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-17-2
		Lab ID:	92199715019
% Moisture:	13.6803	Collected:	05/02/14 11:00
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 02:09
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	3.8	
87-61-6	1,2,3-Trichlorobenzene	ND	3.8	
120-82-1	1,2,4-Trichlorobenzene	ND	3.8	
71-55-6	1,1,1-Trichloroethane	ND	3.8	
79-00-5	1,1,2-Trichloroethane	ND	3.8	
79-01-6	Trichloroethene	ND	3.8	L3
75-69-4	Trichlorofluoromethane	ND	3.8	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	3.8	
75-01-4	Vinyl chloride	ND	7.6	
179601-23-1	m&p-Xylene	ND	7.6	
95-47-6	o-Xylene	ND	3.8	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-17-2
		Lab ID:	92199715019
% Moisture:		Collected:	05/02/14 11:00
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:37
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**13.7**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-101-2
		Lab ID:	92199715020
% Moisture:	14.6584	Collected:	05/02/14 11:05
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 02:29
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	**9.2J**	75.1	
71-43-2	Benzene	ND	3.8	
74-97-5	Bromochloromethane	ND	3.8	
75-27-4	Bromodichloromethane	ND	3.8	
75-25-2	Bromoform	ND	3.8	
74-83-9	Bromomethane	ND	7.5	
78-93-3	2-Butanone (MEK)	ND	75.1	
75-15-0	Carbon disulfide	ND	7.5	
56-23-5	Carbon tetrachloride	ND	3.8	
108-90-7	Chlorobenzene	ND	3.8	
75-00-3	Chloroethane	ND	7.5	
67-66-3	Chloroform	ND	3.8	
74-87-3	Chloromethane	ND	7.5	
110-82-7	Cyclohexane	ND	3.8	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.8	
124-48-1	Dibromochloromethane	ND	3.8	
106-93-4	1,2-Dibromoethane (EDB)	ND	3.8	
95-50-1	1,2-Dichlorobenzene	ND	3.8	
541-73-1	1,3-Dichlorobenzene	ND	3.8	
106-46-7	1,4-Dichlorobenzene	ND	3.8	
75-71-8	Dichlorodifluoromethane	ND	7.5	L3
75-34-3	1,1-Dichloroethane	ND	3.8	
107-06-2	1,2-Dichloroethane	ND	3.8	
75-35-4	1,1-Dichloroethene	ND	3.8	
156-59-2	cis-1,2-Dichloroethene	ND	3.8	
156-60-5	trans-1,2-Dichloroethene	ND	3.8	
78-87-5	1,2-Dichloropropane	ND	3.8	
10061-01-5	cis-1,3-Dichloropropene	ND	3.8	
10061-02-6	trans-1,3-Dichloropropene	ND	3.8	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	113	
100-41-4	Ethylbenzene	ND	3.8	
591-78-6	2-Hexanone	ND	37.6	
98-82-8	Isopropylbenzene (Cumene)	ND	3.8	
79-20-9	Methyl acetate	ND	7.5	
108-87-2	Methylcyclohexane	ND	7.5	
75-09-2	Methylene Chloride	ND	15.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	37.6	
1634-04-4	Methyl-tert-butyl ether	ND	3.8	
100-42-5	Styrene	ND	3.8	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.8	L2
127-18-4	Tetrachloroethene	ND	3.8	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-101-2
		Lab ID:	92199715020
% Moisture:	14.6584	Collected:	05/02/14 11:05
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 02:29
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	3.8	
87-61-6	1,2,3-Trichlorobenzene	ND	3.8	
120-82-1	1,2,4-Trichlorobenzene	ND	3.8	
71-55-6	1,1,1-Trichloroethane	ND	3.8	
79-00-5	1,1,2-Trichloroethane	ND	3.8	
79-01-6	Trichloroethene	ND	3.8	L3
75-69-4	Trichlorofluoromethane	ND	3.8	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	3.8	
75-01-4	Vinyl chloride	ND	7.5	
179601-23-1	m&p-Xylene	ND	7.5	
95-47-6	o-Xylene	ND	3.8	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-101-2
		Lab ID:	92199715020
% Moisture:		Collected:	05/02/14 11:05
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:37
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**14.7**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-18-2.5
		Lab ID:	92199715021
% Moisture:	13.1248	Collected:	05/02/14 11:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 02:49
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	90.5	
71-43-2	Benzene	ND	4.5	
74-97-5	Bromochloromethane	ND	4.5	
75-27-4	Bromodichloromethane	ND	4.5	
75-25-2	Bromoform	ND	4.5	
74-83-9	Bromomethane	ND	9.0	
78-93-3	2-Butanone (MEK)	ND	90.5	
75-15-0	Carbon disulfide	ND	9.0	
56-23-5	Carbon tetrachloride	ND	4.5	
108-90-7	Chlorobenzene	ND	4.5	
75-00-3	Chloroethane	ND	9.0	
67-66-3	Chloroform	ND	4.5	
74-87-3	Chloromethane	ND	9.0	
110-82-7	Cyclohexane	ND	4.5	
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.5	
124-48-1	Dibromochloromethane	ND	4.5	
106-93-4	1,2-Dibromoethane (EDB)	ND	4.5	
95-50-1	1,2-Dichlorobenzene	ND	4.5	
541-73-1	1,3-Dichlorobenzene	ND	4.5	
106-46-7	1,4-Dichlorobenzene	ND	4.5	
75-71-8	Dichlorodifluoromethane	ND	9.0	L3
75-34-3	1,1-Dichloroethane	ND	4.5	
107-06-2	1,2-Dichloroethane	ND	4.5	
75-35-4	1,1-Dichloroethene	ND	4.5	
156-59-2	cis-1,2-Dichloroethene	ND	4.5	
156-60-5	trans-1,2-Dichloroethene	ND	4.5	
78-87-5	1,2-Dichloropropane	ND	4.5	
10061-01-5	cis-1,3-Dichloropropene	ND	4.5	
10061-02-6	trans-1,3-Dichloropropene	ND	4.5	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	136	
100-41-4	Ethylbenzene	ND	4.5	
591-78-6	2-Hexanone	ND	45.2	
98-82-8	Isopropylbenzene (Cumene)	ND	4.5	
79-20-9	Methyl acetate	ND	9.0	
108-87-2	Methylcyclohexane	ND	9.0	
75-09-2	Methylene Chloride	ND	18.1	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	45.2	
1634-04-4	Methyl-tert-butyl ether	ND	4.5	
100-42-5	Styrene	ND	4.5	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.5	L2
127-18-4	Tetrachloroethene	ND	4.5	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-18-2.5
		Lab ID:	92199715021
% Moisture:	13.1248	Collected:	05/02/14 11:15
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 02:49
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	4.5	
87-61-6	1,2,3-Trichlorobenzene	ND	4.5	
120-82-1	1,2,4-Trichlorobenzene	ND	4.5	
71-55-6	1,1,1-Trichloroethane	ND	4.5	
79-00-5	1,1,2-Trichloroethane	ND	4.5	
79-01-6	Trichloroethene	ND	4.5	L3
75-69-4	Trichlorofluoromethane	ND	4.5	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	4.5	
75-01-4	Vinyl chloride	ND	9.0	
179601-23-1	m&p-Xylene	ND	9.0	
95-47-6	o-Xylene	ND	4.5	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-18-2.5
		Lab ID:	92199715021
% Moisture:		Collected:	05/02/14 11:15
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:37
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**13.1**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-4-2
		Lab ID:	92199715022
% Moisture:	16.621	Collected:	05/01/14 12:00
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 03:09
Results reported on a "dry-weight" basis		Dilution Factor:	25

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	2180	
71-43-2	Benzene	ND	109	
74-97-5	Bromochloromethane	ND	109	
75-27-4	Bromodichloromethane	ND	109	
75-25-2	Bromoform	ND	109	
74-83-9	Bromomethane	ND	218	
78-93-3	2-Butanone (MEK)	ND	2180	
75-15-0	Carbon disulfide	ND	218	
56-23-5	Carbon tetrachloride	ND	109	
108-90-7	Chlorobenzene	ND	109	
75-00-3	Chloroethane	ND	218	
67-66-3	Chloroform	ND	109	
74-87-3	Chloromethane	ND	218	
110-82-7	Cyclohexane	ND	109	
96-12-8	1,2-Dibromo-3-chloropropane	ND	109	
124-48-1	Dibromochloromethane	ND	109	
106-93-4	1,2-Dibromoethane (EDB)	ND	109	
95-50-1	1,2-Dichlorobenzene	ND	109	
541-73-1	1,3-Dichlorobenzene	ND	109	
106-46-7	1,4-Dichlorobenzene	ND	109	
75-71-8	Dichlorodifluoromethane	ND	218	L3
75-34-3	1,1-Dichloroethane	ND	109	
107-06-2	1,2-Dichloroethane	ND	109	
75-35-4	1,1-Dichloroethene	ND	109	
156-59-2	cis-1,2-Dichloroethene	**45.4J**	109	
156-60-5	trans-1,2-Dichloroethene	ND	109	
78-87-5	1,2-Dichloropropane	ND	109	
10061-01-5	cis-1,3-Dichloropropene	ND	109	
10061-02-6	trans-1,3-Dichloropropene	ND	109	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	3270	
100-41-4	Ethylbenzene	**44.0J**	109	
591-78-6	2-Hexanone	ND	1090	
98-82-8	Isopropylbenzene (Cumene)	**51.7J**	109	
79-20-9	Methyl acetate	ND	218	
108-87-2	Methylcyclohexane	ND	218	
75-09-2	Methylene Chloride	ND	436	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	1090	
1634-04-4	Methyl-tert-butyl ether	ND	109	
100-42-5	Styrene	ND	109	
79-34-5	1,1,2,2-Tetrachloroethane	ND	109	L2
127-18-4	Tetrachloroethene	ND	109	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-4-2
		Lab ID:	92199715022
% Moisture:	16.621	Collected:	05/01/14 12:00
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 03:09
Results reported on a "dry-weight" basis		Dilution Factor:	25

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
87-61-6	1,2,3-Trichlorobenzene	ND	109	
120-82-1	1,2,4-Trichlorobenzene	ND	109	
71-55-6	1,1,1-Trichloroethane	ND	109	
79-00-5	1,1,2-Trichloroethane	ND	109	
79-01-6	Trichloroethene	ND	109	L3
75-69-4	Trichlorofluoromethane	ND	109	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	109	
75-01-4	Vinyl chloride	ND	218	
179601-23-1	m&p-Xylene	**84.5J**	218	
95-47-6	o-Xylene	**79.6J**	109	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-4-2
		Lab ID:	92199715022
% Moisture:	16.621	Collected:	05/01/14 12:00
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/06/14 20:24
Results reported on a "dry-weight" basis		Dilution Factor:	500

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	**67200**	2180	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-4-2
		Lab ID:	92199715022
% Moisture:		Collected:	05/01/14 12:00
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/05/14 16:37
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**16.6**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-1415
		Lab ID:	92199715023
% Moisture:		Collected:	05/02/14 09:40
Acode:	Percent Moisture	Received:	05/02/14 17:20
Prep/Method:	ASTM D2974-87	Analyzed:	05/13/14 17:39
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	Percent Moisture	**20.3**	0.10	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-1415
		Lab ID:	92199715023
% Moisture:	20.2993	Collected:	05/02/14 09:40
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 12:21
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: mg/kg

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	**2140**	753	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-1415
		Lab ID:	92199715023
% Moisture:	20.2993	Collected:	05/02/14 09:40
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 12:26
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: mg/kg

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	**2310**	753	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-1415
		Lab ID:	92199715023
% Moisture:	20.2993	Collected:	05/02/14 09:40
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 12:33
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: mg/kg

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	**2010**	753	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-1415
		Lab ID:	92199715023
% Moisture:	20.2993	Collected:	05/02/14 09:40
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 12:39
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: mg/kg

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	**1810**	753	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-1415
		Lab ID:	92199715023
% Moisture:		Collected:	05/02/14 09:40
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 12:21
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: %

CAS No.	Parameters	Results	Report Limit	Qual
	RSD%	**10.4**		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	SB-16-1415
		Lab ID:	92199715023
% Moisture:	20.2993	Collected:	05/02/14 09:40
Acode:	Total Organic Carbon Quad	Received:	05/02/14 17:20
Prep/Method:	EPA 9060	Analyzed:	05/09/14 12:21
Results reported on a "dry-weight" basis		Dilution Factor:	1

Units: mg/kg

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Mean Total Organic Carbon	**2070**	753	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Water	Sample:	EB-050214
		Lab ID:	92199715024
% Moisture:		Collected:	05/02/14 11:00
Acode:	8011 GCS EDB and DBCP	Received:	05/02/14 17:20
Prep/Method:	EPA 8011 / EPA 8011	Analyzed:	05/06/14 14:35
		Dilution Factor:	1

Units: ug/L

CAS No.	Parameters	Results	Report Limit	Qual
106-93-4	1,2-Dibromoethane (EDB)	ND	0.020	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix: Water
% Moisture:
Acode: 8260 MSV Low Level SC
Prep/Method: EPA 8260

Sample: EB-050214
Lab ID: 92199715024
Collected: 05/02/14 11:00
Received: 05/02/14 17:20
Analyzed: 05/09/14 17:18
Dilution Factor: 1

Units: ug/L

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	25.0	
71-43-2	Benzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	5.0	
78-93-3	2-Butanone (MEK)	ND	5.0	
75-15-0	Carbon disulfide	ND	2.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	
67-66-3	Chloroform	ND	1.0	
74-87-3	Chloromethane	ND	1.0	
110-82-7	Cyclohexane	ND	1.0	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.0	
124-48-1	Dibromochloromethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
75-71-8	Dichlorodifluoromethane	ND	1.0	
75-34-3	1,1-Dichloroethane	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethene	ND	1.0	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	150	
100-41-4	Ethylbenzene	ND	1.0	
591-78-6	2-Hexanone	ND	5.0	
98-82-8	Isopropylbenzene (Cumene)	ND	1.0	
79-20-9	Methyl acetate	ND	10.0	
108-87-2	Methylcyclohexane	ND	10.0	
75-09-2	Methylene Chloride	ND	2.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	
1634-04-4	Methyl-tert-butyl ether	ND	1.0	
100-42-5	Styrene	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
127-18-4	Tetrachloroethene	ND	1.0	
108-88-3	Toluene	**0.45J**	1.0	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Water	Sample:	EB-050214
		Lab ID:	92199715024
% Moisture:		Collected:	05/02/14 11:00
Acode:	8260 MSV Low Level SC	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/09/14 17:18
		Dilution Factor:	1

Units: ug/L

CAS No.	Parameters	Results	Report Limit	Qual
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
79-01-6	Trichloroethene	ND	1.0	
75-69-4	Trichlorofluoromethane	ND	1.0	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	1.0	
75-01-4	Vinyl chloride	ND	1.0	
179601-23-1	m&p-Xylene	ND	2.0	
95-47-6	o-Xylene	ND	1.0	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	TB-050214
		Lab ID:	92199715025
% Moisture:		Collected:	05/02/14 00:00
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 21:12
Results reported on a "wet-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
67-64-1	Acetone	ND	100	
71-43-2	Benzene	ND	5.0	
74-97-5	Bromochloromethane	ND	5.0	
75-27-4	Bromodichloromethane	ND	5.0	
75-25-2	Bromoform	ND	5.0	
74-83-9	Bromomethane	ND	10.0	
78-93-3	2-Butanone (MEK)	ND	100	
75-15-0	Carbon disulfide	ND	10.0	
56-23-5	Carbon tetrachloride	ND	5.0	
108-90-7	Chlorobenzene	ND	5.0	
75-00-3	Chloroethane	ND	10.0	
67-66-3	Chloroform	ND	5.0	
74-87-3	Chloromethane	ND	10.0	
110-82-7	Cyclohexane	ND	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	
124-48-1	Dibromochloromethane	ND	5.0	
106-93-4	1,2-Dibromoethane (EDB)	ND	5.0	
95-50-1	1,2-Dichlorobenzene	ND	5.0	
541-73-1	1,3-Dichlorobenzene	ND	5.0	
106-46-7	1,4-Dichlorobenzene	ND	5.0	
75-71-8	Dichlorodifluoromethane	ND	10.0	L3
75-34-3	1,1-Dichloroethane	ND	5.0	
107-06-2	1,2-Dichloroethane	ND	5.0	
75-35-4	1,1-Dichloroethene	ND	5.0	
156-59-2	cis-1,2-Dichloroethene	ND	5.0	
156-60-5	trans-1,2-Dichloroethene	ND	5.0	
78-87-5	1,2-Dichloropropane	ND	5.0	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	150	
100-41-4	Ethylbenzene	ND	5.0	
591-78-6	2-Hexanone	ND	50.0	
98-82-8	Isopropylbenzene (Cumene)	ND	5.0	
79-20-9	Methyl acetate	ND	10.0	
108-87-2	Methylcyclohexane	ND	10.0	
75-09-2	Methylene Chloride	ND	20.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50.0	
1634-04-4	Methyl-tert-butyl ether	ND	5.0	
100-42-5	Styrene	ND	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	L2
127-18-4	Tetrachloroethene	ND	5.0	

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ANALYTICAL RESULTS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Matrix:	Solid	Sample:	TB-050214
		Lab ID:	92199715025
% Moisture:		Collected:	05/02/14 00:00
Acode:	8260/5035A SC Volatile Org	Received:	05/02/14 17:20
Prep/Method:	EPA 8260	Analyzed:	05/05/14 21:12
Results reported on a "wet-weight" basis		Dilution Factor:	1

Units: ug/kg

CAS No.	Parameters	Results	Report Limit	Qual
108-88-3	Toluene	ND	5.0	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	
71-55-6	1,1,1-Trichloroethane	ND	5.0	
79-00-5	1,1,2-Trichloroethane	ND	5.0	
79-01-6	Trichloroethene	ND	5.0	L3
75-69-4	Trichlorofluoromethane	ND	5.0	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	5.0	
75-01-4	Vinyl chloride	ND	10.0	
179601-23-1	m&p-Xylene	ND	10.0	
95-47-6	o-Xylene	ND	5.0	

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26766
Analysis Method: EPA 8260
QC Batch: Method: EPA 8260
Associated Lab Samples: 92199715024

CAS No.	Analyte	Results	Units	Report Limit	Analyzed	Qual
71-55-6	1,1,1-Trichloroethane	ND	ug/L	1.0	05/09/14 12:22	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	05/09/14 12:22	
79-00-5	1,1,2-Trichloroethane	ND	ug/L	1.0	05/09/14 12:22	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	05/09/14 12:22	
75-34-3	1,1-Dichloroethane	ND	ug/L	1.0	05/09/14 12:22	
75-35-4	1,1-Dichloroethene	ND	ug/L	1.0	05/09/14 12:22	
87-61-6	1,2,3-Trichlorobenzene	ND	ug/L	1.0	05/09/14 12:22	
120-82-1	1,2,4-Trichlorobenzene	ND	ug/L	1.0	05/09/14 12:22	
96-12-8	1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	05/09/14 12:22	
95-50-1	1,2-Dichlorobenzene	ND	ug/L	1.0	05/09/14 12:22	
107-06-2	1,2-Dichloroethane	ND	ug/L	1.0	05/09/14 12:22	
78-87-5	1,2-Dichloropropane	ND	ug/L	1.0	05/09/14 12:22	
541-73-1	1,3-Dichlorobenzene	ND	ug/L	1.0	05/09/14 12:22	
106-46-7	1,4-Dichlorobenzene	ND	ug/L	1.0	05/09/14 12:22	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	ug/L	150	05/09/14 12:22	
78-93-3	2-Butanone (MEK)	ND	ug/L	5.0	05/09/14 12:22	
591-78-6	2-Hexanone	ND	ug/L	5.0	05/09/14 12:22	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	05/09/14 12:22	
67-64-1	Acetone	ND	ug/L	25.0	05/09/14 12:22	
71-43-2	Benzene	ND	ug/L	1.0	05/09/14 12:22	
74-97-5	Bromochloromethane	ND	ug/L	1.0	05/09/14 12:22	
75-27-4	Bromodichloromethane	ND	ug/L	1.0	05/09/14 12:22	
75-25-2	Bromoform	ND	ug/L	1.0	05/09/14 12:22	
74-83-9	Bromomethane	ND	ug/L	5.0	05/09/14 12:22	
75-15-0	Carbon disulfide	ND	ug/L	2.0	05/09/14 12:22	
56-23-5	Carbon tetrachloride	ND	ug/L	1.0	05/09/14 12:22	
108-90-7	Chlorobenzene	ND	ug/L	1.0	05/09/14 12:22	
75-00-3	Chloroethane	ND	ug/L	1.0	05/09/14 12:22	
67-66-3	Chloroform	ND	ug/L	1.0	05/09/14 12:22	
74-87-3	Chloromethane	ND	ug/L	1.0	05/09/14 12:22	

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26766
Analysis Method: EPA 8260
QC Batch: Method: EPA 8260
Associated Lab Samples: 92199715024

CAS No.	Analyte	Results	Units	Report Limit	Analyzed	Qual
156-59-2	cis-1,2-Dichloroethene	ND	ug/L	1.0	05/09/14 12:22	
10061-01-5	cis-1,3-Dichloropropene	ND	ug/L	1.0	05/09/14 12:22	
110-82-7	Cyclohexane	ND	ug/L	1.0	05/09/14 12:22	
124-48-1	Dibromochloromethane	ND	ug/L	1.0	05/09/14 12:22	
75-71-8	Dichlorodifluoromethane	ND	ug/L	1.0	05/09/14 12:22	
100-41-4	Ethylbenzene	ND	ug/L	1.0	05/09/14 12:22	
98-82-8	Isopropylbenzene (Cumene)	ND	ug/L	1.0	05/09/14 12:22	
179601-23-1	m&p-Xylene	ND	ug/L	2.0	05/09/14 12:22	
79-20-9	Methyl acetate	ND	ug/L	10.0	05/09/14 12:22	
1634-04-4	Methyl-tert-butyl ether	ND	ug/L	1.0	05/09/14 12:22	
108-87-2	Methylcyclohexane	ND	ug/L	10.0	05/09/14 12:22	
75-09-2	Methylene Chloride	ND	ug/L	2.0	05/09/14 12:22	
95-47-6	o-Xylene	ND	ug/L	1.0	05/09/14 12:22	
100-42-5	Styrene	ND	ug/L	1.0	05/09/14 12:22	
127-18-4	Tetrachloroethene	ND	ug/L	1.0	05/09/14 12:22	
108-88-3	Toluene	ND	ug/L	1.0	05/09/14 12:22	
156-60-5	trans-1,2-Dichloroethene	ND	ug/L	1.0	05/09/14 12:22	
10061-02-6	trans-1,3-Dichloropropene	ND	ug/L	1.0	05/09/14 12:22	
79-01-6	Trichloroethene	ND	ug/L	1.0	05/09/14 12:22	
75-69-4	Trichlorofluoromethane	ND	ug/L	1.0	05/09/14 12:22	
75-01-4	Vinyl chloride	ND	ug/L	1.0	05/09/14 12:22	

Type	Sample	Matrix
BLANK	1195855	Water

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SURROGATE RECOVERY SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV / 26766
QC Batch Method: EPA 8260
Analysis Method: EPA 8260

Lab ID	Client Sample ID	Type	Matrix	Dilution	Sur1 % Rec	Sur1 Qual	Sur2 % Rec	Sur2 Qual	Sur3 % Rec	Sur3 Qual	Sur4 % Rec	Sur4 Qual	Sur5 % Rec	Sur5 Qual	Sur6 % Rec	Sur6 Qual
1195855		BLANK	Water	1	95		101		97							
1195856		LCS	Water	1	95		100		99							
92199715024	EB-050214		Water	1	97		99		96							
QC Limits:					70-130		70-130		70-130							

Sur 1: 1,2-Dichloroethane-d4 (S)
Sur 2: 4-Bromofluorobenzene (S)
Sur 3: Toluene-d8 (S)

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26766 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260

Analyte	Units	% Rec LCS	% Rec LCSD	LCS RPD	QC Limits LCS	QC Limits MAX RPD LCSD	Spike LCS	Results LCS	Results LCSD	Qual
LCS Prepared:	**LCS Analyzed:**	05/09/14 11:34			**LCSD Prepared:**			**LCSD Analyzed:**		
1,1,1-Trichloroethane	ug/L	87			70-130		50	43.5		
1,1,2,2-Tetrachloroethane	ug/L	98			70-130		50	48.9		
1,1,2-Trichloroethane	ug/L	99			70-130		50	49.4		
1,1,2-Trichlorotrifluoroethane	ug/L	100			70-130		50	49.9		
1,1-Dichloroethane	ug/L	89			70-130		50	44.7		
1,1-Dichloroethene	ug/L	89			70-130		50	44.5		
1,2,3-Trichlorobenzene	ug/L	104			70-130		50	51.9		
1,2,4-Trichlorobenzene	ug/L	106			70-130		50	53.0		
1,2-Dibromo-3-chloropropane	ug/L	87			70-130		50	43.4		
1,2-Dichlorobenzene	ug/L	103			70-130		50	51.4		
1,2-Dichloroethane	ug/L	89			70-130		50	44.5		
1,2-Dichloropropane	ug/L	96			70-130		50	48.0		
1,3-Dichlorobenzene	ug/L	98			70-130		50	49.2		
1,4-Dichlorobenzene	ug/L	98			70-130		50	49.0		
1,4-Dioxane (p-Dioxane)	ug/L	126			70-130		1000	1260		
2-Butanone (MEK)	ug/L	92			70-130		100	91.8		
2-Hexanone	ug/L	89			70-130		100	89.2		
4-Methyl-2-pentanone (MIBK)	ug/L	90			70-130		100	89.8		
Acetone	ug/L	86			70-130		100	85.8		
Benzene	ug/L	104			70-130		50	51.9		
Bromochloromethane	ug/L	100			70-130		50	49.8		
Bromodichloromethane	ug/L	85			70-130		50	42.3		
Bromoform	ug/L	92			70-130		50	46.2		
Bromomethane	ug/L	68			70-130		50	34.0		L0
Carbon disulfide	ug/L	89			70-130		50	44.3		
Carbon tetrachloride	ug/L	85			70-130		50	42.7		
Chlorobenzene	ug/L	96			70-130		50	48.0		
Chloroethane	ug/L	65			70-130		50	32.4		L0
Chloroform	ug/L	88			70-130		50	43.8		

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26766 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260

Analyte	Units	% Rec LCS	% Rec LCSD	LCS RPD	QC Limits LCS	QC Limits MAX RPD LCSD	Spike LCS	Results LCS	Results LCSD	Qual
Chloromethane	ug/L	80			70-130		50	40.1		
cis-1,2-Dichloroethene	ug/L	91			70-130		50	45.3		
cis-1,3-Dichloropropene	ug/L	95			70-130		50	47.6		
Cyclohexane	ug/L	94			70-130		50	47.2		
Dibromochloromethane	ug/L	89			70-130		50	44.4		
Dichlorodifluoromethane	ug/L	98			70-130		50	48.8		
Ethylbenzene	ug/L	95			70-130		50	47.3		
Isopropylbenzene (Cumene)	ug/L	99			70-130		50	49.3		
m&p-Xylene	ug/L	94			70-130		100	94.0		
Methyl acetate	ug/L	82			70-130		50	41.1		
Methyl-tert-butyl ether	ug/L	95			70-130		50	47.5		
Methylcyclohexane	ug/L	105			70-130		50	52.5		
Methylene Chloride	ug/L	87			70-130		50	43.4		
o-Xylene	ug/L	97			70-130		50	48.6		
Styrene	ug/L	101			70-130		50	50.3		
Tetrachloroethene	ug/L	106			70-130		50	52.8		
Toluene	ug/L	99			70-130		50	49.4		
trans-1,2-Dichloroethene	ug/L	93			70-130		50	46.6		
trans-1,3-Dichloropropene	ug/L	90			70-130		50	45.0		
Trichloroethene	ug/L	103			70-130		50	51.4		
Trichlorofluoromethane	ug/L	86			70-130		50	43.2		
Vinyl chloride	ug/L	108			70-130		50	53.9		

Type	Sample	Matrix
LCS	1195856	Water

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26686 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260
Associated Lab Samples: 92199715001, 92199715002, 92199715003

CAS No.	Analyte	Results	Units	Report Limit	Analyzed	Qual
71-55-6	1,1,1-Trichloroethane	ND	ug/kg	5.0	05/05/14 11:57	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0	05/05/14 11:57	
79-00-5	1,1,2-Trichloroethane	ND	ug/kg	5.0	05/05/14 11:57	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	ug/kg	5.0	05/05/14 11:57	
75-34-3	1,1-Dichloroethane	ND	ug/kg	5.0	05/05/14 11:57	
75-35-4	1,1-Dichloroethene	ND	ug/kg	5.0	05/05/14 11:57	
87-61-6	1,2,3-Trichlorobenzene	ND	ug/kg	5.0	05/05/14 11:57	
120-82-1	1,2,4-Trichlorobenzene	ND	ug/kg	5.0	05/05/14 11:57	
96-12-8	1,2-Dibromo-3-chloropropane	ND	ug/kg	5.0	05/05/14 11:57	
106-93-4	1,2-Dibromoethane (EDB)	ND	ug/kg	5.0	05/05/14 11:57	
95-50-1	1,2-Dichlorobenzene	ND	ug/kg	5.0	05/05/14 11:57	
107-06-2	1,2-Dichloroethane	ND	ug/kg	5.0	05/05/14 11:57	
78-87-5	1,2-Dichloropropane	ND	ug/kg	5.0	05/05/14 11:57	
541-73-1	1,3-Dichlorobenzene	ND	ug/kg	5.0	05/05/14 11:57	
106-46-7	1,4-Dichlorobenzene	ND	ug/kg	5.0	05/05/14 11:57	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	ug/kg	150	05/05/14 11:57	
78-93-3	2-Butanone (MEK)	ND	ug/kg	99.8	05/05/14 11:57	
591-78-6	2-Hexanone	ND	ug/kg	49.9	05/05/14 11:57	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	ug/kg	49.9	05/05/14 11:57	
67-64-1	Acetone	ND	ug/kg	99.8	05/05/14 11:57	
71-43-2	Benzene	ND	ug/kg	5.0	05/05/14 11:57	
74-97-5	Bromochloromethane	ND	ug/kg	5.0	05/05/14 11:57	
75-27-4	Bromodichloromethane	ND	ug/kg	5.0	05/05/14 11:57	
75-25-2	Bromoform	ND	ug/kg	5.0	05/05/14 11:57	
74-83-9	Bromomethane	ND	ug/kg	10	05/05/14 11:57	
75-15-0	Carbon disulfide	ND	ug/kg	10	05/05/14 11:57	
56-23-5	Carbon tetrachloride	ND	ug/kg	5.0	05/05/14 11:57	
108-90-7	Chlorobenzene	ND	ug/kg	5.0	05/05/14 11:57	
75-00-3	Chloroethane	ND	ug/kg	10	05/05/14 11:57	
67-66-3	Chloroform	ND	ug/kg	5.0	05/05/14 11:57	

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26686 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260
Associated Lab Samples: 92199715001, 92199715002, 92199715003

CAS No.	Analyte	Results	Units	Report Limit	Analyzed	Qual
74-87-3	Chloromethane	ND	ug/kg	10	05/05/14 11:57	
156-59-2	cis-1,2-Dichloroethene	ND	ug/kg	5.0	05/05/14 11:57	
10061-01-5	cis-1,3-Dichloropropene	ND	ug/kg	5.0	05/05/14 11:57	
110-82-7	Cyclohexane	ND	ug/kg	5.0	05/05/14 11:57	
124-48-1	Dibromochloromethane	ND	ug/kg	5.0	05/05/14 11:57	
75-71-8	Dichlorodifluoromethane	ND	ug/kg	10	05/05/14 11:57	
100-41-4	Ethylbenzene	ND	ug/kg	5.0	05/05/14 11:57	
98-82-8	Isopropylbenzene (Cumene)	ND	ug/kg	5.0	05/05/14 11:57	
179601-23-1	m&p-Xylene	ND	ug/kg	10	05/05/14 11:57	
79-20-9	Methyl acetate	ND	ug/kg	10	05/05/14 11:57	
1634-04-4	Methyl-tert-butyl ether	ND	ug/kg	5.0	05/05/14 11:57	
108-87-2	Methylcyclohexane	ND	ug/kg	10	05/05/14 11:57	
75-09-2	Methylene Chloride	ND	ug/kg	20.0	05/05/14 11:57	
95-47-6	o-Xylene	ND	ug/kg	5.0	05/05/14 11:57	
100-42-5	Styrene	ND	ug/kg	5.0	05/05/14 11:57	
127-18-4	Tetrachloroethene	ND	ug/kg	5.0	05/05/14 11:57	
108-88-3	Toluene	ND	ug/kg	5.0	05/05/14 11:57	
156-60-5	trans-1,2-Dichloroethene	ND	ug/kg	5.0	05/05/14 11:57	
10061-02-6	trans-1,3-Dichloropropene	ND	ug/kg	5.0	05/05/14 11:57	
79-01-6	Trichloroethene	ND	ug/kg	5.0	05/05/14 11:57	
75-69-4	Trichlorofluoromethane	ND	ug/kg	5.0	05/05/14 11:57	
75-01-4	Vinyl chloride	ND	ug/kg	10	05/05/14 11:57	

Type	Sample	Matrix
BLANK	1191198	Solid

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SURROGATE RECOVERY SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV / 26686
QC Batch Method: EPA 8260
Analysis Method: EPA 8260

Lab ID	Client Sample ID	Type	Matrix	Dilution	Sur1 % Rec	Sur1 Qual	Sur2 % Rec	Sur2 Qual	Sur3 % Rec	Sur3 Qual	Sur4 % Rec	Sur4 Qual	Sur5 % Rec	Sur5 Qual	Sur6 % Rec	Sur6 Qual
1191198		BLANK	Solid	1	98		99		98							
92199715001	SB-1-2.5		Solid	25	97		105		93							
1191199		LCS	Solid	1	97		100		97							
92199715002	SB-2-2.5		Solid	1	128		101		102							
92199715003	SB-3-2.5		Solid	1	131	S0	99		95							
QC Limits:					70-130		70-130		70-130							

Sur 1: 1,2-Dichloroethane-d4 (S)
Sur 2: 4-Bromofluorobenzene (S)
Sur 3: Toluene-d8 (S)

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26686 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260

Analyte	Units	% Rec LCS	% Rec LCSD	LCS RPD	QC Limits LCS	QC Limits MAX RPD LCSD	Spike LCS	Results LCS	Results LCSD	Qual
LCS Prepared:	**LCS Analyzed:**	05/05/14 11:17			**LCSD Prepared:**			**LCSD Analyzed:**		
1,1,1-Trichloroethane	ug/kg	89			70-130		44.7	39.7		
1,1,2,2-Tetrachloroethane	ug/kg	99			70-130		44.7	44.3		
1,1,2-Trichloroethane	ug/kg	112			70-130		44.7	50.1		
1,1,2-Trichlorotrifluoroethane	ug/kg	93			70-130		44.7	41.5		
1,1-Dichloroethane	ug/kg	85			70-130		44.7	38.2		
1,1-Dichloroethene	ug/kg	94			70-130		44.7	42.2		
1,2,3-Trichlorobenzene	ug/kg	113			70-130		44.7	50.5		
1,2,4-Trichlorobenzene	ug/kg	114			70-130		44.7	51.0		
1,2-Dibromo-3-chloropropane	ug/kg	123			70-130		44.7	55.2		
1,2-Dibromoethane (EDB)	ug/kg	107			70-130		44.7	48.0		
1,2-Dichlorobenzene	ug/kg	119			70-130		44.7	53.4		
1,2-Dichloroethane	ug/kg	98			70-130		44.7	43.9		
1,2-Dichloropropane	ug/kg	94			70-130		44.7	42.2		
1,3-Dichlorobenzene	ug/kg	117			70-130		44.7	52.4		
1,4-Dichlorobenzene	ug/kg	118			70-130		44.7	53.0		
1,4-Dioxane (p-Dioxane)	ug/kg	98			70-130		894	877		
2-Butanone (MEK)	ug/kg	103			70-130		89.4	92.5		
2-Hexanone	ug/kg	122			70-130		89.4	109		
4-Methyl-2-pentanone (MIBK)	ug/kg	117			70-130		89.4	105		
Acetone	ug/kg	91			70-130		89.4	81.3J		
Benzene	ug/kg	96			70-130		44.7	42.9		
Bromochloromethane	ug/kg	90			70-130		44.7	40.3		
Bromodichloromethane	ug/kg	106			70-130		44.7	47.6		
Bromoform	ug/kg	125			70-130		44.7	55.8		
Bromomethane	ug/kg	93			70-130		44.7	41.4		
Carbon disulfide	ug/kg	92			70-130		44.7	41.3		
Carbon tetrachloride	ug/kg	97			70-130		44.7	43.4		
Chlorobenzene	ug/kg	103			70-130		44.7	46.1		
Chloroethane	ug/kg	96			70-130		44.7	43.0		

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26686 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260

Analyte	Units	% Rec LCS	% Rec LCSD	LCS RPD	QC Limits LCS	QC Limits MAX RPD LCSD	Spike LCS	Results LCS	Results LCSD	Qual
Chloroform	ug/kg	101			70-130		44.7	45.0		
Chloromethane	ug/kg	89			70-130		44.7	40.0		
cis-1,2-Dichloroethene	ug/kg	88			70-130		44.7	39.2		
cis-1,3-Dichloropropene	ug/kg	101			70-130		44.7	45.0		
Cyclohexane	ug/kg	88			70-130		44.7	39.3		
Dibromochloromethane	ug/kg	120			70-130		44.7	53.6		
Dichlorodifluoromethane	ug/kg	136			70-130		44.7	61.0		L3
Ethylbenzene	ug/kg	108			70-130		44.7	48.4		
Isopropylbenzene (Cumene)	ug/kg	112			70-130		44.7	50.0		
m&p-Xylene	ug/kg	109			70-130		89.4	97.1		
Methyl acetate	ug/kg	110			70-130		44.7	49.3		
Methyl-tert-butyl ether	ug/kg	102			70-130		44.7	45.8		
Methylcyclohexane	ug/kg	96			70-130		44.7	43.0		
Methylene Chloride	ug/kg	95			70-130		44.7	42.3		
o-Xylene	ug/kg	107			70-130		44.7	47.9		
Styrene	ug/kg	114			70-130		44.7	51.2		
Tetrachloroethene	ug/kg	106			70-130		44.7	47.5		
Toluene	ug/kg	103			70-130		44.7	45.8		
trans-1,2-Dichloroethene	ug/kg	93			70-130		44.7	41.4		
trans-1,3-Dichloropropene	ug/kg	109			70-130		44.7	48.8		
Trichloroethene	ug/kg	107			70-130		44.7	47.7		
Trichlorofluoromethane	ug/kg	92			70-130		44.7	41.0		
Vinyl chloride	ug/kg	109			70-130		44.7	48.7		

Type	Sample	Matrix
LCS	1191199	Solid

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26690 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260
Associated Lab Samples: 92199715004, 92199715005, 92199715006, 92199715007, 92199715008, 92199715009, 92199715011, 92199715012, 92199715013, 92199715014, 92199715015, 92199715019, 92199715020, 92199715021, 92199715022, 92199715025

CAS No.	Analyte	Results	Units	Report Limit	Analyzed	Qual
71-55-6	1,1,1-Trichloroethane	ND	ug/kg	4.5	05/05/14 20:52	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ug/kg	4.5	05/05/14 20:52	
79-00-5	1,1,2-Trichloroethane	ND	ug/kg	4.5	05/05/14 20:52	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	ug/kg	4.5	05/05/14 20:52	
75-34-3	1,1-Dichloroethane	ND	ug/kg	4.5	05/05/14 20:52	
75-35-4	1,1-Dichloroethene	ND	ug/kg	4.5	05/05/14 20:52	
87-61-6	1,2,3-Trichlorobenzene	ND	ug/kg	4.5	05/05/14 20:52	
120-82-1	1,2,4-Trichlorobenzene	ND	ug/kg	4.5	05/05/14 20:52	
96-12-8	1,2-Dibromo-3-chloropropane	ND	ug/kg	4.5	05/05/14 20:52	
106-93-4	1,2-Dibromoethane (EDB)	ND	ug/kg	4.5	05/05/14 20:52	
95-50-1	1,2-Dichlorobenzene	ND	ug/kg	4.5	05/05/14 20:52	
107-06-2	1,2-Dichloroethane	ND	ug/kg	4.5	05/05/14 20:52	
78-87-5	1,2-Dichloropropane	ND	ug/kg	4.5	05/05/14 20:52	
541-73-1	1,3-Dichlorobenzene	ND	ug/kg	4.5	05/05/14 20:52	
106-46-7	1,4-Dichlorobenzene	ND	ug/kg	4.5	05/05/14 20:52	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	ug/kg	134	05/05/14 20:52	
78-93-3	2-Butanone (MEK)	ND	ug/kg	89.6	05/05/14 20:52	
591-78-6	2-Hexanone	ND	ug/kg	44.8	05/05/14 20:52	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	ug/kg	44.8	05/05/14 20:52	
67-64-1	Acetone	ND	ug/kg	89.6	05/05/14 20:52	
71-43-2	Benzene	ND	ug/kg	4.5	05/05/14 20:52	
74-97-5	Bromochloromethane	ND	ug/kg	4.5	05/05/14 20:52	
75-27-4	Bromodichloromethane	ND	ug/kg	4.5	05/05/14 20:52	
75-25-2	Bromoform	ND	ug/kg	4.5	05/05/14 20:52	
74-83-9	Bromomethane	ND	ug/kg	9.0	05/05/14 20:52	
75-15-0	Carbon disulfide	ND	ug/kg	9.0	05/05/14 20:52	
56-23-5	Carbon tetrachloride	ND	ug/kg	4.5	05/05/14 20:52	
108-90-7	Chlorobenzene	ND	ug/kg	4.5	05/05/14 20:52	
75-00-3	Chloroethane	ND	ug/kg	9.0	05/05/14 20:52	

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26690 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260
Associated Lab Samples: 92199715004, 92199715005, 92199715006, 92199715007, 92199715008, 92199715009, 92199715011, 92199715012, 92199715013, 92199715014, 92199715015, 92199715019, 92199715020, 92199715021, 92199715022, 92199715025

CAS No.	Analyte	Results	Units	Report Limit	Analyzed	Qual
67-66-3	Chloroform	ND	ug/kg	4.5	05/05/14 20:52	
74-87-3	Chloromethane	ND	ug/kg	9.0	05/05/14 20:52	
156-59-2	cis-1,2-Dichloroethene	ND	ug/kg	4.5	05/05/14 20:52	
10061-01-5	cis-1,3-Dichloropropene	ND	ug/kg	4.5	05/05/14 20:52	
110-82-7	Cyclohexane	ND	ug/kg	4.5	05/05/14 20:52	
124-48-1	Dibromochloromethane	ND	ug/kg	4.5	05/05/14 20:52	
75-71-8	Dichlorodifluoromethane	ND	ug/kg	9.0	05/05/14 20:52	
100-41-4	Ethylbenzene	ND	ug/kg	4.5	05/05/14 20:52	
98-82-8	Isopropylbenzene (Cumene)	ND	ug/kg	4.5	05/05/14 20:52	
179601-23-1	m&p-Xylene	ND	ug/kg	9.0	05/05/14 20:52	
79-20-9	Methyl acetate	ND	ug/kg	9.0	05/05/14 20:52	
1634-04-4	Methyl-tert-butyl ether	ND	ug/kg	4.5	05/05/14 20:52	
108-87-2	Methylcyclohexane	ND	ug/kg	9.0	05/05/14 20:52	
75-09-2	Methylene Chloride	ND	ug/kg	17.9	05/05/14 20:52	
95-47-6	o-Xylene	ND	ug/kg	4.5	05/05/14 20:52	
100-42-5	Styrene	ND	ug/kg	4.5	05/05/14 20:52	
127-18-4	Tetrachloroethene	ND	ug/kg	4.5	05/05/14 20:52	
108-88-3	Toluene	ND	ug/kg	4.5	05/05/14 20:52	
156-60-5	trans-1,2-Dichloroethene	ND	ug/kg	4.5	05/05/14 20:52	
10061-02-6	trans-1,3-Dichloropropene	ND	ug/kg	4.5	05/05/14 20:52	
79-01-6	Trichloroethene	ND	ug/kg	4.5	05/05/14 20:52	
75-69-4	Trichlorofluoromethane	ND	ug/kg	4.5	05/05/14 20:52	
75-01-4	Vinyl chloride	ND	ug/kg	9.0	05/05/14 20:52	

Type	Sample	Matrix
BLANK	1191278	Solid

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SURROGATE RECOVERY SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV / 26690
QC Batch Method: EPA 8260
Analysis Method: EPA 8260

Lab ID	Client Sample ID	Type	Matrix	Dilution	Sur1 % Rec	Sur1 Qual	Sur2 % Rec	Sur2 Qual	Sur3 % Rec	Sur3 Qual	Sur4 % Rec	Sur4 Qual	Sur5 % Rec	Sur5 Qual	Sur6 % Rec	Sur6 Qual
1191278		BLANK	Solid	1	106		101		99							
1191279		LCS	Solid	1	115		104		104							
1191280		MS	Solid	1	132	S0	107		104							
1191281		MSD	Solid	1	137	S0	95		103							
92199715004	SB-4-1		Solid	25	101		103		103							
92199715005	SB-5-2		Solid	50	94		103		98							
92199715006	SB-6-2		Solid	1	129		110		107							
92199715007	SB-7-2		Solid	50	88		101		96							
92199715008	SB-8-1.5		Solid	1	140	S0	105		101							
92199715009	SB-9-2.5		Solid	500	95		102		93							
92199715011	SB-11-3		Solid	1	132	S0	107		105							
92199715012	SB-12-2		Solid	1	130		103		99							
92199715013	SB-13-3	OQS	Solid	1	121		95		105							
92199715014	SB-100-3		Solid	1	128		102		99							
92199715015	SB-14-2.5		Solid	1	130		99		106							
92199715019	SB-17-2		Solid	1	127		110		113							
92199715020	SB-101-2		Solid	1	117		104		106							
92199715021	SB-18-2.5		Solid	1	122		99		102							
92199715022	SB-4-2		Solid	25	88		97		100							
92199715025	TB-050214		Solid	1	132	S3	107		102							
QC Limits:					70-130		70-130		70-130							

Sur 1: 1,2-Dichloroethane-d4 (S)
Sur 2: 4-Bromofluorobenzene (S)
Sur 3: Toluene-d8 (S)

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26690 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260

Analyte	Units	% Rec LCS	% Rec LCSD	LCS RPD	QC Limits LCS	QC Limits MAX RPD LCSD	Spike LCS	Results LCS	Results LCSD	Qual
LCS Prepared:	**LCS Analyzed:**	05/05/14 19:52			**LCSD Prepared:**			**LCSD Analyzed:**		
1,1,1-Trichloroethane	ug/kg	113			70-130		46.6	52.9		
1,1,2,2-Tetrachloroethane	ug/kg	50			70-130		46.6	23.2		L0
1,1,2-Trichloroethane	ug/kg	116			70-130		46.6	54.2		
1,1,2-Trichlorotrifluoroethane	ug/kg	112			70-130		46.6	52.1		
1,1-Dichloroethane	ug/kg	95			70-130		46.6	44.4		
1,1-Dichloroethene	ug/kg	113			70-130		46.6	52.6		
1,2,3-Trichlorobenzene	ug/kg	99			70-130		46.6	46.4		
1,2,4-Trichlorobenzene	ug/kg	97			70-130		46.6	45.1		
1,2-Dibromo-3-chloropropane	ug/kg	115			70-130		46.6	53.6		
1,2-Dibromoethane (EDB)	ug/kg	103			70-130		46.6	48.0		
1,2-Dichlorobenzene	ug/kg	102			70-130		46.6	47.5		
1,2-Dichloroethane	ug/kg	119			70-130		46.6	55.6		
1,2-Dichloropropane	ug/kg	105			70-130		46.6	49.0		
1,3-Dichlorobenzene	ug/kg	96			70-130		46.6	44.7		
1,4-Dichlorobenzene	ug/kg	100			70-130		46.6	46.7		
1,4-Dioxane (p-Dioxane)	ug/kg	74			70-130		933	690		
2-Butanone (MEK)	ug/kg	120			70-130		93.3	112		
2-Hexanone	ug/kg	109			70-130		93.3	102		
4-Methyl-2-pentanone (MIBK)	ug/kg	113			70-130		93.3	105		
Acetone	ug/kg	99			70-130		93.3	92.6J		
Benzene	ug/kg	106			70-130		46.6	49.6		
Bromochloromethane	ug/kg	100			70-130		46.6	46.4		
Bromodichloromethane	ug/kg	123			70-130		46.6	57.3		
Bromoform	ug/kg	111			70-130		46.6	51.7		
Bromomethane	ug/kg	110			70-130		46.6	51.1		
Carbon disulfide	ug/kg	107			70-130		46.6	49.9		
Carbon tetrachloride	ug/kg	120			70-130		46.6	56.0		
Chlorobenzene	ug/kg	101			70-130		46.6	47.3		
Chloroethane	ug/kg	96			70-130		46.6	44.5		

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26690 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260

Analyte	Units	% Rec LCS	% Rec LCSD	LCS RPD	QC Limits LCS	QC Limits MAX RPD LCSD	Spike LCS	Results LCS	Results LCSD	Qual
Chloroform	ug/kg	117			70-130		46.6	54.5		
Chloromethane	ug/kg	112			70-130		46.6	52.1		
cis-1,2-Dichloroethene	ug/kg	104			70-130		46.6	48.7		
cis-1,3-Dichloropropene	ug/kg	108			70-130		46.6	50.5		
Cyclohexane	ug/kg	104			70-130		46.6	48.4		
Dibromochloromethane	ug/kg	109			70-130		46.6	50.7		
Dichlorodifluoromethane	ug/kg	147			70-130		46.6	68.3		L0
Ethylbenzene	ug/kg	111			70-130		46.6	51.5		
Isopropylbenzene (Cumene)	ug/kg	113			70-130		46.6	52.5		
m&p-Xylene	ug/kg	110			70-130		93.3	103		
Methyl acetate	ug/kg	78			70-130		46.6	36.6		
Methyl-tert-butyl ether	ug/kg	109			70-130		46.6	50.7		
Methylcyclohexane	ug/kg	100			70-130		46.6	46.4		
Methylene Chloride	ug/kg	107			70-130		46.6	49.8		
o-Xylene	ug/kg	109			70-130		46.6	51.1		
Styrene	ug/kg	112			70-130		46.6	52.3		
Tetrachloroethene	ug/kg	108			70-130		46.6	50.2		
Toluene	ug/kg	115			70-130		46.6	53.4		
trans-1,2-Dichloroethene	ug/kg	104			70-130		46.6	48.7		
trans-1,3-Dichloropropene	ug/kg	114			70-130		46.6	53.4		
Trichloroethene	ug/kg	149			70-130		46.6	69.6		L0
Trichlorofluoromethane	ug/kg	112			70-130		46.6	52.3		
Vinyl chloride	ug/kg	120			70-130		46.6	55.8		

Type	Sample	Matrix
LCS	1191279	Solid

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26690 Analysis Method: EPA 8260
QC Batch: Method EPA 8260

Analyte	Units	% Rec MS	% Rec MSD	MS RPD	QC Limits MS/MSD	QC Limits MAX RPD MSD	Spike MS	Spike MSD	Dilution MS	Dilution MSD	Results Sample	Results MS	Results MSD	Qual
MS Prepared:	**MS Analyzed:**	05/06/14 00:50		**MSD Prepared:**			**MSD Analyzed:**	05/06/14 01:10						
1,1,1-Trichloroethane	ug/kg	109	108	12	70-130	30	45.1	40.4	1	1	ND	49.2	43.7	
1,1,2,2-Tetrachloroethane	ug/kg	121	88	42	70-130	30	45.1	40.4	1	1	ND	54.7	35.5	R1
1,1,2-Trichloroethane	ug/kg	142	115	32	70-130	30	45.1	40.4	1	1	ND	64.1	46.6	M1,R1
1,1,2-Trichlorotrifluoroethane	ug/kg	105	102	13	70-130	30	45.1	40.4	1	1	ND	47.3	41.4	
1,1-Dichloroethane	ug/kg	101	100	12	70-130	30	45.1	40.4	1	1	ND	45.6	40.4	
1,1-Dichloroethene	ug/kg	107	105	13	70-130	30	45.1	40.4	1	1	ND	48.4	42.5	
1,2,3-Trichlorobenzene	ug/kg	55	31	66	70-130	30	45.1	40.4	1	1	ND	25.0	12.6	M1,R1
1,2,4-Trichlorobenzene	ug/kg	46	29	55	70-130	30	45.1	40.4	1	1	ND	20.5	11.7	M1,R1
1,2-Dibromo-3-chloropropane	ug/kg	139	96	47	70-130	30	45.1	40.4	1	1	ND	62.7	39.0	M1,R1
1,2-Dibromoethane (EDB)	ug/kg	128	103	32	70-130	30	45.1	40.4	1	1	ND	57.7	41.8	R1
1,2-Dichlorobenzene	ug/kg	74	56	39	70-130	30	45.1	40.4	1	1	ND	33.3	22.5	M1,R1
1,2-Dichloroethane	ug/kg	141	130	18	70-130	30	45.1	40.4	1	1	ND	63.3	52.7	M1
1,2-Dichloropropane	ug/kg	110	103	17	70-130	30	45.1	40.4	1	1	ND	49.7	41.7	
1,3-Dichlorobenzene	ug/kg	67	52	36	70-130	30	45.1	40.4	1	1	ND	30.2	20.9	M1,R1
1,4-Dichlorobenzene	ug/kg	73	53	42	70-130	30	45.1	40.4	1	1	ND	33.1	21.5	M1,R1
1,4-Dioxane (p-Dioxane)	ug/kg	198	84	89	70-130	30	902	809	1	1	ND	1780	681	M1,R1
2-Butanone (MEK)	ug/kg	151	144	16	70-130	30	90.2	80.9	1	1	ND	136	116	M1
2-Hexanone	ug/kg	153	121	34	70-130	30	90.2	80.9	1	1	ND	138	97.7	M1,R1
4-Methyl-2-pentanone (MIBK)	ug/kg	162	133	30	70-130	30	90.2	80.9	1	1	ND	146	108	M1
Acetone	ug/kg	119	107	19	70-130	30	90.2	80.9	1	1	14.4J	122	101	
Benzene	ug/kg	103	97	16	70-130	30	45.1	40.4	1	1	1.7J	48.1	41.0	
Bromochloromethane	ug/kg	111	105	17	70-130	30	45.1	40.4	1	1	ND	50.1	42.4	
Bromodichloromethane	ug/kg	132	121	19	70-130	30	45.1	40.4	1	1	ND	59.4	49.1	M1
Bromoform	ug/kg	129	85	51	70-130	30	45.1	40.4	1	1	ND	58.0	34.4	R1
Bromomethane	ug/kg	87	98	1	70-130	30	45.1	40.4	1	1	ND	39.4	39.7	
Carbon disulfide	ug/kg	102	101	11	70-130	30	45.1	40.4	1	1	ND	46.0	41.1	
Carbon tetrachloride	ug/kg	117	113	14	70-130	30	45.1	40.4	1	1	ND	52.8	45.7	
Chlorobenzene	ug/kg	90	69	37	70-130	30	45.1	40.4	1	1	ND	40.5	27.9	M1,R1
Chloroethane	ug/kg	98	99	9	70-130	30	45.1	40.4	1	1	ND	44.0	40.2	

REPORT OF LABORATORY ANALYSIS

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26690 Analysis Method: EPA 8260
QC Batch: Method EPA 8260

Analyte	Units	% Rec MS	% Rec MSD	MS RPD	QC Limits MS/MSD	QC Limits MAX RPD MSD	Spike MS	Spike MSD	Dilution MS	Dilution MSD	Results Sample	Results MS	Results MSD	Qual
Chloroform	ug/kg	118	116	13	70-130	30	45.1	40.4	1	1	ND	53.2	46.9	
Chloromethane	ug/kg	109	106	13	70-130	30	45.1	40.4	1	1	ND	49.1	42.9	
cis-1,2-Dichloroethene	ug/kg	105	103	13	70-130	30	45.1	40.4	1	1	ND	47.4	41.7	
cis-1,3-Dichloropropene	ug/kg	114	100	24	70-130	30	45.1	40.4	1	1	ND	51.4	40.4	
Cyclohexane	ug/kg	96	95	12	70-130	30	45.1	40.4	1	1	ND	43.4	38.6	
Dibromochloromethane	ug/kg	134	104	36	70-130	30	45.1	40.4	1	1	ND	60.5	42.1	M1,R1
Dichlorodifluoromethane	ug/kg	151	149	12	70-130	30	45.1	40.4	1	1	ND	68.1	60.3	M0
Ethylbenzene	ug/kg	94	79	28	70-130	30	45.1	40.4	1	1	ND	42.6	32.1	
Isopropylbenzene (Cumene)	ug/kg	92	76	30	70-130	30	45.1	40.4	1	1	ND	41.6	30.8	
m&p-Xylene	ug/kg	92	75	31	70-130	30	90.2	80.9	1	1	ND	82.8	60.8	R1
Methyl acetate	ug/kg	575	510	23	70-130	30	45.1	40.4	1	1	ND	259	206	M0
Methyl-tert-butyl ether	ug/kg	150	145	14	70-130	30	45.1	40.4	1	1	ND	67.6	58.7	M1
Methylcyclohexane	ug/kg	86	78	20	70-130	30	45.1	40.4	1	1	ND	38.8	31.8	
Methylene Chloride	ug/kg	114	109	16	70-130	30	45.1	40.4	1	1	ND	51.4	44.0	
o-Xylene	ug/kg	92	74	32	70-130	30	45.1	40.4	1	1	ND	41.7	30.1	R1
Styrene	ug/kg	88	57	52	70-130	30	45.1	40.4	1	1	ND	39.7	23.2	M1,R1
Tetrachloroethene	ug/kg	92	82	22	70-130	30	45.1	40.4	1	1	ND	41.4	33.1	
Toluene	ug/kg	105	95	21	70-130	30	45.1	40.4	1	1	ND	47.5	38.3	
trans-1,2-Dichloroethene	ug/kg	98	97	11	70-130	30	45.1	40.4	1	1	ND	44.2	39.4	
trans-1,3-Dichloropropene	ug/kg	129	105	31	70-130	30	45.1	40.4	1	1	ND	58.0	42.6	R1
Trichloroethene	ug/kg	98	93	15	70-130	30	45.1	40.4	1	1	ND	44.0	37.7	
Trichlorofluoromethane	ug/kg	109	112	8	70-130	30	45.1	40.4	1	1	ND	48.9	45.1	
Vinyl chloride	ug/kg	116	117	9	70-130	30	45.1	40.4	1	1	ND	52.2	47.5	

Type	Sample	Matrix	Client Sample ID
MS	1191280	Solid	
MSD	1191281	Solid	
Sample	92199715013	Solid	SB-13-3

REPORT OF LABORATORY ANALYSIS

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26704
Analysis Method: EPA 8260
QC Batch: Method: EPA 8260
Associated Lab Samples: 92199715010

CAS No.	Analyte	Results	Units	Report Limit	Analyzed	Qual
71-55-6	1,1,1-Trichloroethane	ND	ug/kg	4.8	05/06/14 17:06	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ug/kg	4.8	05/06/14 17:06	
79-00-5	1,1,2-Trichloroethane	ND	ug/kg	4.8	05/06/14 17:06	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	ug/kg	4.8	05/06/14 17:06	
75-34-3	1,1-Dichloroethane	ND	ug/kg	4.8	05/06/14 17:06	
75-35-4	1,1-Dichloroethene	ND	ug/kg	4.8	05/06/14 17:06	
87-61-6	1,2,3-Trichlorobenzene	ND	ug/kg	4.8	05/06/14 17:06	
120-82-1	1,2,4-Trichlorobenzene	ND	ug/kg	4.8	05/06/14 17:06	
96-12-8	1,2-Dibromo-3-chloropropane	ND	ug/kg	4.8	05/06/14 17:06	
106-93-4	1,2-Dibromoethane (EDB)	ND	ug/kg	4.8	05/06/14 17:06	
95-50-1	1,2-Dichlorobenzene	ND	ug/kg	4.8	05/06/14 17:06	
107-06-2	1,2-Dichloroethane	ND	ug/kg	4.8	05/06/14 17:06	
78-87-5	1,2-Dichloropropane	ND	ug/kg	4.8	05/06/14 17:06	
541-73-1	1,3-Dichlorobenzene	ND	ug/kg	4.8	05/06/14 17:06	
106-46-7	1,4-Dichlorobenzene	ND	ug/kg	4.8	05/06/14 17:06	
123-91-1	1,4-Dioxane (p-Dioxane)	ND	ug/kg	145	05/06/14 17:06	
78-93-3	2-Butanone (MEK)	ND	ug/kg	96.5	05/06/14 17:06	
591-78-6	2-Hexanone	ND	ug/kg	48.3	05/06/14 17:06	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	ug/kg	48.3	05/06/14 17:06	
67-64-1	Acetone	ND	ug/kg	96.5	05/06/14 17:06	
71-43-2	Benzene	ND	ug/kg	4.8	05/06/14 17:06	
74-97-5	Bromochloromethane	ND	ug/kg	4.8	05/06/14 17:06	
75-27-4	Bromodichloromethane	ND	ug/kg	4.8	05/06/14 17:06	
75-25-2	Bromoform	ND	ug/kg	4.8	05/06/14 17:06	
74-83-9	Bromomethane	ND	ug/kg	9.7	05/06/14 17:06	
75-15-0	Carbon disulfide	ND	ug/kg	9.7	05/06/14 17:06	
56-23-5	Carbon tetrachloride	ND	ug/kg	4.8	05/06/14 17:06	
108-90-7	Chlorobenzene	ND	ug/kg	4.8	05/06/14 17:06	
75-00-3	Chloroethane	ND	ug/kg	9.7	05/06/14 17:06	
67-66-3	Chloroform	ND	ug/kg	4.8	05/06/14 17:06	

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26704
Analysis Method: EPA 8260
QC Batch: Method: EPA 8260
Associated Lab Samples: 92199715010

CAS No.	Analyte	Results	Units	Report Limit	Analyzed	Qual
74-87-3	Chloromethane	ND	ug/kg	9.7	05/06/14 17:06	
156-59-2	cis-1,2-Dichloroethene	ND	ug/kg	4.8	05/06/14 17:06	
10061-01-5	cis-1,3-Dichloropropene	ND	ug/kg	4.8	05/06/14 17:06	
110-82-7	Cyclohexane	ND	ug/kg	4.8	05/06/14 17:06	
124-48-1	Dibromochloromethane	ND	ug/kg	4.8	05/06/14 17:06	
75-71-8	Dichlorodifluoromethane	ND	ug/kg	9.7	05/06/14 17:06	
100-41-4	Ethylbenzene	ND	ug/kg	4.8	05/06/14 17:06	
98-82-8	Isopropylbenzene (Cumene)	ND	ug/kg	4.8	05/06/14 17:06	
179601-23-1	m&p-Xylene	ND	ug/kg	9.7	05/06/14 17:06	
79-20-9	Methyl acetate	ND	ug/kg	9.7	05/06/14 17:06	
1634-04-4	Methyl-tert-butyl ether	ND	ug/kg	4.8	05/06/14 17:06	
108-87-2	Methylcyclohexane	ND	ug/kg	9.7	05/06/14 17:06	
75-09-2	Methylene Chloride	ND	ug/kg	19.3	05/06/14 17:06	
95-47-6	o-Xylene	ND	ug/kg	4.8	05/06/14 17:06	
100-42-5	Styrene	ND	ug/kg	4.8	05/06/14 17:06	
127-18-4	Tetrachloroethene	ND	ug/kg	4.8	05/06/14 17:06	
108-88-3	Toluene	ND	ug/kg	4.8	05/06/14 17:06	
156-60-5	trans-1,2-Dichloroethene	ND	ug/kg	4.8	05/06/14 17:06	
10061-02-6	trans-1,3-Dichloropropene	ND	ug/kg	4.8	05/06/14 17:06	
79-01-6	Trichloroethene	ND	ug/kg	4.8	05/06/14 17:06	
75-69-4	Trichlorofluoromethane	ND	ug/kg	4.8	05/06/14 17:06	
75-01-4	Vinyl chloride	ND	ug/kg	9.7	05/06/14 17:06	

Type	Sample	Matrix
BLANK	1191976	Solid

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SURROGATE RECOVERY SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV / 26704
QC Batch Method: EPA 8260
Analysis Method: EPA 8260

Lab ID	Client Sample ID	Type	Matrix	Dilution	Sur1 % Rec	Sur1 Qual	Sur2 % Rec	Sur2 Qual	Sur3 % Rec	Sur3 Qual	Sur4 % Rec	Sur4 Qual	Sur5 % Rec	Sur5 Qual	Sur6 % Rec	Sur6 Qual
1191976		BLANK	Solid	1	107		96		99							
1191977		LCS	Solid	1	113		103		98							
92199715010	SB-10-2.5		Solid	1	145	S3	103		104							
QC Limits:					70-130		70-130		70-130							

Sur 1: 1,2-Dichloroethane-d4 (S)
Sur 2: 4-Bromofluorobenzene (S)
Sur 3: Toluene-d8 (S)

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26704 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260

Analyte	Units	% Rec LCS	% Rec LCSD	LCS RPD	QC Limits LCS	QC Limits MAX RPD LCSD	Spike LCS	Results LCS	Results LCSD	Qual
LCS Prepared:	**LCS Analyzed:**	05/06/14 16:46			**LCSD Prepared:**			**LCSD Analyzed:**		
1,1,1-Trichloroethane	ug/kg	103			70-130		49.2	50.9		
1,1,2,2-Tetrachloroethane	ug/kg	38			70-130		49.2	18.7		L0
1,1,2-Trichloroethane	ug/kg	112			70-130		49.2	55.3		
1,1,2-Trichlorotrifluoroethane	ug/kg	95			70-130		49.2	46.6		
1,1-Dichloroethane	ug/kg	90			70-130		49.2	44.1		
1,1-Dichloroethene	ug/kg	97			70-130		49.2	47.9		
1,2,3-Trichlorobenzene	ug/kg	93			70-130		49.2	45.6		
1,2,4-Trichlorobenzene	ug/kg	85			70-130		49.2	41.6		
1,2-Dibromo-3-chloropropane	ug/kg	115			70-130		49.2	56.6		
1,2-Dibromoethane (EDB)	ug/kg	107			70-130		49.2	52.5		
1,2-Dichlorobenzene	ug/kg	101			70-130		49.2	49.7		
1,2-Dichloroethane	ug/kg	109			70-130		49.2	53.6		
1,2-Dichloropropane	ug/kg	95			70-130		49.2	46.6		
1,3-Dichlorobenzene	ug/kg	99			70-130		49.2	48.5		
1,4-Dichlorobenzene	ug/kg	98			70-130		49.2	48.0		
1,4-Dioxane (p-Dioxane)	ug/kg	75			70-130		984	742		
2-Butanone (MEK)	ug/kg	106			70-130		98.4	104		
2-Hexanone	ug/kg	102			70-130		98.4	100		
4-Methyl-2-pentanone (MIBK)	ug/kg	107			70-130		98.4	105		
Acetone	ug/kg	91			70-130		98.4	89.3J		
Benzene	ug/kg	98			70-130		49.2	48.3		
Bromochloromethane	ug/kg	89			70-130		49.2	43.9		
Bromodichloromethane	ug/kg	112			70-130		49.2	55.2		
Bromoform	ug/kg	116			70-130		49.2	57.3		
Bromomethane	ug/kg	86			70-130		49.2	42.5		
Carbon disulfide	ug/kg	91			70-130		49.2	44.5		
Carbon tetrachloride	ug/kg	113			70-130		49.2	55.7		
Chlorobenzene	ug/kg	100			70-130		49.2	49.3		
Chloroethane	ug/kg	94			70-130		49.2	46.0		

REPORT OF LABORATORY ANALYSIS

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: MSV/26704 Analysis Method: EPA 8260
QC Batch: Method: EPA 8260

Analyte	Units	% Rec LCS	% Rec LCSD	LCS RPD	QC Limits LCS	QC Limits MAX RPD LCSD	Spike LCS	Results LCS	Results LCSD	Qual
Chloroform	ug/kg	108			70-130		49.2	53.3		
Chloromethane	ug/kg	91			70-130		49.2	44.9		
cis-1,2-Dichloroethene	ug/kg	97			70-130		49.2	47.5		
cis-1,3-Dichloropropene	ug/kg	104			70-130		49.2	51.3		
Cyclohexane	ug/kg	88			70-130		49.2	43.5		
Dibromochloromethane	ug/kg	117			70-130		49.2	57.4		
Dichlorodifluoromethane	ug/kg	149			70-130		49.2	73.2		L0
Ethylbenzene	ug/kg	109			70-130		49.2	53.6		
Isopropylbenzene (Cumene)	ug/kg	112			70-130		49.2	55.0		
m&p-Xylene	ug/kg	108			70-130		98.4	106		
Methyl acetate	ug/kg	84			70-130		49.2	41.4		
Methyl-tert-butyl ether	ug/kg	103			70-130		49.2	50.7		
Methylcyclohexane	ug/kg	97			70-130		49.2	47.9		
Methylene Chloride	ug/kg	102			70-130		49.2	50.0		
o-Xylene	ug/kg	106			70-130		49.2	52.2		
Styrene	ug/kg	108			70-130		49.2	53.1		
Tetrachloroethene	ug/kg	109			70-130		49.2	53.4		
Toluene	ug/kg	107			70-130		49.2	52.9		
trans-1,2-Dichloroethene	ug/kg	96			70-130		49.2	47.3		
trans-1,3-Dichloropropene	ug/kg	108			70-130		49.2	52.9		
Trichloroethene	ug/kg	149			70-130		49.2	73.3		L0
Trichlorofluoromethane	ug/kg	106			70-130		49.2	52.2		
Vinyl chloride	ug/kg	107			70-130		49.2	52.7		

Type	Sample	Matrix
LCS	1191977	Solid

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: OEXT/27441
Analysis Method: EPA 8011
QC Batch: Method: EPA 8011
Associated Lab Samples: 92199715024

CAS No.	Analyte	Results	Units	Report Limit	Analyzed	Qual
106-93-4	1,2-Dibromoethane (EDB)	ND	ug/L	0.020	05/06/14 06:01	

Type	Sample	Matrix
BLANK	1191414	Water

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SURROGATE RECOVERY SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: OEXT / 27441
QC Batch Method: EPA 8011
Analysis Method: EPA 8011

Lab ID	Client Sample ID	Type	Matrix	Dilution	Sur1 % Rec	Sur1 Qual	Sur2 % Rec	Sur2 Qual	Sur3 % Rec	Sur3 Qual	Sur4 % Rec	Sur4 Qual	Sur5 % Rec	Sur5 Qual	Sur6 % Rec	Sur6 Qual
1191414		BLANK	Water	1	87											
1191419		DUP	Water	1	102											
1191415		LCS	Water	1	78											
1191416		LCSD	Water	1	101											
1191417		MS	Water	1	101											
1191418		MSD	Water	1	95											
92199715024	EB-050214		Water	1	99											
QC Limits:					60-140											

Sur 1: 1-Chloro-2-bromopropane (S)

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: OEXT/27441 Analysis Method: EPA 8011
QC Batch: Method: EPA 8011

Analyte	Units	% Rec LCS	% Rec LCSD	LCS RPD	QC Limits LCS	QC Limits MAX RPD LCSD	Spike LCS	Results LCS	Results LCSD	Qual
LCS Prepared: 05/05/14 15:56	**LCS Analyzed:** 05/06/14 06:22				**LCSD Prepared:** 05/05/14 15:56		**LCSD Analyzed:** 05/06/14 06:42			
1,2-Dibromoethane (EDB)	ug/L	96	94	5	60-140	20	0.29	0.28	0.27	

Type	Sample	Matrix
LCS	1191415	Water
LCSD	1191416	Water

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: OEXT/27441 Analysis Method: EPA 8011
QC Batch: Method EPA 8011

Analyte	Units	% Rec MS	% Rec MSD	MS RPD	QC Limits MS/MSD	QC Limits MAX RPD MSD	Spike MS	Spike MSD	Dilution MS	Dilution MSD	Results Sample	Results MS	Results MSD	Qual
MS Prepared: 05/05/14 15:57	**MS Analyzed:** 05/06/14 09:07				**MSD Prepared:** 05/05/14 15:57		**MSD Analyzed:** 05/06/14 09:27							
1,2-Dibromoethane (EDB)	ug/L	96	96	0	60-140	20	0.28	0.28	1	1	ND	0.27	0.27	

Type	Sample	Matrix	Client Sample ID
MS	1191417	Water	
MSD	1191418	Water	
Sample	92199231006	Water	N/A

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: OEXT/27441 Analysis Method: EPA 8011
QC Batch: Method EPA 8011

Analyte	Units	Dup RPD	QC Limits MAX RPD Dup	Results Sample	Results Dup	Qual
1,2-Dibromoethane (EDB)	ug/L		20	ND	ND	

Type	Sample	Matrix	Client Sample ID
DUP	1191419	Water	
Sample	92199269005	Water	N/A

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: PMST/6527
QC Batch: Method ASTM D2974-87
Analysis Method: ASTM D2974-87

Analyte	Units	Dup RPD	QC Limits MAX RPD Dup	Results Sample	Results Dup	Qual
Percent Moisture	%	9	25	13.8	12.6	

Type	Sample	Matrix	Client Sample ID
DUP	1191029	Solid	
Sample	92199668002	Solid	N/A

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: PMST/6528
QC Batch: Method ASTM D2974-87
Analysis Method: ASTM D2974-87

Analyte	Units	Dup RPD	QC Limits MAX RPD Dup	Results Sample	Results Dup	Qual
Percent Moisture	%	5	25	1.8	1.9	
Percent Moisture	%	9	25	24.8	22.6	

Type	Sample	Matrix	Client Sample ID
DUP	1191031	Solid	
DUP	1191032	Solid	
Sample	92199668001	Solid	N/A
Sample	92199719003	Solid	N/A

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: PMST/9654
QC Batch: Method ASTM D2974-87
Analysis Method: ASTM D2974-87

Analyte	Units	Dup RPD	QC Limits MAX RPD Dup	Results Sample	Results Dup	Qual
Percent Moisture	%	1	10	6.9	6.8	

Type	Sample	Matrix	Client Sample ID
DUP	971798	Solid	
Sample	4096124001	Solid	N/A

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: WETA/23082
Analysis Method: EPA 9060
QC Batch: Method: EPA 9060
Associated Lab Samples:

CAS No.	Analyte	Results	Units	Report Limit	Analyzed	Qual
7440-44-0	Mean Total Organic Carbon	ND	mg/kg	600	05/09/14 12:44	

Type	Sample	Matrix
BLANK	968438	Solid

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: WETA/23082 Analysis Method: EPA 9060
QC Batch: Method: EPA 9060

Analyte	Units	% Rec LCS	% Rec LCSD	LCS RPD	QC Limits LCS	QC Limits MAX RPD LCSD	Spike LCS	Results LCS	Results LCSD	Qual
LCS Prepared:	**LCS Analyzed:**	05/09/14 13:07			**LCSD Prepared:**			**LCSD Analyzed:**		
Mean Total Organic Carbon	mg/kg	99			80-120		120000	119000		

Type	Sample	Matrix
LCS	968439	Solid

REPORT OF LABORATORY ANALYSIS

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QC SAMPLE SUMMARY

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

QC Batch: WETA/23082 Analysis Method: EPA 9060
QC Batch: Method EPA 9060

Analyte	Units	% Rec MS	% Rec MSD	MS RPD	QC Limits MS/MSD	QC Limits MAX RPD MSD	Spike MS	Spike MSD	Dilution MS	Dilution MSD	Results Sample	Results MS	Results MSD	Qual
MS Prepared:	**MS Analyzed:**	05/09/14 08:04		**MSD Prepared:**			**MSD Analyzed:**	05/09/14 08:28						
Mean Total Organic Carbon	mg/kg	82	90	9	50-150	30	7140	7140	1	1	375J	6220	6820	

Type	Sample	Matrix	Client Sample ID
MS	968440	Solid	
MSD	968441	Solid	
Sample	35135570001	Solid	N/A

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QUALIFIERS

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte
PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92199715024	**EB-050214**	EPA 8011	OEXT/27441	EPA 8011	GCSV/17485
92199715024	**EB-050214**	EPA 8260	MSV/26766		
92199715001	**SB-1-2.5**	EPA 8260	MSV/26686		
92199715002	**SB-2-2.5**	EPA 8260	MSV/26686		
92199715003	**SB-3-2.5**	EPA 8260	MSV/26686		
92199715004	**SB-4-1**	EPA 8260	MSV/26690		
92199715005	**SB-5-2**	EPA 8260	MSV/26690		
92199715006	**SB-6-2**	EPA 8260	MSV/26690		
92199715007	**SB-7-2**	EPA 8260	MSV/26690		
92199715008	**SB-8-1.5**	EPA 8260	MSV/26690		
92199715009	**SB-9-2.5**	EPA 8260	MSV/26690		
92199715010	**SB-10-2.5**	EPA 8260	MSV/26704		
92199715011	**SB-11-3**	EPA 8260	MSV/26690		
92199715012	**SB-12-2**	EPA 8260	MSV/26690		
92199715013	**SB-13-3**	EPA 8260	MSV/26690		
92199715014	**SB-100-3**	EPA 8260	MSV/26690		
92199715015	**SB-14-2.5**	EPA 8260	MSV/26690		
92199715019	**SB-17-2**	EPA 8260	MSV/26690		
92199715020	**SB-101-2**	EPA 8260	MSV/26690		
92199715021	**SB-18-2.5**	EPA 8260	MSV/26690		
92199715022	**SB-4-2**	EPA 8260	MSV/26690		
92199715025	**TB-050214**	EPA 8260	MSV/26690		
92199715001	**SB-1-2.5**	ASTM D2974-87	PMST/6527		
92199715002	**SB-2-2.5**	ASTM D2974-87	PMST/6527		
92199715003	**SB-3-2.5**	ASTM D2974-87	PMST/6527		
92199715004	**SB-4-1**	ASTM D2974-87	PMST/6527		
92199715005	**SB-5-2**	ASTM D2974-87	PMST/6527		
92199715006	**SB-6-2**	ASTM D2974-87	PMST/6527		
92199715007	**SB-7-2**	ASTM D2974-87	PMST/6527		
92199715008	**SB-8-1.5**	ASTM D2974-87	PMST/6527		
92199715009	**SB-9-2.5**	ASTM D2974-87	PMST/6527		
92199715010	**SB-10-2.5**	ASTM D2974-87	PMST/6527		
92199715011	**SB-11-3**	ASTM D2974-87	PMST/6527		
92199715012	**SB-12-2**	ASTM D2974-87	PMST/6527		
92199715013	**SB-13-3**	ASTM D2974-87	PMST/6527		
92199715014	**SB-100-3**	ASTM D2974-87	PMST/6527		
92199715015	**SB-14-2.5**	ASTM D2974-87	PMST/6528		
92199715018	**SB-16-0607**	ASTM D2974-87	PMST/9654		
92199715019	**SB-17-2**	ASTM D2974-87	PMST/6527		
92199715020	**SB-101-2**	ASTM D2974-87	PMST/6527		
92199715021	**SB-18-2.5**	ASTM D2974-87	PMST/6527		
92199715022	**SB-4-2**	ASTM D2974-87	PMST/6527		
92199715023	**SB-16-1415**	ASTM D2974-87	PMST/9654		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31999-5 WIX DILLION SC
Pace Project No.: 92199715

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92199715018	**SB-16-0607**	EPA 9060	WETA/23082		
92199715018	**SB-16-0607**	EPA 9060	WETA/23083		
92199715023	**SB-16-1415**	EPA 9060	WETA/23082		
92199715023	**SB-16-1415**	EPA 9060	WETA/23083		

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Pace Analytical	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: April 07. 2014 Page 1 of 2
	Document Number: **F-CHR-CS-003-rev.14**	Issuing Authority: Pace Huntersville Quality Office

Client Name: WSP

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals intact: ☐ yes ☐ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1102 T1401 **Type of Ice:** Wet Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor **T1102**: No Correction **T1301**: No Correction

Corrected Cooler Temp.: 5.2 °C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: GMF 5/2/14

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:_____	☐Yes ☑No ☐N/A	12. pH IT 5 bottles 5/2 14:55 pH IT 14 bottles 5/2 14:55
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13. pH IT 8 bottles 5/2 11:05
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☑No	
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15. 5/2/14
Trip Blank Present:	☑Yes ☐No ☐N/A	16. No date/time on bottles SC not wt
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Erin Huntley Date/Time: 5/5/14

Comments/ Resolution: Erin instructed to cancel TOC samples for SB-15-0607 & SB-15-1415. PM informed of received temp. K.Y.

SCURF Review: JY **Date:** 5/2/14

SRF Review: JY **Date:** 5/5/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 92199715

92199715

CHAIN OF CUSTODY RECORD

Project Number: 31999-5

Site and Location: WIX DILLON SC

Contact Name: ERIN HUNTLEY

Contact Email: erin.huntley@wspgroup.com

Sampler's Name: ERIN HUNTLEY

Sampler's Signature:

Matrices: S = Soil; Aq = Water; A = Air; Bu = Bulk; W = Wipe; B = Biota; OW = Oily Waste; O = Other

Requested Analyses

Sample Identification:	Depth	Date	Time	Matrix	Number of Containers	VOCs (TCL) 8260B	TOC 9060								Remarks	Nº 92999715
SB-1-2.5		5/1	1015	S	4	X										001
SB-2-2.5			1045		4	X										002
SB-3-2.5			1115		4	X										003
SB-4-1			1205		4	X										004
SB-5-2			1225		4	X										005
SB-6-2			1350		4	X										006
SB-7-2			1410		4	X										007
SB-8-1.5			1440		4	X										008
SB-9-2.5			1445		4	X										009
SB-10-~~3~~ 2.5			1530		4	X										010
SB-11-3			1615		4	X										011
SB-12-2			1655		4	X										012
SB-13-3			1715		12	X									MS/MSD	013
SB-100-3			1730		4	X										014
SB-14-2.5			1800		4	X										015
SB-15-0607		5/2	905		4	X	X									016

Relinquished by (Signature): Date | Time: 5/2 1720

Received by (Signature): 5/2/14 17:20

Relinquished by (Signature): Date | Time:

Received by (Signature):

Turn-Around Time:

Tracking Number:

Laboratory Name: PACE

Laboratory Location: NC

Custody Seal Numbers: NA

Method of Shipment: NA

WSP

WSP Environment & Energy

- ☐ Reston Office: 11190 Sunrise Valley Dr., #300, Reston, VA 20191 / Tel: 703-709-6500
- ☒ Pittsburgh Office: 750 Holiday Dr., #410, Pittsburgh, PA 15220 / Tel: 412-604-1040
- ☐ San Jose Office: 2025 Gateway Place, #435, San Jose, CA 95110 / Tel: 408-453-6100
- ☐ New Jersey Office: 200 Cottontail Ln., Somerset, NJ 08873 / Tel: 732-564-0888
- ☐ Denver Office: 4600 South Ulster, #930, Denver, CO 80237 / Tel: 303-850-9200
- ☐ Minneapolis Office: 123 North 3rd St., #808, Minneapolis, MN 55401 / Tel: 612-343-0510
- ☐ Woburn Office: 300 Trade Center, Suite 4690, Woburn, MA 01801
- ☐ Cazenovia Office: 5 Sullivan St., Cazenovia, NY 13035 / Tel: 315-655-3900

CHAIN OF CUSTODY RECORD

Project Number: 31999-5

Site and Location: WIX DILLON

Contact Name: ERIN HUNTLEY

Contact Email: erin.huntley@wspgroup.com

Sampler's Name: ERIN HUNTLEY

Sampler's Signature:

Matrices:
S = Soil:
Aq = Water
A = Air: Bu = Bulk
W = Wipe
BI = Biota:
OW = Oily Waste:
O = Other

Requested Analyses

Sample Identification:	Depth	Date	Time	Matrix	Number of Containers	VOCs (TCL) 8260	TOC 9060								Remarks	Nº 92199715
SB-15-1415		5/2	910	S	1		X									017
SB-16-0607			930		1		X									018
SB-17-2			1100		4	X										019
SB-101-2			1105		4	X										020
SB-18-2.5			1115		4	X										021
SB-4-2		5/1	1200		4	X										022
SB-16-1415		5/2	940		1		X									023
EB-050214		5/2	1100	W	6	X										024
TB-050214		—	—	W	6	X										025

END

END

Relinquished by (Signature):	Date | Time 5/2 1720	Received by (Signature):	Laboratory Name: PACE
Relinquished by (Signature):	Date | Time	Received by (Signature):	Laboratory Location: NC
Turn-Around Time:		Tracking Number:	Custody Seal Numbers: NA
			Method of Shipment: NA

WSP

~~WSP Environment & Energy~~

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- ☒ Pittsburgh Office: 750 Holiday Dr., #410, Pittsburgh, PA 15220 / Tel: 412-604-1040
- ☐ San Jose Office: 2025 Gateway Place, #435, San Jose, CA 95110 / Tel: 408-453-6100
- ☐ New Jersey Office: 200 Cottontail Ln., Somerset, NJ 08873 / Tel: 732-564-0888
- ☐ Denver Office: 4600 South Ulster, #930, Denver, CO 80237 / Tel: 303-850-9200
- ☐ Minneapolis Office: 123 North 3rd St., #808, Minneapolis, MN 55401 / Tel: 612-343-0510
- ☐ Woburn Office: 300 Trade Center, Suite 4690, Woburn, MA 01801
- ☐ Cazenovia Office: 5 Sullivan St., Cazenovia, NY 13035 / Tel: 315-655-3900

Data Validation Report for Soil Samples

Wix Filtration Corp LLC Facility
Dillon, South Carolina

May 7, 2014

Data Validation Report

Introduction

This Data Validation Report includes two soil samples collected at the Wix Filtration Corp LLC facility in Dillon, South Carolina (Site) from on May 7, 2014. The samples were analyzed by Pace Analytical Services, Inc. of Huntersville, North Carolina, for volatile organic compounds (VOCs) or total organic carbon (TOC) by U.S. Environmental Protection Agency (EPA) SW-846 Methods 8260 and 9060. The data were reviewed in accordance with the method and chain-of-custody criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (July 2007).

SDG#	92200677
Report Date	May 20, 2014
Guidance	National Functional Guidelines of Organic (July 2007) Data Review
Client Name	WSP
Project Name	Wix-Dillon, SC
Laboratory	Pace Analytical
Method Utilized	8260, 9060
Analytical Fraction	Volatile Organic Compounds, Total Organic Carbon

Date Sampled	Sample ID	Laboratory ID	Parameter	Matrix
5/7/2014	MW-11D	92200677001	TOC	soil
5/7/2014	SB-19	92200677002	VOCs	soil

Volatile Organic Compounds

A soil sample was analyzed for VOCs by EPA SW-846 Method 8260. The sample was reviewed for surrogate recovery, laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery, blank contamination, instrument performance, calibration, and calculation criteria.

Reviewed	Achieved Criteria	
■	■	Data Completeness
■	■	Holding Times
■		Calibration
■	■	Blanks
		System Monitoring
■	■	Compounds
■	■	Laboratory Control Sample
■		Matrix Spike/ Matrix Spike Duplicate
■	■	Internal Standards
		Target Compound
■	■	Identification
■	■	Compound Quantification and Reported Quantitation Limits
■	■	System Performance

Calibration

The initial and continuing calibration criteria were met.

Blanks

No analytes were detected in any method blank or the trip blank.

Field duplicate

There was no field duplicate sample collected.

Laboratory Control Sample/Laboratory Control Sample Duplicates

The spike recoveries in the LCS/LCSD were within acceptable limits.

Total Organic Carbon

Two soil samples were analyzed for TOC by EPA SW-846 Method 9060. The sample was reviewed for surrogate recovery, laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery, blank contamination, instrument performance, calibration, and calculation criteria.

Reviewed	Achieved Criteria	
■	■	Data Completeness
■	■	Holding Times
■	■	Blanks
■	■	Laboratory Control Sample
■	■	Target Compound Identification
■	■	Compound Quantification and Reported Quantitation Limits

Calibration

The initial and continuing calibration criteria were met.

Blanks

No analytes were detected in any method blank or the trip blank.

Field duplicate

There was no field duplicate sample collected.

Laboratory Control Sample/Laboratory Control Sample Duplicates

The spike recoveries in the LCS/LCSD were within acceptable limits.

Compound Quantification

The sample was not diluted. It was not necessary to qualify any of the results.

Overall Assessment of the Data

The data presented are acceptable as qualified for site characterization activities

Annotated Form 1's

Pace Analytical Services, Inc.
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(704)875-9092

ANALYTICAL RESULTS

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Sample: MW-11D **Lab ID: 92200677001** Collected: 05/07/14 18:35 Received: 05/09/14 10:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Total Organic Carbon Quad	Analytical Method: EPA 9060							
Surrogates								
RSD%	**5.1**	%		1		05/19/14 08:27		
Total Organic Carbon	**7920**	mg/kg	2440	1		05/19/14 08:27	7440-44-0	
Total Organic Carbon	**8000**	mg/kg	2440	1		05/19/14 08:33	7440-44-0	
Total Organic Carbon	**7810**	mg/kg	2460	1		05/19/14 08:38	7440-44-0	
Total Organic Carbon	**8720**	mg/kg	2410	1		05/19/14 08:44	7440-44-0	
Mean Total Organic Carbon	**8110**	mg/kg	2440	1		05/19/14 08:27	7440-44-0	

JKJ 8/13/14

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ANALYTICAL RESULTS

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Sample: SB-19 **Lab ID: 92200677002** Collected: 05/07/14 19:25 Received: 05/09/14 10:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260							
Acetone	ND	ug/kg	31.1	1		05/13/14 19:46	67-64-1	
Benzene	ND	ug/kg	1.6	1		05/13/14 19:46	71-43-2	
Bromochloromethane	ND	ug/kg	1.6	1		05/13/14 19:46	74-97-5	
Bromodichloromethane	ND	ug/kg	1.6	1		05/13/14 19:46	75-27-4	
Bromoform	ND	ug/kg	1.6	1		05/13/14 19:46	75-25-2	
Bromomethane	ND	ug/kg	3.1	1		05/13/14 19:46	74-83-9	
2-Butanone (MEK)	ND	ug/kg	31.1	1		05/13/14 19:46	78-93-3	
Carbon disulfide	ND	ug/kg	3.1	1		05/13/14 19:46	75-15-0	
Carbon tetrachloride	ND	ug/kg	1.6	1		05/13/14 19:46	56-23-5	
Chlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	108-90-7	
Chloroethane	ND	ug/kg	3.1	1		05/13/14 19:46	75-00-3	
Chloroform	ND	ug/kg	1.6	1		05/13/14 19:46	67-66-3	
Chloromethane	ND	ug/kg	3.1	1		05/13/14 19:46	74-87-3	
Cyclohexane	ND	ug/kg	1.6	1		05/13/14 19:46	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/kg	1.6	1		05/13/14 19:46	96-12-8	
Dibromochloromethane	ND	ug/kg	1.6	1		05/13/14 19:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	1.6	1		05/13/14 19:46	106-93-4	
1,2-Dichlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	3.1	1		05/13/14 19:46	75-71-8	
1,1-Dichloroethane	ND	ug/kg	1.6	1		05/13/14 19:46	75-34-3	
1,2-Dichloroethane	ND	ug/kg	1.6	1		05/13/14 19:46	107-06-2	
1,1-Dichloroethene	ND	ug/kg	1.6	1		05/13/14 19:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	1.6	1		05/13/14 19:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	1.6	1		05/13/14 19:46	156-60-5	
1,2-Dichloropropane	ND	ug/kg	1.6	1		05/13/14 19:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/kg	1.6	1		05/13/14 19:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	1.6	1		05/13/14 19:46	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/kg	46.7	1		05/13/14 19:46	123-91-1	
Ethylbenzene	ND	ug/kg	1.6	1		05/13/14 19:46	100-41-4	
2-Hexanone	ND	ug/kg	15.6	1		05/13/14 19:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	1.6	1		05/13/14 19:46	98-82-8	
Methyl acetate	ND	ug/kg	3.1	1		05/13/14 19:46	79-20-9	
Methylcyclohexane	ND	ug/kg	3.1	1		05/13/14 19:46	108-87-2	
Methylene Chloride	ND	ug/kg	6.2	1		05/13/14 19:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	15.6	1		05/13/14 19:46	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	1.6	1		05/13/14 19:46	1634-04-4	
Styrene	ND	ug/kg	1.6	1		05/13/14 19:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.6	1		05/13/14 19:46	79-34-5	
Tetrachloroethene	ND	ug/kg	1.6	1		05/13/14 19:46	127-18-4	
Toluene	**61.9**	ug/kg	1.6	1		05/13/14 19:46	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	1.6	1		05/13/14 19:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	1.6	1		05/13/14 19:46	79-00-5	

JKJ 8/13/14

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Sample: SB-19 **Lab ID: 92200677002** Collected: 05/07/14 19:25 Received: 05/09/14 10:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260							
Trichloroethene	ND	ug/kg	1.6	1		05/13/14 19:46	79-01-6	
Trichlorofluoromethane	ND	ug/kg	1.6	1		05/13/14 19:46	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	1.6	1		05/13/14 19:46	76-13-1	
Vinyl chloride	ND	ug/kg	3.1	1		05/13/14 19:46	75-01-4	
m&p-Xylene	ND	ug/kg	3.1	1		05/13/14 19:46	179601-23-1	
o-Xylene	ND	ug/kg	1.6	1		05/13/14 19:46	95-47-6	
Surrogates								
Toluene-d8 (S)	104	%	70-130	1		05/13/14 19:46	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130	1		05/13/14 19:46	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130	1		05/13/14 19:46	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**16.2**	%	0.10	1		05/12/14 14:50		

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May 20, 2014

Pam Groff
WSP
11190 Sunrise Valley Drive
Reston, VA 20191

RE: Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Dear Pam Groff:
Enclosed are the analytical results for sample(s) received by the laboratory on May 09, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Godwin
kevin.godwin@pacelabs.com
Project Manager

Enclosures

cc: Erin Huntley, WSP

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CERTIFICATIONS

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Green Bay Certification IDs
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 11888
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

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SAMPLE ANALYTE COUNT

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92200677001	**MW-11D**	EPA 9060	TJJ	6	PASI-G
92200677002	**SB-19**	EPA 8260	DLK	55	PASI-C
		ASTM D2974-87	AES	1	PASI-C

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PROJECT NARRATIVE

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Method: **EPA 8260**
Description: 8260/5035A SC Volatile Org
Client: WSP Environmental Strategies
Date: May 20, 2014

General Information:
1 sample was analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Method: **EPA 9060**
Description: Total Organic Carbon Quad
Client: WSP Environmental Strategies
Date: May 20, 2014

General Information:
1 sample was analyzed for EPA 9060. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Sample: MW-11D **Lab ID: 92200677001** Collected: 05/07/14 18:35 Received: 05/09/14 10:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Total Organic Carbon Quad	Analytical Method: EPA 9060							
Surrogates								
RSD%	**5.1**	%		1		05/19/14 08:27		
Total Organic Carbon	**7920**	mg/kg	2440	1		05/19/14 08:27	7440-44-0	
Total Organic Carbon	**8000**	mg/kg	2440	1		05/19/14 08:33	7440-44-0	
Total Organic Carbon	**7810**	mg/kg	2460	1		05/19/14 08:38	7440-44-0	
Total Organic Carbon	**8720**	mg/kg	2410	1		05/19/14 08:44	7440-44-0	
Mean Total Organic Carbon	**8110**	mg/kg	2440	1		05/19/14 08:27	7440-44-0	

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ANALYTICAL RESULTS

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Sample: SB-19 **Lab ID: 92200677002** Collected: 05/07/14 19:25 Received: 05/09/14 10:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260							
Acetone	ND	ug/kg	31.1	1		05/13/14 19:46	67-64-1	
Benzene	ND	ug/kg	1.6	1		05/13/14 19:46	71-43-2	
Bromochloromethane	ND	ug/kg	1.6	1		05/13/14 19:46	74-97-5	
Bromodichloromethane	ND	ug/kg	1.6	1		05/13/14 19:46	75-27-4	
Bromoform	ND	ug/kg	1.6	1		05/13/14 19:46	75-25-2	
Bromomethane	ND	ug/kg	3.1	1		05/13/14 19:46	74-83-9	
2-Butanone (MEK)	ND	ug/kg	31.1	1		05/13/14 19:46	78-93-3	
Carbon disulfide	ND	ug/kg	3.1	1		05/13/14 19:46	75-15-0	
Carbon tetrachloride	ND	ug/kg	1.6	1		05/13/14 19:46	56-23-5	
Chlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	108-90-7	
Chloroethane	ND	ug/kg	3.1	1		05/13/14 19:46	75-00-3	
Chloroform	ND	ug/kg	1.6	1		05/13/14 19:46	67-66-3	
Chloromethane	ND	ug/kg	3.1	1		05/13/14 19:46	74-87-3	
Cyclohexane	ND	ug/kg	1.6	1		05/13/14 19:46	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/kg	1.6	1		05/13/14 19:46	96-12-8	
Dibromochloromethane	ND	ug/kg	1.6	1		05/13/14 19:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	1.6	1		05/13/14 19:46	106-93-4	
1,2-Dichlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	3.1	1		05/13/14 19:46	75-71-8	
1,1-Dichloroethane	ND	ug/kg	1.6	1		05/13/14 19:46	75-34-3	
1,2-Dichloroethane	ND	ug/kg	1.6	1		05/13/14 19:46	107-06-2	
1,1-Dichloroethene	ND	ug/kg	1.6	1		05/13/14 19:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	1.6	1		05/13/14 19:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	1.6	1		05/13/14 19:46	156-60-5	
1,2-Dichloropropane	ND	ug/kg	1.6	1		05/13/14 19:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/kg	1.6	1		05/13/14 19:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	1.6	1		05/13/14 19:46	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/kg	46.7	1		05/13/14 19:46	123-91-1	
Ethylbenzene	ND	ug/kg	1.6	1		05/13/14 19:46	100-41-4	
2-Hexanone	ND	ug/kg	15.6	1		05/13/14 19:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	1.6	1		05/13/14 19:46	98-82-8	
Methyl acetate	ND	ug/kg	3.1	1		05/13/14 19:46	79-20-9	
Methylcyclohexane	ND	ug/kg	3.1	1		05/13/14 19:46	108-87-2	
Methylene Chloride	ND	ug/kg	6.2	1		05/13/14 19:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	15.6	1		05/13/14 19:46	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	1.6	1		05/13/14 19:46	1634-04-4	
Styrene	ND	ug/kg	1.6	1		05/13/14 19:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.6	1		05/13/14 19:46	79-34-5	
Tetrachloroethene	ND	ug/kg	1.6	1		05/13/14 19:46	127-18-4	
Toluene	**61.9**	ug/kg	1.6	1		05/13/14 19:46	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	1.6	1		05/13/14 19:46	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	1.6	1		05/13/14 19:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	1.6	1		05/13/14 19:46	79-00-5	

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ANALYTICAL RESULTS

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Sample: SB-19 **Lab ID: 92200677002** Collected: 05/07/14 19:25 Received: 05/09/14 10:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260							
Trichloroethene	ND	ug/kg	1.6	1		05/13/14 19:46	79-01-6	
Trichlorofluoromethane	ND	ug/kg	1.6	1		05/13/14 19:46	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	1.6	1		05/13/14 19:46	76-13-1	
Vinyl chloride	ND	ug/kg	3.1	1		05/13/14 19:46	75-01-4	
m&p-Xylene	ND	ug/kg	3.1	1		05/13/14 19:46	179601-23-1	
o-Xylene	ND	ug/kg	1.6	1		05/13/14 19:46	95-47-6	
Surrogates								
Toluene-d8 (S)	104	%	70-130	1		05/13/14 19:46	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130	1		05/13/14 19:46	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130	1		05/13/14 19:46	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**16.2**	%	0.10	1		05/12/14 14:50		

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QUALITY CONTROL DATA

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

QC Batch: MSV/26790
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 92200677002

METHOD BLANK: 1197438
Matrix: Solid
Associated Lab Samples: 92200677002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	ND	5.2	05/13/14 14:49	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.2	05/13/14 14:49	
1,1,2-Trichloroethane	ug/kg	ND	5.2	05/13/14 14:49	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	5.2	05/13/14 14:49	
1,1-Dichloroethane	ug/kg	ND	5.2	05/13/14 14:49	
1,1-Dichloroethene	ug/kg	ND	5.2	05/13/14 14:49	
1,2,3-Trichlorobenzene	ug/kg	ND	5.2	05/13/14 14:49	
1,2,4-Trichlorobenzene	ug/kg	ND	5.2	05/13/14 14:49	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.2	05/13/14 14:49	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.2	05/13/14 14:49	
1,2-Dichlorobenzene	ug/kg	ND	5.2	05/13/14 14:49	
1,2-Dichloroethane	ug/kg	ND	5.2	05/13/14 14:49	
1,2-Dichloropropane	ug/kg	ND	5.2	05/13/14 14:49	
1,3-Dichlorobenzene	ug/kg	ND	5.2	05/13/14 14:49	
1,4-Dichlorobenzene	ug/kg	ND	5.2	05/13/14 14:49	
1,4-Dioxane (p-Dioxane)	ug/kg	ND	155	05/13/14 14:49	
2-Butanone (MEK)	ug/kg	ND	103	05/13/14 14:49	
2-Hexanone	ug/kg	ND	51.5	05/13/14 14:49	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	51.5	05/13/14 14:49	
Acetone	ug/kg	ND	103	05/13/14 14:49	
Benzene	ug/kg	ND	5.2	05/13/14 14:49	
Bromochloromethane	ug/kg	ND	5.2	05/13/14 14:49	
Bromodichloromethane	ug/kg	ND	5.2	05/13/14 14:49	
Bromoform	ug/kg	ND	5.2	05/13/14 14:49	
Bromomethane	ug/kg	ND	10.3	05/13/14 14:49	
Carbon disulfide	ug/kg	ND	10.3	05/13/14 14:49	
Carbon tetrachloride	ug/kg	ND	5.2	05/13/14 14:49	
Chlorobenzene	ug/kg	ND	5.2	05/13/14 14:49	
Chloroethane	ug/kg	ND	10.3	05/13/14 14:49	
Chloroform	ug/kg	ND	5.2	05/13/14 14:49	
Chloromethane	ug/kg	ND	10.3	05/13/14 14:49	
cis-1,2-Dichloroethene	ug/kg	ND	5.2	05/13/14 14:49	
cis-1,3-Dichloropropene	ug/kg	ND	5.2	05/13/14 14:49	
Cyclohexane	ug/kg	ND	5.2	05/13/14 14:49	
Dibromochloromethane	ug/kg	ND	5.2	05/13/14 14:49	
Dichlorodifluoromethane	ug/kg	ND	10.3	05/13/14 14:49	
Ethylbenzene	ug/kg	ND	5.2	05/13/14 14:49	
Isopropylbenzene (Cumene)	ug/kg	ND	5.2	05/13/14 14:49	
m&p-Xylene	ug/kg	ND	10.3	05/13/14 14:49	
Methyl acetate	ug/kg	ND	10.3	05/13/14 14:49	
Methyl-tert-butyl ether	ug/kg	ND	5.2	05/13/14 14:49	
Methylcyclohexane	ug/kg	ND	10.3	05/13/14 14:49	
Methylene Chloride	ug/kg	ND	20.6	05/13/14 14:49	

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QUALITY CONTROL DATA

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

METHOD BLANK: 1197438 Matrix: Solid
Associated Lab Samples: 92200677002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
o-Xylene	ug/kg	ND	5.2	05/13/14 14:49	
Styrene	ug/kg	ND	5.2	05/13/14 14:49	
Tetrachloroethene	ug/kg	ND	5.2	05/13/14 14:49	
Toluene	ug/kg	ND	5.2	05/13/14 14:49	
trans-1,2-Dichloroethene	ug/kg	ND	5.2	05/13/14 14:49	
trans-1,3-Dichloropropene	ug/kg	ND	5.2	05/13/14 14:49	
Trichloroethene	ug/kg	ND	5.2	05/13/14 14:49	
Trichlorofluoromethane	ug/kg	ND	5.2	05/13/14 14:49	
Vinyl chloride	ug/kg	ND	10.3	05/13/14 14:49	
1,2-Dichloroethane-d4 (S)	%	89	70-130	05/13/14 14:49	
4-Bromofluorobenzene (S)	%	101	70-130	05/13/14 14:49	
Toluene-d8 (S)	%	101	70-130	05/13/14 14:49	

LABORATORY CONTROL SAMPLE: 1197439

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	49.1	44.7	91	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	49.1	57.5	117	70-130	
1,1,2-Trichloroethane	ug/kg	49.1	52.2	106	70-130	
1,1,2-Trichlorotrifluoroethane	ug/kg	49.1	39.9	81	70-130	
1,1-Dichloroethane	ug/kg	49.1	48.0	98	70-130	
1,1-Dichloroethene	ug/kg	49.1	47.6	97	70-130	
1,2,3-Trichlorobenzene	ug/kg	49.1	55.4	113	70-130	
1,2,4-Trichlorobenzene	ug/kg	49.1	56.0	114	70-130	
1,2-Dibromo-3-chloropropane	ug/kg	49.1	58.0	118	70-130	
1,2-Dibromoethane (EDB)	ug/kg	49.1	52.3	106	70-130	
1,2-Dichlorobenzene	ug/kg	49.1	58.1	118	70-130	
1,2-Dichloroethane	ug/kg	49.1	47.2	96	70-130	
1,2-Dichloropropane	ug/kg	49.1	48.6	99	70-130	
1,3-Dichlorobenzene	ug/kg	49.1	55.3	113	70-130	
1,4-Dichlorobenzene	ug/kg	49.1	58.1	118	70-130	
1,4-Dioxane (p-Dioxane)	ug/kg	982	862	88	70-130	
2-Butanone (MEK)	ug/kg	98.2	75.9J	77	70-130	
2-Hexanone	ug/kg	98.2	88.2	90	70-130	
4-Methyl-2-pentanone (MIBK)	ug/kg	98.2	86.6	88	70-130	
Acetone	ug/kg	98.2	73.6J	75	70-130	
Benzene	ug/kg	49.1	48.8	99	70-130	
Bromochloromethane	ug/kg	49.1	51.5	105	70-130	
Bromodichloromethane	ug/kg	49.1	52.3	107	70-130	
Bromoform	ug/kg	49.1	58.9	120	70-130	
Bromomethane	ug/kg	49.1	52.9	108	70-130	
Carbon disulfide	ug/kg	49.1	38.1	78	70-130	
Carbon tetrachloride	ug/kg	49.1	48.4	99	70-130	
Chlorobenzene	ug/kg	49.1	51.9	106	70-130	
Chloroethane	ug/kg	49.1	47.8	97	70-130	

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QUALITY CONTROL DATA

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

LABORATORY CONTROL SAMPLE: 1197439

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/kg	49.1	51.5	105	70-130	
Chloromethane	ug/kg	49.1	45.3	92	70-130	
cis-1,2-Dichloroethene	ug/kg	49.1	49.7	101	70-130	
cis-1,3-Dichloropropene	ug/kg	49.1	51.1	104	70-130	
Cyclohexane	ug/kg	49.1	37.2	76	70-130	
Dibromochloromethane	ug/kg	49.1	55.7	113	70-130	
Dichlorodifluoromethane	ug/kg	49.1	55.0	112	70-130	
Ethylbenzene	ug/kg	49.1	55.7	113	70-130	
Isopropylbenzene (Cumene)	ug/kg	49.1	58.3	119	70-130	
m&p-Xylene	ug/kg	98.2	111	113	70-130	
Methyl acetate	ug/kg	49.1	58.9	120	70-130	
Methyl-tert-butyl ether	ug/kg	49.1	40.1	82	70-130	
Methylcyclohexane	ug/kg	49.1	41.8	85	70-130	
Methylene Chloride	ug/kg	49.1	47.0	96	70-130	
o-Xylene	ug/kg	49.1	55.2	112	70-130	
Styrene	ug/kg	49.1	57.2	117	70-130	
Tetrachloroethene	ug/kg	49.1	54.2	110	70-130	
Toluene	ug/kg	49.1	52.9	108	70-130	
trans-1,2-Dichloroethene	ug/kg	49.1	49.3	100	70-130	
trans-1,3-Dichloropropene	ug/kg	49.1	51.9	106	70-130	
Trichloroethene	ug/kg	49.1	53.1	108	70-130	
Trichlorofluoromethane	ug/kg	49.1	49.4	101	70-130	
Vinyl chloride	ug/kg	49.1	55.2	112	70-130	
1,2-Dichloroethane-d4 (S)	%			87	70-130	
4-Bromofluorobenzene (S)	%			103	70-130	
Toluene-d8 (S)	%			99	70-130	

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QUALITY CONTROL DATA

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

QC Batch: PMST/6547
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92200677002

SAMPLE DUPLICATE: 1196398

Parameter	Units	92200625001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	33.5	26.9	22	

SAMPLE DUPLICATE: 1196399

Parameter	Units	92200754001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	26.9	26.4	2	

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QUALITY CONTROL DATA

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

QC Batch: WETA/23195
QC Batch Method: EPA 9060
Analysis Method: EPA 9060
Analysis Description: 9060 TOC Average
Associated Lab Samples: 92200677001

METHOD BLANK: 973638
Matrix: Solid
Associated Lab Samples:

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/kg	ND	600	05/19/14 09:35	

LABORATORY CONTROL SAMPLE: 973639

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/kg	120000	129000	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 973640 973641

Parameter	Units	92200677001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mean Total Organic Carbon	mg/kg	8110	24300	24100	35900	32200	115	100	50-150	11	

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QUALIFIERS

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte
PASI-G	Pace Analytical Services - Green Bay

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31999 WIX DILLION,SC
Pace Project No.: 92200677

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92200677002	**SB-19**	EPA 8260	MSV/26790		
92200677002	**SB-19**	ASTM D2974-87	PMST/6547		
92200677001	**MW-11D**	EPA 9060	WETA/23195		
92200677001	**MW-11D**	EPA 9060	WETA/23196		

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Pace Analytical	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: April 07, 2014 Page 1 of 2
	Document Number: **F-CHR-CS-003-rev.14**	Issuing Authority: Pace Huntersville Quality Office

Client Name: WSP Env.

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1102 (T1401) **Type of Ice:** (Wet) Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor **T1102**: No Correction **T1301**: No Correction

Corrected Cooler Temp.: 2.5 °C **Biological Tissue is Frozen:** Yes No (N/A)

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 05/9/14

				Comments:
Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix:_____				
All containers needing preservation have been checked.	☐Yes	☐No	☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes	☑No		
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☑N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):_____				

05/9/14

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: [signature] **Date:** 5/9/14

SRF Review: [signature] **Date:** 5/12/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 92200677

92200677

CHAIN OF CUSTODY RECORD

Project Number: 31999

Site and Location: Wix / Dillon, SC

Contact Name: Erin.Huntley

Contact Email: @WSPGroup.com

Sampler's Name: P. Zarella

Sampler's Signature: PZ

Matrices:
S = Soil:
Aq = Water
A = Air: Bu = Bulk
W = Wipe
Bi = Biota:
OW = Oily Waste:
O = Other

Requested Analyses

Sample Identification:	Depth	Date	Time	Matrix	Number of Containers	TOC	VOCs								Remarks
MW-11D	30'	5-7-14	1835	S	1	X									0n20061001
SB-19	3'	5-7-14	1925	S	4		X								

Relinquished by (Signature): PZ — Date / Time: 5/8/14 1400

Received by (Signature): 5/9/14 — PACE 1010

Relinquished by (Signature): — Date / Time:

Received by (Signature):

Turn-Around Time:

Tracking Number:

Laboratory Name: Pace

Laboratory Location: Huntersville, NC

Custody Seal Numbers: 01285 01299

Method of Shipment: GROUND

WSP
WSP Environment & Energy

- ☐ Reston Office: 11190 Sunrise Valley Dr., #300, Reston, VA 20191 / Tel: 703-709-6500
- ☒ Pittsburgh Office: 750 Holiday Dr., #410, Pittsburgh, PA 15220 / Tel: 412-604-1040
- ☐ San Jose Office: 2025 Gateway Place, #435, San Jose, CA 95110 / Tel: 408-453-6100
- ☐ New Jersey Office: 200 Cottontail Ln., Somerset, NJ 08873 / Tel: 732-564-0888
- ☐ Denver Office: 4600 South Ulster, #930, Denver, CO 80237 / Tel: 303-850-9200
- ☐ Minneapolis Office: 123 North 3rd St., #808, Minneapolis, MN 55401 / Tel: 612-343-0510
- ☐ Woburn Office: 300 Trade Center, Suite 4690, Woburn, MA 01801
- ☐ Cazenovia Office: 5 Sullivan St., Cazenovia, NY 13035 / Tel: 315-655-3900

Data Validation Report for Water Samples

Wix Filtration Corp LLC Facility
Dillon, South Carolina

May 27-30, 2014

Data Validation Report

Introduction

This Data Validation Report includes nineteen water samples, an equipment blank and two trip blanks collected at the Wix Filtration Corp LLC facility in Dillon, South Carolina (Site) on May 27-30, 2014. The samples were analyzed by Pace Analytical Services, Inc. of Huntersville, North Carolina, for volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) SW-846 Method 8260. The data were reviewed in accordance with the method and chain-of-custody criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (July 2007).

SDG#	92203514
Report Date	June 16, 2014
Guidance	National Functional Guidelines of Organic (July 2007) Data Review
Client Name	WSP
Project Name	Wix-Dillon, SC
Laboratory	Pace Analytical
Method Utilized	SW-846 Method 8260
Analytical Fraction	Volatile Organic Compounds

Date Sampled	Sample ID	Laboratory ID	Parameter	Matrix
5/27/2014	MW-1	9203514001	VOCs	water
5/27/2014	**MW-300**	**9203514002**	**VOCs**	**water**
5/27/2014	MW-12-38	9203514003	VOCs	water
5/28/2014	**MW-11-36**	**9203514004**	**VOCs**	**water**
5/28/2014	TB043014	9203514005	VOCs	water
5/28/2014	**MW-300D**	**9203514006**	**VOCs**	**water**
5/28/2014	MW-11	9203514007	VOCs	water
5/28/2014	**MW-10**	**9203514008**	**VOCs**	**water**
5/28/2014	MW-15	9203514009	VOCs	water
5/28/2014	**MW-9**	**9203514010**	**VOCs**	**water**
5/29/2014	MW-14	9203514011	VOCs	water
5/29/2014	**MW-08**	**9203514012**	**VOCs**	**water**
5/29/2014	EB-BP-052914	9203514013	VOCs	water
5/29/2014	**MW-7**	**9203514014**	**VOCs**	**water**
5/29/2014	MW-2	9203514015	VOCs	water
5/29/2014	**MW-5**	**9203514016**	**VOCs**	**water**
5/29/2014	MW-12	9203514017	VOCs	water
5/29/2014	**MW-6**	**9203514018**	**VOCs**	**water**
5/29/2014	MW-13	9203514019	VOCs	water
5/29/2014	**MW-14**	**9203514020**	**VOCs**	**water**
5/30/2014	MW-3	9203514021	VOCs	water
5/30/2014	**TB-053014**	**9203514022**	**VOCs**	**water**

Volatile Organic Compounds

Twenty water samples and two trip blanks were analyzed for VOCs by EPA SW-846 Method 8260. The sample IDs in bold were reviewed for surrogate recovery, laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery, blank contamination, instrument performance, calibration, and calculation criteria.

Reviewed	Achieved Criteria	
■	■	Data Completeness
■	■	Holding Times
■		Calibration
■	■	Blanks
■	■	System Monitoring Compounds

- Laboratory Control Sample
- Matrix Spike/ Matrix Spike Duplicate
- Internal Standards
- Target Compound Identification
- Compound Quantification and Reported Quantitation Limits
- System Performance

Calibration

Several target analytes exceeded the criteria for the continuing calibrations on June 2-4, 2014. These analytes were qualified, “J”, as estimated, for the associated samples.

Blanks

No analytes were detected in any method blank or the trip blank.

Field duplicate

Field duplicates were collected for samples MW-1 and MW-11-36.
There was good agreement between the sample and its associated duplicate for most analytes. There was a positive result for acetone in the duplicate of MW-11-36 below the reporting limit and a non-detectable acetone result in MW-11-36. It was not necessary to qualify any results for duplicate agreement.

Matrix Spike/Matrix Spike Duplicates

Several analytes had elevated recoveries in the MS/MSD sample. It was not necessary to qualify any of the results since data is rarely qualified for MS/MSD alone.

Compound Quantification

The samples listed below was diluted as indicated to bring the toluene result into the instrument calibration range. The toluene results were qualified, “D”, indicating the result is from a secondary dilution in the samples listed below.

Sample ID	Dilution Factor
MW-2	4x
MW-13	500X

Overall Assessment of the Data

The data presented are acceptable as qualified for site characterization activities.

Annotated Form 1's

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ANALYTICAL RESULTS

JKJ 8/13/14

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-300 **Lab ID: 92203514002** Collected: 05/27/14 16:42 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 17:19	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/02/14 17:19	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 17:19	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 17:19	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 17:19	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 17:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 17:19	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 17:19	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 17:19	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 17:19	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 17:19	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 17:19	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 17:19	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 17:19	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 17:19	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 17:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 17:19	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 17:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 17:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 17:19	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 17:19	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 17:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 17:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/02/14 17:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/02/14 17:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/02/14 17:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 17:19	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 17:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 17:19	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 17:19	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/02/14 17:19	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 17:19	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/02/14 17:19	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 17:19	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 17:19	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 17:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 17:19	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 17:19	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 17:19	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 17:19	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/02/14 17:19	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		06/02/14 17:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 17:19	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 17:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 17:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 17:19	79-00-5	

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-300 **Lab ID: 92203514002** Collected: 05/27/14 16:42 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 17:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 17:19	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 17:19	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/02/14 17:19	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/02/14 17:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/02/14 17:19	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		06/02/14 17:19	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		06/02/14 17:19	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/02/14 17:19	2037-26-5	

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ANALYTICAL RESULTS

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Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-11-36 **Lab ID: 92203514004** Collected: 05/28/14 09:57 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 02:56	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/03/14 02:56	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 02:56	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 02:56	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 02:56	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 02:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 02:56	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 02:56	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 02:56	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 02:56	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 02:56	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 02:56	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 02:56	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 02:56	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 02:56	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 02:56	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 02:56	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 02:56	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 02:56	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 02:56	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 02:56	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 02:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 02:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 02:56	75-35-4	
cis-1,2-Dichloroethene	**10.5**	ug/L	1.0	0.19	1		06/03/14 02:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 02:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 02:56	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 02:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 02:56	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 02:56	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/03/14 02:56	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 02:56	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 02:56	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 02:56	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 02:56	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 02:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 02:56	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 02:56	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 02:56	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 02:56	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 02:56	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		06/03/14 02:56	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 02:56	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 02:56	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 02:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 02:56	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-11-36 **Lab ID: 92203514004** Collected: 05/28/14 09:57 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 02:56	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 02:56	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 02:56	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 02:56	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/03/14 02:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/03/14 02:56	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		06/03/14 02:56	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/03/14 02:56	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/03/14 02:56	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-11 **Lab ID: 92203514006** Collected: 05/28/14 11:32 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 18:06	67-64-1	
Benzene	**10.0**	ug/L	1.0	0.25	1		06/02/14 18:06	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 18:06	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 18:06	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 18:06	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 18:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 18:06	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 18:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 18:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 18:06	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 18:06	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 18:06	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 18:06	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 18:06	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 18:06	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 18:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 18:06	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 18:06	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 18:06	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 18:06	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 18:06	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 18:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 18:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/02/14 18:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/02/14 18:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/02/14 18:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 18:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 18:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 18:06	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 18:06	123-91-1	
Ethylbenzene	**8.0**	ug/L	1.0	0.30	1		06/02/14 18:06	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 18:06	591-78-6	
Isopropylbenzene (Cumene)	**0.52J**	ug/L	1.0	0.40	1		06/02/14 18:06	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 18:06	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 18:06	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 18:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 18:06	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 18:06	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 18:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 18:06	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/02/14 18:06	127-18-4	
Toluene	**22700**	ug/L	200	52.0	200		06/04/14 09:33	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 18:06	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 18:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 18:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 18:06	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-11 **Lab ID: 92203514006** Collected: 05/28/14 11:32 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 18:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 18:06	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 18:06	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/02/14 18:06	75-01-4	
m&p-Xylene	**10.4**	ug/L	2.0	0.66	1		06/02/14 18:06	179601-23-1	
o-Xylene	**2.0**	ug/L	1.0	0.23	1		06/02/14 18:06	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		06/02/14 18:06	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		06/02/14 18:06	17060-07-0	
Toluene-d8 (S)	86	%	70-130		1		06/02/14 18:06	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-15 **Lab ID: 92203514008** Collected: 05/28/14 16:26 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 18:37	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/02/14 18:37	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 18:37	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 18:37	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 18:37	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 18:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 18:37	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 18:37	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 18:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 18:37	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 18:37	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 18:37	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 18:37	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 18:37	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 18:37	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 18:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 18:37	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 18:37	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 18:37	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 18:37	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 18:37	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 18:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 18:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/02/14 18:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/02/14 18:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/02/14 18:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 18:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 18:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 18:37	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 18:37	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/02/14 18:37	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 18:37	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/02/14 18:37	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 18:37	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 18:37	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 18:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 18:37	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 18:37	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 18:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 18:37	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/02/14 18:37	127-18-4	
Toluene	**3.5**	ug/L	1.0	0.26	1		06/02/14 18:37	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 18:37	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 18:37	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 18:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 18:37	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-15 **Lab ID: 92203514008** Collected: 05/28/14 16:26 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 18:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 18:37	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 18:37	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/02/14 18:37	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/02/14 18:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/02/14 18:37	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/02/14 18:37	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/02/14 18:37	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		06/02/14 18:37	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-14 **Lab ID: 92203514010** Collected: 05/28/14 18:27 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 19:08	67-64-1	
Benzene	**0.44J**	ug/L	1.0	0.25	1		06/02/14 19:08	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 19:08	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 19:08	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 19:08	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 19:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 19:08	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 19:08	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 19:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 19:08	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 19:08	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 19:08	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 19:08	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 19:08	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 19:08	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 19:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 19:08	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 19:08	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 19:08	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 19:08	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 19:08	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 19:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 19:08	107-06-2	
1,1-Dichloroethene	**4.9**	ug/L	1.0	0.56	1		06/02/14 19:08	75-35-4	
cis-1,2-Dichloroethene	**1930**	ug/L	20.0	3.8	20		06/03/14 19:30	156-59-2	
trans-1,2-Dichloroethene	**0.89J**	ug/L	1.0	0.49	1		06/02/14 19:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 19:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 19:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 19:08	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 19:08	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/02/14 19:08	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 19:08	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/02/14 19:08	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 19:08	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 19:08	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 19:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 19:08	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 19:08	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 19:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 19:08	79-34-5	
Tetrachloroethene	**1.1**	ug/L	1.0	0.46	1		06/02/14 19:08	127-18-4	
Toluene	**1.4**	ug/L	1.0	0.26	1		06/02/14 19:08	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 19:08	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 19:08	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 19:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 19:08	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-14 **Lab ID: 92203514010** Collected: 05/28/14 18:27 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 19:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 19:08	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 19:08	76-13-1	
Vinyl chloride	**1.8**	ug/L	1.0	0.62	1		06/02/14 19:08	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/02/14 19:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/02/14 19:08	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		06/02/14 19:08	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/02/14 19:08	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/02/14 19:08	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: EB-BP-052914 **Lab ID: 92203514012** Collected: 05/29/14 09:20 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 18:28	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/03/14 18:28	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 18:28	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 18:28	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 18:28	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 18:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 18:28	78-93-3	
Carbon disulfide	**5.0**	ug/L	2.0	1.2	1		06/03/14 18:28	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 18:28	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 18:28	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 18:28	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 18:28	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 18:28	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 18:28	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 18:28	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 18:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 18:28	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 18:28	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 18:28	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 18:28	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 18:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 18:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 18:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 18:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/03/14 18:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 18:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 18:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 18:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 18:28	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 18:28	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/03/14 18:28	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 18:28	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 18:28	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 18:28	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 18:28	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 18:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 18:28	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 18:28	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 18:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 18:28	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 18:28	127-18-4	
Toluene	**7.1**	ug/L	1.0	0.26	1		06/03/14 18:28	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 18:28	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 18:28	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 18:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 18:28	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: EB-BP-052914 **Lab ID: 92203514012** Collected: 05/29/14 09:20 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 18:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 18:28	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 18:28	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 18:28	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/03/14 18:28	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/03/14 18:28	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/03/14 18:28	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/03/14 18:28	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		06/03/14 18:28	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-2 **Lab ID: 92203514014** Collected: 05/29/14 11:02 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	**40.7J**	ug/L	100	40.0	4		06/03/14 11:01	67-64-1	
Benzene	**38.6**	ug/L	4.0	1.0	4		06/03/14 11:01	71-43-2	
Bromochloromethane	ND	ug/L	4.0	0.68	4		06/03/14 11:01	74-97-5	
Bromodichloromethane	ND	ug/L	4.0	0.72	4		06/03/14 11:01	75-27-4	
Bromoform	ND	ug/L	4.0	1.0	4		06/03/14 11:01	75-25-2	
Bromomethane	ND	ug/L	20.0	1.2	4		06/03/14 11:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	20.0	3.8	4		06/03/14 11:01	78-93-3	
Carbon disulfide	ND	ug/L	8.0	4.6	4		06/03/14 11:01	75-15-0	
Carbon tetrachloride	ND	ug/L	4.0	1.0	4		06/03/14 11:01	56-23-5	
Chlorobenzene	ND	ug/L	4.0	0.92	4		06/03/14 11:01	108-90-7	
Chloroethane	ND	ug/L	4.0	2.2	4		06/03/14 11:01	75-00-3	
Chloroform	ND	ug/L	4.0	0.56	4		06/03/14 11:01	67-66-3	
Chloromethane	ND	ug/L	4.0	0.44	4		06/03/14 11:01	74-87-3	
Cyclohexane	ND	ug/L	4.0	1.4	4		06/03/14 11:01	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	12.0	10.1	4		06/03/14 11:01	96-12-8	
Dibromochloromethane	ND	ug/L	4.0	0.84	4		06/03/14 11:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	4.0	1.1	4		06/03/14 11:01	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	4.0	1.2	4		06/03/14 11:01	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	4.0	0.96	4		06/03/14 11:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	4.0	1.3	4		06/03/14 11:01	106-46-7	
Dichlorodifluoromethane	ND	ug/L	4.0	0.84	4		06/03/14 11:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	4.0	1.3	4		06/03/14 11:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	4.0	0.48	4		06/03/14 11:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	4.0	2.2	4		06/03/14 11:01	75-35-4	
cis-1,2-Dichloroethene	**1.4J**	ug/L	4.0	0.76	4		06/03/14 11:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	4.0	2.0	4		06/03/14 11:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	4.0	1.1	4		06/03/14 11:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	4.0	0.52	4		06/03/14 11:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1.0	4		06/03/14 11:01	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	600	313	4		06/03/14 11:01	123-91-1	
Ethylbenzene	**9.3**	ug/L	4.0	1.2	4		06/03/14 11:01	100-41-4	
2-Hexanone	ND	ug/L	20.0	1.8	4		06/03/14 11:01	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	4.0	1.6	4		06/03/14 11:01	98-82-8	
Methyl acetate	ND	ug/L	40.0	3.3	4		06/03/14 11:01	79-20-9	
Methylcyclohexane	ND	ug/L	40.0	7.5	4		06/03/14 11:01	108-87-2	
Methylene Chloride	**10.5**	ug/L	8.0	3.9	4		06/03/14 11:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	20.0	1.3	4		06/03/14 11:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	4.0	0.84	4		06/03/14 11:01	1634-04-4	
Styrene	ND	ug/L	4.0	1.0	4		06/03/14 11:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	4.0	1.6	4		06/03/14 11:01	79-34-5	
Tetrachloroethene	ND	ug/L	4.0	1.8	4		06/03/14 11:01	127-18-4	
Toluene	**64200**	ug/L	400	104	400		06/03/14 21:04	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	4.0	1.3	4		06/03/14 11:01	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	4.0	1.4	4		06/03/14 11:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	4.0	1.9	4		06/03/14 11:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	4.0	1.2	4		06/03/14 11:01	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-2 **Lab ID: 92203514014** Collected: 05/29/14 11:02 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	4.0	1.9	4		06/03/14 11:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	4.0	0.80	4		06/03/14 11:01	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	4.0	0.76	4		06/03/14 11:01	76-13-1	
Vinyl chloride	ND	ug/L	4.0	2.5	4		06/03/14 11:01	75-01-4	
m&p-Xylene	**9.3**	ug/L	8.0	2.6	4		06/03/14 11:01	179601-23-1	
o-Xylene	**2.2J**	ug/L	4.0	0.92	4		06/03/14 11:01	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		4		06/03/14 11:01	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		4		06/03/14 11:01	17060-07-0	
Toluene-d8 (S)	98	%	70-130		4		06/03/14 11:01	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-12 **Lab ID: 92203514016** Collected: 05/29/14 14:10 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 04:29	67-64-1	
Benzene	**3.3**	ug/L	1.0	0.25	1		06/03/14 04:29	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 04:29	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 04:29	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 04:29	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 04:29	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 04:29	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 04:29	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 04:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 04:29	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 04:29	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 04:29	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 04:29	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 04:29	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 04:29	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 04:29	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 04:29	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 04:29	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 04:29	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 04:29	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 04:29	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 04:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 04:29	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 04:29	75-35-4	
cis-1,2-Dichloroethene	**18.9**	ug/L	1.0	0.19	1		06/03/14 04:29	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 04:29	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 04:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 04:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 04:29	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 04:29	123-91-1	
Ethylbenzene	**78.2**	ug/L	1.0	0.30	1		06/03/14 04:29	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 04:29	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 04:29	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 04:29	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 04:29	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 04:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 04:29	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 04:29	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 04:29	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 04:29	79-34-5	
Tetrachloroethene	**0.92J**	ug/L	1.0	0.46	1		06/03/14 04:29	127-18-4	
Toluene	**107000**	ug/L	1000	260	1000		06/04/14 13:27	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 04:29	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 04:29	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 04:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 04:29	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-12 **Lab ID: 92203514016** Collected: 05/29/14 14:10 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	**0.69J**	ug/L	1.0	0.47	1		06/03/14 04:29	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 04:29	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 04:29	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 04:29	75-01-4	
m&p-Xylene	**77.4**	ug/L	2.0	0.66	1		06/03/14 04:29	179601-23-1	
o-Xylene	**6.5**	ug/L	1.0	0.23	1		06/03/14 04:29	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		06/03/14 04:29	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		06/03/14 04:29	17060-07-0	
Toluene-d8 (S)	50	%	70-130		1		06/03/14 04:29	2037-26-5	S5

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-13 **Lab ID: 92203514018** Collected: 05/29/14 16:35 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	**9150J**	ug/L	12500	5000	500		06/03/14 22:22	67-64-1	
Benzene	ND	ug/L	500	125	500		06/03/14 22:22	71-43-2	
Bromochloromethane	ND	ug/L	500	85.0	500		06/03/14 22:22	74-97-5	
Bromodichloromethane	ND	ug/L	500	90.0	500		06/03/14 22:22	75-27-4	
Bromoform	ND	ug/L	500	130	500		06/03/14 22:22	75-25-2	
Bromomethane	ND	ug/L	2500	145	500		06/03/14 22:22	74-83-9	
2-Butanone (MEK)	ND	ug/L	2500	480	500		06/03/14 22:22	78-93-3	
Carbon disulfide	ND	ug/L	1000	575	500		06/03/14 22:22	75-15-0	
Carbon tetrachloride	ND	ug/L	500	125	500		06/03/14 22:22	56-23-5	
Chlorobenzene	ND	ug/L	500	115	500		06/03/14 22:22	108-90-7	
Chloroethane	ND	ug/L	500	270	500		06/03/14 22:22	75-00-3	
Chloroform	ND	ug/L	500	70.0	500		06/03/14 22:22	67-66-3	
Chloromethane	ND	ug/L	500	55.0	500		06/03/14 22:22	74-87-3	
Cyclohexane	ND	ug/L	500	180	500		06/03/14 22:22	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	1500	1260	500		06/03/14 22:22	96-12-8	
Dibromochloromethane	ND	ug/L	500	105	500		06/03/14 22:22	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	500	135	500		06/03/14 22:22	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	500	150	500		06/03/14 22:22	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	500	120	500		06/03/14 22:22	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	500	165	500		06/03/14 22:22	106-46-7	
Dichlorodifluoromethane	ND	ug/L	500	105	500		06/03/14 22:22	75-71-8	
1,1-Dichloroethane	ND	ug/L	500	160	500		06/03/14 22:22	75-34-3	
1,2-Dichloroethane	ND	ug/L	500	60.0	500		06/03/14 22:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	500	280	500		06/03/14 22:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	500	95.0	500		06/03/14 22:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	500	245	500		06/03/14 22:22	156-60-5	
1,2-Dichloropropane	ND	ug/L	500	135	500		06/03/14 22:22	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	500	65.0	500		06/03/14 22:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	500	130	500		06/03/14 22:22	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	75000	39200	500		06/03/14 22:22	123-91-1	
Ethylbenzene	ND	ug/L	500	150	500		06/03/14 22:22	100-41-4	
2-Hexanone	ND	ug/L	2500	230	500		06/03/14 22:22	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	500	200	500		06/03/14 22:22	98-82-8	
Methyl acetate	ND	ug/L	5000	410	500		06/03/14 22:22	79-20-9	
Methylcyclohexane	ND	ug/L	5000	935	500		06/03/14 22:22	108-87-2	
Methylene Chloride	ND	ug/L	1000	485	500		06/03/14 22:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2500	165	500		06/03/14 22:22	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	500	105	500		06/03/14 22:22	1634-04-4	
Styrene	ND	ug/L	500	130	500		06/03/14 22:22	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	500	200	500		06/03/14 22:22	79-34-5	
Tetrachloroethene	ND	ug/L	500	230	500		06/03/14 22:22	127-18-4	
Toluene	**461000**	ug/L	4000	1040	4000		06/04/14 13:43	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	500	165	500		06/03/14 22:22	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	500	175	500		06/03/14 22:22	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	500	240	500		06/03/14 22:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	500	145	500		06/03/14 22:22	79-00-5	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-13 **Lab ID: 92203514018** Collected: 05/29/14 16:35 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	500	235	500		06/03/14 22:22	79-01-6	
Trichlorofluoromethane	ND	ug/L	500	100	500		06/03/14 22:22	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	500	95.0	500		06/03/14 22:22	76-13-1	
Vinyl chloride	ND	ug/L	500	310	500		06/03/14 22:22	75-01-4	
m&p-Xylene	ND	ug/L	1000	330	500		06/03/14 22:22	179601-23-1	
o-Xylene	ND	ug/L	500	115	500		06/03/14 22:22	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		500		06/03/14 22:22	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		500		06/03/14 22:22	17060-07-0	
Toluene-d8 (S)	102	%	70-130		500		06/03/14 22:22	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-3 **Lab ID: 92203514020** Collected: 05/30/14 09:02 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	**48.1**	ug/L	25.0	10.0	1		06/03/14 03:11	67-64-1	
Benzene	**23.4**	ug/L	1.0	0.25	1		06/03/14 03:11	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 03:11	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 03:11	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 03:11	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 03:11	74-83-9	
2-Butanone (MEK)	**8.4**	ug/L	5.0	0.96	1		06/03/14 03:11	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 03:11	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 03:11	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 03:11	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 03:11	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 03:11	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 03:11	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 03:11	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 03:11	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 03:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 03:11	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 03:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 03:11	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 03:11	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 03:11	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 03:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 03:11	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 03:11	75-35-4	
cis-1,2-Dichloroethene	**1.8**	ug/L	1.0	0.19	1		06/03/14 03:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 03:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 03:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 03:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 03:11	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 03:11	123-91-1	
Ethylbenzene	**17.6**	ug/L	1.0	0.30	1		06/03/14 03:11	100-41-4	
2-Hexanone	**1.3J**	ug/L	5.0	0.46	1		06/03/14 03:11	591-78-6	
Isopropylbenzene (Cumene)	**8.6**	ug/L	1.0	0.40	1		06/03/14 03:11	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 03:11	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 03:11	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 03:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 03:11	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 03:11	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 03:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 03:11	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 03:11	127-18-4	
Toluene	**77700**	ug/L	400	104	400		06/03/14 21:35	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 03:11	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 03:11	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 03:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 03:11	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-3 **Lab ID: 92203514020** Collected: 05/30/14 09:02 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 03:11	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 03:11	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 03:11	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 03:11	75-01-4	
m&p-Xylene	**31.8**	ug/L	2.0	0.66	1		06/03/14 03:11	179601-23-1	
o-Xylene	**32.1**	ug/L	1.0	0.23	1		06/03/14 03:11	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/03/14 03:11	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		06/03/14 03:11	17060-07-0	
Toluene-d8 (S)	59	%	70-130		1		06/03/14 03:11	2037-26-5	S5

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: TB-053014 **Lab ID: 92203514021** Collected: 05/30/14 00:00 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 01:53	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/03/14 01:53	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 01:53	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 01:53	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 01:53	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 01:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 01:53	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 01:53	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 01:53	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 01:53	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 01:53	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 01:53	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 01:53	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 01:53	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 01:53	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 01:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 01:53	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 01:53	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 01:53	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 01:53	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 01:53	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 01:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 01:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 01:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/03/14 01:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 01:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 01:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 01:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 01:53	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 01:53	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/03/14 01:53	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 01:53	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 01:53	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 01:53	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 01:53	108-87-2	
Methylene Chloride	**11.1**	ug/L	2.0	0.97	1		06/03/14 01:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 01:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 01:53	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 01:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 01:53	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 01:53	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		06/03/14 01:53	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 01:53	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 01:53	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 01:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 01:53	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: TB-053014 **Lab ID: 92203514021** Collected: 05/30/14 00:00 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 01:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 01:53	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 01:53	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 01:53	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/03/14 01:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/03/14 01:53	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		06/03/14 01:53	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		06/03/14 01:53	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		06/03/14 01:53	2037-26-5	

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June 16, 2014

Pam Groff
WSP
11190 Sunrise Valley Drive
Reston, VA 20191

RE: Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Dear Pam Groff:
Enclosed are the analytical results for sample(s) received by the laboratory on May 31, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

Per client request, report revised 6/16/14 to change MW-4R sample ID to MW-14.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Godwin
kevin.godwin@pacelabs.com
Project Manager

Enclosures

cc: Erin Huntley, WSP

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CERTIFICATIONS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

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SAMPLE SUMMARY

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92203514001	**MW-1**	Water	05/27/14 17:35	05/31/14 09:15
92203514002	**MW-300**	Water	05/27/14 16:42	05/31/14 09:15
92203514003	**MW-12-38**	Water	05/27/14 18:26	05/31/14 09:15
92203514004	**MW-11-36**	Water	05/28/14 09:57	05/31/14 09:15
92203514005	**MW-300D**	Water	05/28/14 09:00	05/31/14 09:15
92203514006	**MW-11**	Water	05/28/14 11:32	05/31/14 09:15
92203514007	**MW-10**	Water	05/28/14 14:27	05/31/14 09:15
92203514008	**MW-15**	Water	05/28/14 16:26	05/31/14 09:15
92203514009	**MW-9**	Water	05/28/14 15:25	05/31/14 09:15
92203514010	**MW-14**	Water	05/28/14 18:27	05/31/14 09:15
92203514011	**MW-08**	Water	05/29/14 08:52	05/31/14 09:15
92203514012	**EB-BP-052914**	Water	05/29/14 09:20	05/31/14 09:15
92203514013	**MW-7**	Water	05/29/14 10:43	05/31/14 09:15
92203514014	**MW-2**	Water	05/29/14 11:02	05/31/14 09:15
92203514015	**MW-5**	Water	05/29/14 12:33	05/31/14 09:15
92203514016	**MW-12**	Water	05/29/14 14:10	05/31/14 09:15
92203514017	**MW-6**	Water	05/29/14 13:50	05/31/14 09:15
92203514018	**MW-13**	Water	05/29/14 16:35	05/31/14 09:15
92203514019	**MW-4R**	Water	05/29/14 18:05	05/31/14 09:15
92203514020	**MW-3**	Water	05/30/14 09:02	05/31/14 09:15
92203514021	**TB-053014**	Water	05/30/14 00:00	05/31/14 09:15

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SAMPLE ANALYTE COUNT

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92203514001	**MW-1**	EPA 8260	NU1	55	PASI-C
92203514002	**MW-300**	EPA 8260	NU1	55	PASI-C
92203514003	**MW-12-38**	EPA 8260	NU1	55	PASI-C
92203514004	**MW-11-36**	EPA 8260	NU1	55	PASI-C
92203514005	**MW-300D**	EPA 8260	NU1	55	PASI-C
92203514006	**MW-11**	EPA 8260	NU1	55	PASI-C
92203514007	**MW-10**	EPA 8260	NU1	55	PASI-C
92203514008	**MW-15**	EPA 8260	NU1	55	PASI-C
92203514009	**MW-9**	EPA 8260	NU1	55	PASI-C
92203514010	**MW-14**	EPA 8260	NU1	55	PASI-C
92203514011	**MW-08**	EPA 8260	NU1	55	PASI-C
92203514012	**EB-BP-052914**	EPA 8260	NU1	55	PASI-C
92203514013	**MW-7**	EPA 8260	NU1	55	PASI-C
92203514014	**MW-2**	EPA 8260	NU1	55	PASI-C
92203514015	**MW-5**	EPA 8260	NU1	55	PASI-C
92203514016	**MW-12**	EPA 8260	NU1	55	PASI-C
92203514017	**MW-6**	EPA 8260	NU1	55	PASI-C
92203514018	**MW-13**	EPA 8260	NU1	55	PASI-C
92203514019	**MW-4R**	EPA 8260	NU1	55	PASI-C
92203514020	**MW-3**	EPA 8260	NU1	55	PASI-C
92203514021	**TB-053014**	EPA 8260	NU1	55	PASI-C

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PROJECT NARRATIVE

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Method: **EPA 8260**
Description: 8260 MSV Low Level SC
Client: WSP Environmental Strategies
Date: June 16, 2014

General Information:
21 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: MSV/27163

S5: Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

- MW-12 (Lab ID: 92203514016)
  - Toluene-d8 (S)
- MW-3 (Lab ID: 92203514020)
  - Toluene-d8 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: MSV/27162

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 1218682)
  - Vinyl chloride

QC Batch: MSV/27163

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 1218692)
  - Vinyl chloride

QC Batch: MSV/27174

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 1218971)
  - Vinyl chloride

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PROJECT NARRATIVE

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Method: **EPA 8260**
Description: 8260 MSV Low Level SC
Client: WSP Environmental Strategies
Date: June 16, 2014

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/27162

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92203514001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 1218683)
  - 1,1,1-Trichloroethane
  - 1,1,2-Trichlorotrifluoroethane
  - 1,1-Dichloroethane
  - 1,1-Dichloroethene
  - 1,2-Dichloroethane
  - 1,2-Dichloropropane
  - 1,4-Dioxane (p-Dioxane)
  - Benzene
  - Bromochloromethane
  - Bromomethane
  - Carbon disulfide
  - Carbon tetrachloride
  - Chloroethane
  - Chloroform
  - Chloromethane
  - Cyclohexane
  - Dichlorodifluoromethane
  - Methyl acetate
  - Methyl-tert-butyl ether
  - Methylcyclohexane
  - Methylene Chloride
  - Toluene
  - Trichloroethene
  - Trichlorofluoromethane
  - Vinyl chloride
  - cis-1,2-Dichloroethene
  - cis-1,3-Dichloropropene
  - trans-1,2-Dichloroethene
- MSD (Lab ID: 1218684)
  - 1,1,1-Trichloroethane
  - 1,1,2-Trichlorotrifluoroethane
  - 1,1-Dichloroethene
  - Bromomethane
  - Carbon disulfide
  - Carbon tetrachloride
  - Chloroethane
  - Chloromethane
  - Cyclohexane
  - Dichlorodifluoromethane

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PROJECT NARRATIVE

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Method: **EPA 8260**
Description: 8260 MSV Low Level SC
Client: WSP Environmental Strategies
Date: June 16, 2014

QC Batch: MSV/27162

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92203514001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- Methylcyclohexane
- Trichlorofluoromethane
- Vinyl chloride
- trans-1,2-Dichloroethene

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-1 **Lab ID: 92203514001** Collected: 05/27/14 17:35 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 17:03	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/02/14 17:03	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 17:03	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 17:03	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 17:03	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 17:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 17:03	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 17:03	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 17:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 17:03	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 17:03	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 17:03	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 17:03	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 17:03	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 17:03	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 17:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 17:03	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 17:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 17:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 17:03	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 17:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 17:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 17:03	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/02/14 17:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/02/14 17:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/02/14 17:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 17:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 17:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 17:03	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 17:03	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/02/14 17:03	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 17:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/02/14 17:03	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 17:03	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 17:03	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 17:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 17:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 17:03	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 17:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 17:03	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/02/14 17:03	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		06/02/14 17:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 17:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 17:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 17:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 17:03	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-1 **Lab ID: 92203514001** Collected: 05/27/14 17:35 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 17:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 17:03	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 17:03	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/02/14 17:03	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/02/14 17:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/02/14 17:03	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/02/14 17:03	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/02/14 17:03	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/02/14 17:03	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-300 **Lab ID: 92203514002** Collected: 05/27/14 16:42 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 17:19	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/02/14 17:19	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 17:19	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 17:19	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 17:19	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 17:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 17:19	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 17:19	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 17:19	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 17:19	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 17:19	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 17:19	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 17:19	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 17:19	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 17:19	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 17:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 17:19	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 17:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 17:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 17:19	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 17:19	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 17:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 17:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/02/14 17:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/02/14 17:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/02/14 17:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 17:19	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 17:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 17:19	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 17:19	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/02/14 17:19	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 17:19	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/02/14 17:19	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 17:19	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 17:19	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 17:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 17:19	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 17:19	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 17:19	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 17:19	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/02/14 17:19	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		06/02/14 17:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 17:19	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 17:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 17:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 17:19	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-300 **Lab ID: 92203514002** Collected: 05/27/14 16:42 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 17:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 17:19	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 17:19	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/02/14 17:19	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/02/14 17:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/02/14 17:19	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		06/02/14 17:19	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		06/02/14 17:19	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/02/14 17:19	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-12-38 **Lab ID: 92203514003** Collected: 05/27/14 18:26 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 17:34	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/02/14 17:34	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 17:34	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 17:34	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 17:34	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 17:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 17:34	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 17:34	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 17:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 17:34	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 17:34	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 17:34	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 17:34	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 17:34	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 17:34	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 17:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 17:34	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 17:34	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 17:34	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 17:34	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 17:34	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 17:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 17:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/02/14 17:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/02/14 17:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/02/14 17:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 17:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 17:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 17:34	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 17:34	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/02/14 17:34	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 17:34	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/02/14 17:34	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 17:34	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 17:34	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 17:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 17:34	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 17:34	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 17:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 17:34	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/02/14 17:34	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		06/02/14 17:34	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 17:34	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 17:34	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 17:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 17:34	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-12-38 **Lab ID: 92203514003** Collected: 05/27/14 18:26 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 17:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 17:34	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 17:34	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/02/14 17:34	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/02/14 17:34	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/02/14 17:34	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/02/14 17:34	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/02/14 17:34	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/02/14 17:34	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-11-36 **Lab ID: 92203514004** Collected: 05/28/14 09:57 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 02:56	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/03/14 02:56	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 02:56	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 02:56	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 02:56	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 02:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 02:56	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 02:56	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 02:56	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 02:56	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 02:56	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 02:56	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 02:56	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 02:56	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 02:56	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 02:56	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 02:56	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 02:56	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 02:56	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 02:56	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 02:56	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 02:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 02:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 02:56	75-35-4	
cis-1,2-Dichloroethene	**10.5**	ug/L	1.0	0.19	1		06/03/14 02:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 02:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 02:56	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 02:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 02:56	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 02:56	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/03/14 02:56	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 02:56	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 02:56	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 02:56	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 02:56	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 02:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 02:56	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 02:56	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 02:56	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 02:56	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 02:56	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		06/03/14 02:56	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 02:56	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 02:56	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 02:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 02:56	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-11-36 **Lab ID: 92203514004** Collected: 05/28/14 09:57 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 02:56	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 02:56	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 02:56	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 02:56	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/03/14 02:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/03/14 02:56	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		06/03/14 02:56	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/03/14 02:56	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/03/14 02:56	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-300D **Lab ID: 92203514005** Collected: 05/28/14 09:00 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	**10.7J**	ug/L	25.0	10.0	1		06/02/14 17:50	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/02/14 17:50	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 17:50	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 17:50	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 17:50	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 17:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 17:50	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 17:50	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 17:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 17:50	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 17:50	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 17:50	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 17:50	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 17:50	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 17:50	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 17:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 17:50	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 17:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 17:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 17:50	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 17:50	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 17:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 17:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/02/14 17:50	75-35-4	
cis-1,2-Dichloroethene	**10.7**	ug/L	1.0	0.19	1		06/02/14 17:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/02/14 17:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 17:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 17:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 17:50	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 17:50	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/02/14 17:50	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 17:50	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/02/14 17:50	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 17:50	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 17:50	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 17:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 17:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 17:50	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 17:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 17:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/02/14 17:50	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		06/02/14 17:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 17:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 17:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 17:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 17:50	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-300D **Lab ID: 92203514005** Collected: 05/28/14 09:00 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 17:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 17:50	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 17:50	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/02/14 17:50	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/02/14 17:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/02/14 17:50	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		06/02/14 17:50	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/02/14 17:50	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/02/14 17:50	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-11 **Lab ID: 92203514006** Collected: 05/28/14 11:32 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 18:06	67-64-1	
Benzene	**10.0**	ug/L	1.0	0.25	1		06/02/14 18:06	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 18:06	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 18:06	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 18:06	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 18:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 18:06	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 18:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 18:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 18:06	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 18:06	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 18:06	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 18:06	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 18:06	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 18:06	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 18:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 18:06	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 18:06	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 18:06	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 18:06	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 18:06	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 18:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 18:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/02/14 18:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/02/14 18:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/02/14 18:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 18:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 18:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 18:06	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 18:06	123-91-1	
Ethylbenzene	**8.0**	ug/L	1.0	0.30	1		06/02/14 18:06	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 18:06	591-78-6	
Isopropylbenzene (Cumene)	**0.52J**	ug/L	1.0	0.40	1		06/02/14 18:06	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 18:06	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 18:06	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 18:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 18:06	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 18:06	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 18:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 18:06	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/02/14 18:06	127-18-4	
Toluene	**22700**	ug/L	200	52.0	200		06/04/14 09:33	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 18:06	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 18:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 18:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 18:06	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-11 **Lab ID: 92203514006** Collected: 05/28/14 11:32 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 18:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 18:06	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 18:06	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/02/14 18:06	75-01-4	
m&p-Xylene	**10.4**	ug/L	2.0	0.66	1		06/02/14 18:06	179601-23-1	
o-Xylene	**2.0**	ug/L	1.0	0.23	1		06/02/14 18:06	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		06/02/14 18:06	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		06/02/14 18:06	17060-07-0	
Toluene-d8 (S)	86	%	70-130		1		06/02/14 18:06	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-10 **Lab ID: 92203514007** Collected: 05/28/14 14:27 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/04/14 09:02	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/04/14 09:02	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/04/14 09:02	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/04/14 09:02	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/04/14 09:02	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/04/14 09:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/04/14 09:02	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/04/14 09:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/04/14 09:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/04/14 09:02	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/04/14 09:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/04/14 09:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/04/14 09:02	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/04/14 09:02	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/04/14 09:02	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/04/14 09:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/04/14 09:02	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/04/14 09:02	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/04/14 09:02	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/04/14 09:02	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/04/14 09:02	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/04/14 09:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/04/14 09:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/04/14 09:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/04/14 09:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/04/14 09:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/04/14 09:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/04/14 09:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/04/14 09:02	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/04/14 09:02	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/04/14 09:02	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/04/14 09:02	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/04/14 09:02	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/04/14 09:02	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/04/14 09:02	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/04/14 09:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/04/14 09:02	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/04/14 09:02	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/04/14 09:02	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/04/14 09:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/04/14 09:02	127-18-4	
Toluene	**0.47J**	ug/L	1.0	0.26	1		06/04/14 09:02	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/04/14 09:02	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/04/14 09:02	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/04/14 09:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/04/14 09:02	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-10 **Lab ID: 92203514007** Collected: 05/28/14 14:27 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/04/14 09:02	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/04/14 09:02	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/04/14 09:02	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/04/14 09:02	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/04/14 09:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/04/14 09:02	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		06/04/14 09:02	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		06/04/14 09:02	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		06/04/14 09:02	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-15 **Lab ID: 92203514008** Collected: 05/28/14 16:26 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 18:37	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/02/14 18:37	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 18:37	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 18:37	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 18:37	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 18:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 18:37	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 18:37	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 18:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 18:37	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 18:37	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 18:37	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 18:37	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 18:37	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 18:37	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 18:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 18:37	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 18:37	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 18:37	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 18:37	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 18:37	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 18:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 18:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/02/14 18:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/02/14 18:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/02/14 18:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 18:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 18:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 18:37	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 18:37	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/02/14 18:37	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 18:37	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/02/14 18:37	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 18:37	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 18:37	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 18:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 18:37	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 18:37	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 18:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 18:37	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/02/14 18:37	127-18-4	
Toluene	**3.5**	ug/L	1.0	0.26	1		06/02/14 18:37	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 18:37	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 18:37	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 18:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 18:37	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-15 **Lab ID: 92203514008** Collected: 05/28/14 16:26 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 18:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 18:37	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 18:37	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/02/14 18:37	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/02/14 18:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/02/14 18:37	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/02/14 18:37	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/02/14 18:37	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		06/02/14 18:37	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-9 **Lab ID: 92203514009** Collected: 05/28/14 15:25 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 18:53	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/02/14 18:53	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 18:53	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 18:53	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 18:53	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 18:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 18:53	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 18:53	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 18:53	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 18:53	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 18:53	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 18:53	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 18:53	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 18:53	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 18:53	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 18:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 18:53	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 18:53	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 18:53	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 18:53	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 18:53	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 18:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 18:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/02/14 18:53	75-35-4	
cis-1,2-Dichloroethene	**0.97J**	ug/L	1.0	0.19	1		06/02/14 18:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/02/14 18:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 18:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 18:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 18:53	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 18:53	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/02/14 18:53	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 18:53	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/02/14 18:53	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 18:53	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 18:53	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 18:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 18:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 18:53	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 18:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 18:53	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/02/14 18:53	127-18-4	
Toluene	**1.8**	ug/L	1.0	0.26	1		06/02/14 18:53	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 18:53	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 18:53	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 18:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 18:53	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-9 **Lab ID: 92203514009** Collected: 05/28/14 15:25 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	**0.59J**	ug/L	1.0	0.47	1		06/02/14 18:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 18:53	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 18:53	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/02/14 18:53	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/02/14 18:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/02/14 18:53	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/02/14 18:53	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		06/02/14 18:53	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		06/02/14 18:53	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-14 **Lab ID: 92203514010** Collected: 05/28/14 18:27 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/02/14 19:08	67-64-1	
Benzene	**0.44J**	ug/L	1.0	0.25	1		06/02/14 19:08	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/02/14 19:08	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/02/14 19:08	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/02/14 19:08	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/02/14 19:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/02/14 19:08	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/02/14 19:08	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/02/14 19:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/02/14 19:08	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/02/14 19:08	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/02/14 19:08	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/02/14 19:08	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/02/14 19:08	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/02/14 19:08	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/02/14 19:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/02/14 19:08	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/02/14 19:08	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/02/14 19:08	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 19:08	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/02/14 19:08	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/02/14 19:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/02/14 19:08	107-06-2	
1,1-Dichloroethene	**4.9**	ug/L	1.0	0.56	1		06/02/14 19:08	75-35-4	
cis-1,2-Dichloroethene	**1930**	ug/L	20.0	3.8	20		06/03/14 19:30	156-59-2	
trans-1,2-Dichloroethene	**0.89J**	ug/L	1.0	0.49	1		06/02/14 19:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/02/14 19:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/02/14 19:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/02/14 19:08	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/02/14 19:08	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/02/14 19:08	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/02/14 19:08	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/02/14 19:08	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/02/14 19:08	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/02/14 19:08	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/02/14 19:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/02/14 19:08	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/02/14 19:08	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/02/14 19:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/02/14 19:08	79-34-5	
Tetrachloroethene	**1.1**	ug/L	1.0	0.46	1		06/02/14 19:08	127-18-4	
Toluene	**1.4**	ug/L	1.0	0.26	1		06/02/14 19:08	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/02/14 19:08	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/02/14 19:08	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/02/14 19:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/02/14 19:08	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-14 **Lab ID: 92203514010** Collected: 05/28/14 18:27 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/02/14 19:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/02/14 19:08	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/02/14 19:08	76-13-1	
Vinyl chloride	**1.8**	ug/L	1.0	0.62	1		06/02/14 19:08	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/02/14 19:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/02/14 19:08	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		06/02/14 19:08	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/02/14 19:08	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/02/14 19:08	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-08 **Lab ID: 92203514011** Collected: 05/29/14 08:52 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 18:12	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/03/14 18:12	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 18:12	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 18:12	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 18:12	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 18:12	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 18:12	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 18:12	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 18:12	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 18:12	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 18:12	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 18:12	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 18:12	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 18:12	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 18:12	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 18:12	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 18:12	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 18:12	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 18:12	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 18:12	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 18:12	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 18:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 18:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 18:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/03/14 18:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 18:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 18:12	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 18:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 18:12	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 18:12	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/03/14 18:12	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 18:12	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 18:12	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 18:12	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 18:12	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 18:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 18:12	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 18:12	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 18:12	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 18:12	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 18:12	127-18-4	
Toluene	**0.87J**	ug/L	1.0	0.26	1		06/03/14 18:12	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 18:12	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 18:12	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 18:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 18:12	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-08 **Lab ID: 92203514011** Collected: 05/29/14 08:52 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 18:12	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 18:12	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 18:12	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 18:12	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/03/14 18:12	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/03/14 18:12	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/03/14 18:12	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		06/03/14 18:12	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		06/03/14 18:12	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: EB-BP-052914 **Lab ID: 92203514012** Collected: 05/29/14 09:20 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 18:28	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/03/14 18:28	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 18:28	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 18:28	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 18:28	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 18:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 18:28	78-93-3	
Carbon disulfide	**5.0**	ug/L	2.0	1.2	1		06/03/14 18:28	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 18:28	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 18:28	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 18:28	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 18:28	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 18:28	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 18:28	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 18:28	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 18:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 18:28	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 18:28	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 18:28	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 18:28	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 18:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 18:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 18:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 18:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/03/14 18:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 18:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 18:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 18:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 18:28	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 18:28	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/03/14 18:28	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 18:28	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 18:28	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 18:28	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 18:28	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 18:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 18:28	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 18:28	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 18:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 18:28	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 18:28	127-18-4	
Toluene	**7.1**	ug/L	1.0	0.26	1		06/03/14 18:28	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 18:28	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 18:28	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 18:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 18:28	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: EB-BP-052914 **Lab ID: 92203514012** Collected: 05/29/14 09:20 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 18:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 18:28	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 18:28	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 18:28	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/03/14 18:28	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/03/14 18:28	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/03/14 18:28	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/03/14 18:28	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		06/03/14 18:28	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-7 **Lab ID: 92203514013** Collected: 05/29/14 10:43 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 03:58	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/03/14 03:58	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 03:58	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 03:58	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 03:58	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 03:58	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 03:58	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 03:58	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 03:58	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 03:58	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 03:58	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 03:58	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 03:58	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 03:58	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 03:58	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 03:58	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 03:58	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 03:58	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 03:58	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 03:58	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 03:58	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 03:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 03:58	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 03:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/03/14 03:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 03:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 03:58	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 03:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 03:58	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 03:58	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/03/14 03:58	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 03:58	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 03:58	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 03:58	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 03:58	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 03:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 03:58	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 03:58	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 03:58	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 03:58	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 03:58	127-18-4	
Toluene	**4.7**	ug/L	1.0	0.26	1		06/03/14 03:58	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 03:58	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 03:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 03:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 03:58	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-7 **Lab ID: 92203514013** Collected: 05/29/14 10:43 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 03:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 03:58	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 03:58	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 03:58	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/03/14 03:58	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/03/14 03:58	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		06/03/14 03:58	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		06/03/14 03:58	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		06/03/14 03:58	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-2 **Lab ID: 92203514014** Collected: 05/29/14 11:02 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	**40.7J**	ug/L	100	40.0	4		06/03/14 11:01	67-64-1	
Benzene	**38.6**	ug/L	4.0	1.0	4		06/03/14 11:01	71-43-2	
Bromochloromethane	ND	ug/L	4.0	0.68	4		06/03/14 11:01	74-97-5	
Bromodichloromethane	ND	ug/L	4.0	0.72	4		06/03/14 11:01	75-27-4	
Bromoform	ND	ug/L	4.0	1.0	4		06/03/14 11:01	75-25-2	
Bromomethane	ND	ug/L	20.0	1.2	4		06/03/14 11:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	20.0	3.8	4		06/03/14 11:01	78-93-3	
Carbon disulfide	ND	ug/L	8.0	4.6	4		06/03/14 11:01	75-15-0	
Carbon tetrachloride	ND	ug/L	4.0	1.0	4		06/03/14 11:01	56-23-5	
Chlorobenzene	ND	ug/L	4.0	0.92	4		06/03/14 11:01	108-90-7	
Chloroethane	ND	ug/L	4.0	2.2	4		06/03/14 11:01	75-00-3	
Chloroform	ND	ug/L	4.0	0.56	4		06/03/14 11:01	67-66-3	
Chloromethane	ND	ug/L	4.0	0.44	4		06/03/14 11:01	74-87-3	
Cyclohexane	ND	ug/L	4.0	1.4	4		06/03/14 11:01	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	12.0	10.1	4		06/03/14 11:01	96-12-8	
Dibromochloromethane	ND	ug/L	4.0	0.84	4		06/03/14 11:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	4.0	1.1	4		06/03/14 11:01	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	4.0	1.2	4		06/03/14 11:01	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	4.0	0.96	4		06/03/14 11:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	4.0	1.3	4		06/03/14 11:01	106-46-7	
Dichlorodifluoromethane	ND	ug/L	4.0	0.84	4		06/03/14 11:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	4.0	1.3	4		06/03/14 11:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	4.0	0.48	4		06/03/14 11:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	4.0	2.2	4		06/03/14 11:01	75-35-4	
cis-1,2-Dichloroethene	**1.4J**	ug/L	4.0	0.76	4		06/03/14 11:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	4.0	2.0	4		06/03/14 11:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	4.0	1.1	4		06/03/14 11:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	4.0	0.52	4		06/03/14 11:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1.0	4		06/03/14 11:01	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	600	313	4		06/03/14 11:01	123-91-1	
Ethylbenzene	**9.3**	ug/L	4.0	1.2	4		06/03/14 11:01	100-41-4	
2-Hexanone	ND	ug/L	20.0	1.8	4		06/03/14 11:01	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	4.0	1.6	4		06/03/14 11:01	98-82-8	
Methyl acetate	ND	ug/L	40.0	3.3	4		06/03/14 11:01	79-20-9	
Methylcyclohexane	ND	ug/L	40.0	7.5	4		06/03/14 11:01	108-87-2	
Methylene Chloride	**10.5**	ug/L	8.0	3.9	4		06/03/14 11:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	20.0	1.3	4		06/03/14 11:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	4.0	0.84	4		06/03/14 11:01	1634-04-4	
Styrene	ND	ug/L	4.0	1.0	4		06/03/14 11:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	4.0	1.6	4		06/03/14 11:01	79-34-5	
Tetrachloroethene	ND	ug/L	4.0	1.8	4		06/03/14 11:01	127-18-4	
Toluene	**64200**	ug/L	400	104	400		06/03/14 21:04	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	4.0	1.3	4		06/03/14 11:01	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	4.0	1.4	4		06/03/14 11:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	4.0	1.9	4		06/03/14 11:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	4.0	1.2	4		06/03/14 11:01	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-2 **Lab ID: 92203514014** Collected: 05/29/14 11:02 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	4.0	1.9	4		06/03/14 11:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	4.0	0.80	4		06/03/14 11:01	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	4.0	0.76	4		06/03/14 11:01	76-13-1	
Vinyl chloride	ND	ug/L	4.0	2.5	4		06/03/14 11:01	75-01-4	
m&p-Xylene	**9.3**	ug/L	8.0	2.6	4		06/03/14 11:01	179601-23-1	
o-Xylene	**2.2J**	ug/L	4.0	0.92	4		06/03/14 11:01	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		4		06/03/14 11:01	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		4		06/03/14 11:01	17060-07-0	
Toluene-d8 (S)	98	%	70-130		4		06/03/14 11:01	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-5 **Lab ID: 92203514015** Collected: 05/29/14 12:33 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 04:14	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/03/14 04:14	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 04:14	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 04:14	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 04:14	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 04:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 04:14	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 04:14	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 04:14	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 04:14	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 04:14	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 04:14	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 04:14	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 04:14	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 04:14	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 04:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 04:14	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 04:14	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 04:14	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 04:14	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 04:14	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 04:14	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 04:14	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 04:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/03/14 04:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 04:14	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 04:14	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 04:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 04:14	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 04:14	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/03/14 04:14	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 04:14	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 04:14	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 04:14	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 04:14	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 04:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 04:14	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 04:14	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 04:14	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 04:14	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 04:14	127-18-4	
Toluene	**3.1**	ug/L	1.0	0.26	1		06/03/14 04:14	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 04:14	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 04:14	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 04:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 04:14	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-5 **Lab ID: 92203514015** Collected: 05/29/14 12:33 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 04:14	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 04:14	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 04:14	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 04:14	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/03/14 04:14	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/03/14 04:14	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		06/03/14 04:14	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		06/03/14 04:14	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/03/14 04:14	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-12 **Lab ID: 92203514016** Collected: 05/29/14 14:10 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 04:29	67-64-1	
Benzene	**3.3**	ug/L	1.0	0.25	1		06/03/14 04:29	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 04:29	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 04:29	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 04:29	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 04:29	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 04:29	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 04:29	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 04:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 04:29	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 04:29	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 04:29	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 04:29	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 04:29	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 04:29	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 04:29	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 04:29	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 04:29	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 04:29	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 04:29	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 04:29	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 04:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 04:29	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 04:29	75-35-4	
cis-1,2-Dichloroethene	**18.9**	ug/L	1.0	0.19	1		06/03/14 04:29	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 04:29	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 04:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 04:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 04:29	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 04:29	123-91-1	
Ethylbenzene	**78.2**	ug/L	1.0	0.30	1		06/03/14 04:29	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 04:29	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 04:29	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 04:29	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 04:29	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 04:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 04:29	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 04:29	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 04:29	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 04:29	79-34-5	
Tetrachloroethene	**0.92J**	ug/L	1.0	0.46	1		06/03/14 04:29	127-18-4	
Toluene	**107000**	ug/L	1000	260	1000		06/04/14 13:27	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 04:29	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 04:29	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 04:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 04:29	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-12 **Lab ID: 92203514016** Collected: 05/29/14 14:10 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	**0.69J**	ug/L	1.0	0.47	1		06/03/14 04:29	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 04:29	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 04:29	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 04:29	75-01-4	
m&p-Xylene	**77.4**	ug/L	2.0	0.66	1		06/03/14 04:29	179601-23-1	
o-Xylene	**6.5**	ug/L	1.0	0.23	1		06/03/14 04:29	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		06/03/14 04:29	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		06/03/14 04:29	17060-07-0	
Toluene-d8 (S)	50	%	70-130		1		06/03/14 04:29	2037-26-5	S5

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-6 **Lab ID: 92203514017** Collected: 05/29/14 13:50 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 18:43	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/03/14 18:43	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 18:43	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 18:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 18:43	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 18:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 18:43	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 18:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 18:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 18:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 18:43	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 18:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 18:43	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 18:43	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 18:43	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 18:43	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 18:43	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 18:43	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 18:43	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 18:43	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 18:43	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 18:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 18:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 18:43	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/03/14 18:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 18:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 18:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 18:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 18:43	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 18:43	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/03/14 18:43	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 18:43	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 18:43	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 18:43	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 18:43	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 18:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 18:43	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 18:43	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 18:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 18:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 18:43	127-18-4	
Toluene	**0.89J**	ug/L	1.0	0.26	1		06/03/14 18:43	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 18:43	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 18:43	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 18:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 18:43	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-6 **Lab ID: 92203514017** Collected: 05/29/14 13:50 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 18:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 18:43	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 18:43	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 18:43	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/03/14 18:43	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/03/14 18:43	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/03/14 18:43	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		06/03/14 18:43	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		06/03/14 18:43	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-13 **Lab ID: 92203514018** Collected: 05/29/14 16:35 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	**9150J**	ug/L	12500	5000	500		06/03/14 22:22	67-64-1	
Benzene	ND	ug/L	500	125	500		06/03/14 22:22	71-43-2	
Bromochloromethane	ND	ug/L	500	85.0	500		06/03/14 22:22	74-97-5	
Bromodichloromethane	ND	ug/L	500	90.0	500		06/03/14 22:22	75-27-4	
Bromoform	ND	ug/L	500	130	500		06/03/14 22:22	75-25-2	
Bromomethane	ND	ug/L	2500	145	500		06/03/14 22:22	74-83-9	
2-Butanone (MEK)	ND	ug/L	2500	480	500		06/03/14 22:22	78-93-3	
Carbon disulfide	ND	ug/L	1000	575	500		06/03/14 22:22	75-15-0	
Carbon tetrachloride	ND	ug/L	500	125	500		06/03/14 22:22	56-23-5	
Chlorobenzene	ND	ug/L	500	115	500		06/03/14 22:22	108-90-7	
Chloroethane	ND	ug/L	500	270	500		06/03/14 22:22	75-00-3	
Chloroform	ND	ug/L	500	70.0	500		06/03/14 22:22	67-66-3	
Chloromethane	ND	ug/L	500	55.0	500		06/03/14 22:22	74-87-3	
Cyclohexane	ND	ug/L	500	180	500		06/03/14 22:22	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	1500	1260	500		06/03/14 22:22	96-12-8	
Dibromochloromethane	ND	ug/L	500	105	500		06/03/14 22:22	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	500	135	500		06/03/14 22:22	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	500	150	500		06/03/14 22:22	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	500	120	500		06/03/14 22:22	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	500	165	500		06/03/14 22:22	106-46-7	
Dichlorodifluoromethane	ND	ug/L	500	105	500		06/03/14 22:22	75-71-8	
1,1-Dichloroethane	ND	ug/L	500	160	500		06/03/14 22:22	75-34-3	
1,2-Dichloroethane	ND	ug/L	500	60.0	500		06/03/14 22:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	500	280	500		06/03/14 22:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	500	95.0	500		06/03/14 22:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	500	245	500		06/03/14 22:22	156-60-5	
1,2-Dichloropropane	ND	ug/L	500	135	500		06/03/14 22:22	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	500	65.0	500		06/03/14 22:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	500	130	500		06/03/14 22:22	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	75000	39200	500		06/03/14 22:22	123-91-1	
Ethylbenzene	ND	ug/L	500	150	500		06/03/14 22:22	100-41-4	
2-Hexanone	ND	ug/L	2500	230	500		06/03/14 22:22	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	500	200	500		06/03/14 22:22	98-82-8	
Methyl acetate	ND	ug/L	5000	410	500		06/03/14 22:22	79-20-9	
Methylcyclohexane	ND	ug/L	5000	935	500		06/03/14 22:22	108-87-2	
Methylene Chloride	ND	ug/L	1000	485	500		06/03/14 22:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2500	165	500		06/03/14 22:22	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	500	105	500		06/03/14 22:22	1634-04-4	
Styrene	ND	ug/L	500	130	500		06/03/14 22:22	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	500	200	500		06/03/14 22:22	79-34-5	
Tetrachloroethene	ND	ug/L	500	230	500		06/03/14 22:22	127-18-4	
Toluene	**461000**	ug/L	4000	1040	4000		06/04/14 13:43	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	500	165	500		06/03/14 22:22	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	500	175	500		06/03/14 22:22	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	500	240	500		06/03/14 22:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	500	145	500		06/03/14 22:22	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-13 **Lab ID: 92203514018** Collected: 05/29/14 16:35 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	500	235	500		06/03/14 22:22	79-01-6	
Trichlorofluoromethane	ND	ug/L	500	100	500		06/03/14 22:22	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	500	95.0	500		06/03/14 22:22	76-13-1	
Vinyl chloride	ND	ug/L	500	310	500		06/03/14 22:22	75-01-4	
m&p-Xylene	ND	ug/L	1000	330	500		06/03/14 22:22	179601-23-1	
o-Xylene	ND	ug/L	500	115	500		06/03/14 22:22	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		500		06/03/14 22:22	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		500		06/03/14 22:22	17060-07-0	
Toluene-d8 (S)	102	%	70-130		500		06/03/14 22:22	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-4R **Lab ID: 92203514019** Collected: 05/29/14 18:05 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	12500	5000	500		06/03/14 22:37	67-64-1	
Benzene	ND	ug/L	500	125	500		06/03/14 22:37	71-43-2	
Bromochloromethane	ND	ug/L	500	85.0	500		06/03/14 22:37	74-97-5	
Bromodichloromethane	ND	ug/L	500	90.0	500		06/03/14 22:37	75-27-4	
Bromoform	ND	ug/L	500	130	500		06/03/14 22:37	75-25-2	
Bromomethane	ND	ug/L	2500	145	500		06/03/14 22:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	2500	480	500		06/03/14 22:37	78-93-3	
Carbon disulfide	ND	ug/L	1000	575	500		06/03/14 22:37	75-15-0	
Carbon tetrachloride	ND	ug/L	500	125	500		06/03/14 22:37	56-23-5	
Chlorobenzene	ND	ug/L	500	115	500		06/03/14 22:37	108-90-7	
Chloroethane	ND	ug/L	500	270	500		06/03/14 22:37	75-00-3	
Chloroform	ND	ug/L	500	70.0	500		06/03/14 22:37	67-66-3	
Chloromethane	ND	ug/L	500	55.0	500		06/03/14 22:37	74-87-3	
Cyclohexane	ND	ug/L	500	180	500		06/03/14 22:37	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	1500	1260	500		06/03/14 22:37	96-12-8	
Dibromochloromethane	ND	ug/L	500	105	500		06/03/14 22:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	500	135	500		06/03/14 22:37	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	500	150	500		06/03/14 22:37	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	500	120	500		06/03/14 22:37	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	500	165	500		06/03/14 22:37	106-46-7	
Dichlorodifluoromethane	ND	ug/L	500	105	500		06/03/14 22:37	75-71-8	
1,1-Dichloroethane	ND	ug/L	500	160	500		06/03/14 22:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	500	60.0	500		06/03/14 22:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	500	280	500		06/03/14 22:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	500	95.0	500		06/03/14 22:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	500	245	500		06/03/14 22:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	500	135	500		06/03/14 22:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	500	65.0	500		06/03/14 22:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	500	130	500		06/03/14 22:37	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	75000	39200	500		06/03/14 22:37	123-91-1	
Ethylbenzene	ND	ug/L	500	150	500		06/03/14 22:37	100-41-4	
2-Hexanone	ND	ug/L	2500	230	500		06/03/14 22:37	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	500	200	500		06/03/14 22:37	98-82-8	
Methyl acetate	ND	ug/L	5000	410	500		06/03/14 22:37	79-20-9	
Methylcyclohexane	ND	ug/L	5000	935	500		06/03/14 22:37	108-87-2	
Methylene Chloride	ND	ug/L	1000	485	500		06/03/14 22:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2500	165	500		06/03/14 22:37	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	500	105	500		06/03/14 22:37	1634-04-4	
Styrene	ND	ug/L	500	130	500		06/03/14 22:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	500	200	500		06/03/14 22:37	79-34-5	
Tetrachloroethene	ND	ug/L	500	230	500		06/03/14 22:37	127-18-4	
Toluene	**405000**	ug/L	4000	1040	4000		06/04/14 13:59	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	500	165	500		06/03/14 22:37	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	500	175	500		06/03/14 22:37	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	500	240	500		06/03/14 22:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	500	145	500		06/03/14 22:37	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-4R **Lab ID: 92203514019** Collected: 05/29/14 18:05 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	500	235	500		06/03/14 22:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	500	100	500		06/03/14 22:37	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	500	95.0	500		06/03/14 22:37	76-13-1	
Vinyl chloride	ND	ug/L	500	310	500		06/03/14 22:37	75-01-4	
m&p-Xylene	ND	ug/L	1000	330	500		06/03/14 22:37	179601-23-1	
o-Xylene	ND	ug/L	500	115	500		06/03/14 22:37	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		500		06/03/14 22:37	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		500		06/03/14 22:37	17060-07-0	
Toluene-d8 (S)	103	%	70-130		500		06/03/14 22:37	2037-26-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-3 **Lab ID: 92203514020** Collected: 05/30/14 09:02 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	**48.1**	ug/L	25.0	10.0	1		06/03/14 03:11	67-64-1	
Benzene	**23.4**	ug/L	1.0	0.25	1		06/03/14 03:11	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 03:11	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 03:11	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 03:11	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 03:11	74-83-9	
2-Butanone (MEK)	**8.4**	ug/L	5.0	0.96	1		06/03/14 03:11	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 03:11	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 03:11	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 03:11	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 03:11	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 03:11	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 03:11	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 03:11	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 03:11	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 03:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 03:11	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 03:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 03:11	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 03:11	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 03:11	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 03:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 03:11	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 03:11	75-35-4	
cis-1,2-Dichloroethene	**1.8**	ug/L	1.0	0.19	1		06/03/14 03:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 03:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 03:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 03:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 03:11	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 03:11	123-91-1	
Ethylbenzene	**17.6**	ug/L	1.0	0.30	1		06/03/14 03:11	100-41-4	
2-Hexanone	**1.3J**	ug/L	5.0	0.46	1		06/03/14 03:11	591-78-6	
Isopropylbenzene (Cumene)	**8.6**	ug/L	1.0	0.40	1		06/03/14 03:11	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 03:11	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 03:11	108-87-2	
Methylene Chloride	ND	ug/L	2.0	0.97	1		06/03/14 03:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 03:11	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 03:11	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 03:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 03:11	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 03:11	127-18-4	
Toluene	**77700**	ug/L	400	104	400		06/03/14 21:35	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 03:11	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 03:11	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 03:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 03:11	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: MW-3 **Lab ID: 92203514020** Collected: 05/30/14 09:02 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 03:11	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 03:11	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 03:11	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 03:11	75-01-4	
m&p-Xylene	**31.8**	ug/L	2.0	0.66	1		06/03/14 03:11	179601-23-1	
o-Xylene	**32.1**	ug/L	1.0	0.23	1		06/03/14 03:11	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/03/14 03:11	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		06/03/14 03:11	17060-07-0	
Toluene-d8 (S)	59	%	70-130		1		06/03/14 03:11	2037-26-5	S5

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: TB-053014 **Lab ID: 92203514021** Collected: 05/30/14 00:00 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		06/03/14 01:53	67-64-1	
Benzene	ND	ug/L	1.0	0.25	1		06/03/14 01:53	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		06/03/14 01:53	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		06/03/14 01:53	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		06/03/14 01:53	75-25-2	
Bromomethane	ND	ug/L	5.0	0.29	1		06/03/14 01:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		06/03/14 01:53	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		06/03/14 01:53	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		06/03/14 01:53	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/03/14 01:53	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		06/03/14 01:53	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/03/14 01:53	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		06/03/14 01:53	74-87-3	
Cyclohexane	ND	ug/L	1.0	0.36	1		06/03/14 01:53	110-82-7	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	2.5	1		06/03/14 01:53	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/03/14 01:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		06/03/14 01:53	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		06/03/14 01:53	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		06/03/14 01:53	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 01:53	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/03/14 01:53	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		06/03/14 01:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/03/14 01:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		06/03/14 01:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		06/03/14 01:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		06/03/14 01:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/03/14 01:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		06/03/14 01:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		06/03/14 01:53	10061-02-6	
1,4-Dioxane (p-Dioxane)	ND	ug/L	150	78.4	1		06/03/14 01:53	123-91-1	
Ethylbenzene	ND	ug/L	1.0	0.30	1		06/03/14 01:53	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		06/03/14 01:53	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.40	1		06/03/14 01:53	98-82-8	
Methyl acetate	ND	ug/L	10.0	0.82	1		06/03/14 01:53	79-20-9	
Methylcyclohexane	ND	ug/L	10.0	1.9	1		06/03/14 01:53	108-87-2	
Methylene Chloride	**11.1**	ug/L	2.0	0.97	1		06/03/14 01:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		06/03/14 01:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		06/03/14 01:53	1634-04-4	
Styrene	ND	ug/L	1.0	0.26	1		06/03/14 01:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		06/03/14 01:53	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		06/03/14 01:53	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		06/03/14 01:53	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.33	1		06/03/14 01:53	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.35	1		06/03/14 01:53	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		06/03/14 01:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		06/03/14 01:53	79-00-5	

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ANALYTICAL RESULTS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Sample: TB-053014 **Lab ID: 92203514021** Collected: 05/30/14 00:00 Received: 05/31/14 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		06/03/14 01:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		06/03/14 01:53	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.19	1		06/03/14 01:53	76-13-1	
Vinyl chloride	ND	ug/L	1.0	0.62	1		06/03/14 01:53	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		06/03/14 01:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		06/03/14 01:53	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		06/03/14 01:53	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		06/03/14 01:53	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		06/03/14 01:53	2037-26-5	

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QUALITY CONTROL DATA

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

QC Batch: MSV/27162 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level SC
Associated Lab Samples: 92203514001, 92203514002, 92203514003, 92203514005, 92203514006, 92203514007, 92203514008, 92203514009, 92203514010

METHOD BLANK: 1218681 Matrix: Water
Associated Lab Samples: 92203514001, 92203514002, 92203514003, 92203514005, 92203514006, 92203514007, 92203514008, 92203514009, 92203514010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	06/02/14 12:53	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	06/02/14 12:53	
1,1,2-Trichloroethane	ug/L	ND	1.0	06/02/14 12:53	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	06/02/14 12:53	
1,1-Dichloroethane	ug/L	ND	1.0	06/02/14 12:53	
1,1-Dichloroethene	ug/L	ND	1.0	06/02/14 12:53	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	06/02/14 12:53	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	06/02/14 12:53	
1,2-Dibromo-3-chloropropane	ug/L	ND	3.0	06/02/14 12:53	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	06/02/14 12:53	
1,2-Dichlorobenzene	ug/L	ND	1.0	06/02/14 12:53	
1,2-Dichloroethane	ug/L	ND	1.0	06/02/14 12:53	
1,2-Dichloropropane	ug/L	ND	1.0	06/02/14 12:53	
1,3-Dichlorobenzene	ug/L	ND	1.0	06/02/14 12:53	
1,4-Dichlorobenzene	ug/L	ND	1.0	06/02/14 12:53	
1,4-Dioxane (p-Dioxane)	ug/L	ND	150	06/02/14 12:53	
2-Butanone (MEK)	ug/L	ND	5.0	06/02/14 12:53	
2-Hexanone	ug/L	ND	5.0	06/02/14 12:53	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	06/02/14 12:53	
Acetone	ug/L	ND	25.0	06/02/14 12:53	
Benzene	ug/L	ND	1.0	06/02/14 12:53	
Bromochloromethane	ug/L	ND	1.0	06/02/14 12:53	
Bromodichloromethane	ug/L	ND	1.0	06/02/14 12:53	
Bromoform	ug/L	ND	1.0	06/02/14 12:53	
Bromomethane	ug/L	ND	5.0	06/02/14 12:53	
Carbon disulfide	ug/L	ND	2.0	06/02/14 12:53	
Carbon tetrachloride	ug/L	ND	1.0	06/02/14 12:53	
Chlorobenzene	ug/L	ND	1.0	06/02/14 12:53	
Chloroethane	ug/L	ND	1.0	06/02/14 12:53	
Chloroform	ug/L	ND	1.0	06/02/14 12:53	
Chloromethane	ug/L	ND	1.0	06/02/14 12:53	
cis-1,2-Dichloroethene	ug/L	ND	1.0	06/02/14 12:53	
cis-1,3-Dichloropropene	ug/L	ND	1.0	06/02/14 12:53	
Cyclohexane	ug/L	ND	1.0	06/02/14 12:53	
Dibromochloromethane	ug/L	ND	1.0	06/02/14 12:53	
Dichlorodifluoromethane	ug/L	ND	1.0	06/02/14 12:53	
Ethylbenzene	ug/L	ND	1.0	06/02/14 12:53	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	06/02/14 12:53	
m&p-Xylene	ug/L	ND	2.0	06/02/14 12:53	
Methyl acetate	ug/L	ND	10.0	06/02/14 12:53	

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QUALITY CONTROL DATA

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

METHOD BLANK: 1218681 Matrix: Water

Associated Lab Samples: 92203514001, 92203514002, 92203514003, 92203514005, 92203514006, 92203514007, 92203514008, 92203514009, 92203514010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methyl-tert-butyl ether	ug/L	ND	1.0	06/02/14 12:53	
Methylcyclohexane	ug/L	ND	10.0	06/02/14 12:53	
Methylene Chloride	ug/L	ND	2.0	06/02/14 12:53	
o-Xylene	ug/L	ND	1.0	06/02/14 12:53	
Styrene	ug/L	ND	1.0	06/02/14 12:53	
Tetrachloroethene	ug/L	ND	1.0	06/02/14 12:53	
Toluene	ug/L	ND	1.0	06/02/14 12:53	
trans-1,2-Dichloroethene	ug/L	ND	1.0	06/02/14 12:53	
trans-1,3-Dichloropropene	ug/L	ND	1.0	06/02/14 12:53	
Trichloroethene	ug/L	ND	1.0	06/02/14 12:53	
Trichlorofluoromethane	ug/L	ND	1.0	06/02/14 12:53	
Vinyl chloride	ug/L	ND	1.0	06/02/14 12:53	
1,2-Dichloroethane-d4 (S)	%	98	70-130	06/02/14 12:53	
4-Bromofluorobenzene (S)	%	101	70-130	06/02/14 12:53	
Toluene-d8 (S)	%	100	70-130	06/02/14 12:53	

LABORATORY CONTROL SAMPLE: 1218682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	49.0	98	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	46.9	94	70-130	
1,1,2-Trichloroethane	ug/L	50	49.5	99	70-130	
1,1,2-Trichlorotrifluoroethane	ug/L	50	52.7	105	70-130	
1,1-Dichloroethane	ug/L	50	46.1	92	70-130	
1,1-Dichloroethene	ug/L	50	52.6	105	70-130	
1,2,3-Trichlorobenzene	ug/L	50	51.2	102	70-130	
1,2,4-Trichlorobenzene	ug/L	50	49.8	100	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	49.5	99	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	48.4	97	70-130	
1,2-Dichlorobenzene	ug/L	50	50.1	100	70-130	
1,2-Dichloroethane	ug/L	50	48.9	98	70-130	
1,2-Dichloropropane	ug/L	50	48.5	97	70-130	
1,3-Dichlorobenzene	ug/L	50	49.3	99	70-130	
1,4-Dichlorobenzene	ug/L	50	48.8	98	70-130	
1,4-Dioxane (p-Dioxane)	ug/L	1000	970	97	70-130	
2-Butanone (MEK)	ug/L	100	93.9	94	70-130	
2-Hexanone	ug/L	100	90.7	91	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.9	98	70-130	
Acetone	ug/L	100	95.2	95	70-130	
Benzene	ug/L	50	50.2	100	70-130	
Bromochloromethane	ug/L	50	50.7	101	70-130	
Bromodichloromethane	ug/L	50	47.8	96	70-130	
Bromoform	ug/L	50	49.1	98	70-130	

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QUALITY CONTROL DATA

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

LABORATORY CONTROL SAMPLE: 1218682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromomethane	ug/L	50	51.2	102	70-130	
Carbon disulfide	ug/L	50	52.0	104	70-130	
Carbon tetrachloride	ug/L	50	54.0	108	70-130	
Chlorobenzene	ug/L	50	46.5	93	70-130	
Chloroethane	ug/L	50	55.4	111	70-130	
Chloroform	ug/L	50	49.3	99	70-130	
Chloromethane	ug/L	50	52.4	105	70-130	
cis-1,2-Dichloroethene	ug/L	50	49.0	98	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.7	99	70-130	
Cyclohexane	ug/L	50	57.4	115	70-130	
Dibromochloromethane	ug/L	50	47.1	94	70-130	
Dichlorodifluoromethane	ug/L	50	59.2	118	70-130	
Ethylbenzene	ug/L	50	47.0	94	70-130	
Isopropylbenzene (Cumene)	ug/L	50	50.0	100	70-130	
m&p-Xylene	ug/L	100	95.3	95	70-130	
Methyl acetate	ug/L	50	45.1	90	70-130	
Methyl-tert-butyl ether	ug/L	50	51.5	103	70-130	
Methylcyclohexane	ug/L	50	55.6	111	70-130	
Methylene Chloride	ug/L	50	53.3	107	70-130	
o-Xylene	ug/L	50	46.7	93	70-130	
Styrene	ug/L	50	49.6	99	70-130	
Tetrachloroethene	ug/L	50	50.7	101	70-130	
Toluene	ug/L	50	48.8	98	70-130	
trans-1,2-Dichloroethene	ug/L	50	50.9	102	70-130	
trans-1,3-Dichloropropene	ug/L	50	49.2	98	70-130	
Trichloroethene	ug/L	50	49.8	100	70-130	
Trichlorofluoromethane	ug/L	50	59.2	118	70-130	
Vinyl chloride	ug/L	50	66.0	132	70-130	L0
1,2-Dichloroethane-d4 (S)	%			96	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1218683 1218684

Parameter	Units	92203514001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	73.0	66.5	146	133	70-130	9	30	M0
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	57.0	50.6	114	101	70-130	12	30	
1,1,2-Trichloroethane	ug/L	ND	50	50	65.2	59.0	130	118	70-130	10	30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	50	50	76.4	69.2	153	138	70-130	10	30	M0
1,1-Dichloroethane	ug/L	ND	50	50	69.8	62.4	140	125	70-130	11	30	M0
1,1-Dichloroethene	ug/L	ND	50	50	77.1	69.8	154	140	70-130	10	30	M0
1,2,3-Trichlorobenzene	ug/L	ND	50	50	52.6	50.8	105	102	70-130	4	30	
1,2,4-Trichlorobenzene	ug/L	ND	50	50	51.2	48.5	102	97	70-130	5	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	54.3	50.8	109	102	70-130	7	30	

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QUALITY CONTROL DATA

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1218683 1218684

Parameter	Units	92203514001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	57.7	51.5	115	103	70-130	11	30	
1,2-Dichlorobenzene	ug/L	ND	50	50	55.7	51.3	111	103	70-130	8	30	
1,2-Dichloroethane	ug/L	ND	50	50	71.2	62.3	142	125	70-130	13	30	M0
1,2-Dichloropropane	ug/L	ND	50	50	66.5	59.3	133	119	70-130	12	30	M0
1,3-Dichlorobenzene	ug/L	ND	50	50	54.2	49.6	108	99	70-130	9	30	
1,4-Dichlorobenzene	ug/L	ND	50	50	54.5	50.1	109	100	70-130	8	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	1000	1000	1390	1150	139	115	70-130	18	30	M0
2-Butanone (MEK)	ug/L	ND	100	100	124	116	124	116	70-130	7	30	
2-Hexanone	ug/L	ND	100	100	106	96.8	106	97	70-130	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	127	116	127	116	70-130	9	30	
Acetone	ug/L	ND	100	100	128	114	124	110	70-130	11	30	
Benzene	ug/L	ND	50	50	70.0	63.1	140	126	70-130	10	30	M0
Bromochloromethane	ug/L	ND	50	50	73.1	64.2	146	128	70-130	13	30	M0
Bromodichloromethane	ug/L	ND	50	50	64.4	56.9	129	114	70-130	12	30	
Bromoform	ug/L	ND	50	50	56.0	50.5	112	101	70-130	10	30	
Bromomethane	ug/L	ND	50	50	85.1	83.3	170	167	70-130	2	30	M0
Carbon disulfide	ug/L	ND	50	50	74.2	68.1	148	136	70-130	9	30	M0
Carbon tetrachloride	ug/L	ND	50	50	72.0	67.3	144	135	70-130	7	30	M0
Chlorobenzene	ug/L	ND	50	50	57.2	51.8	114	104	70-130	10	30	
Chloroethane	ug/L	ND	50	50	81.4	75.0	163	150	70-130	8	30	M0
Chloroform	ug/L	ND	50	50	72.6	64.7	145	129	70-130	12	30	M0
Chloromethane	ug/L	ND	50	50	79.7	70.3	159	141	70-130	13	30	M0
cis-1,2-Dichloroethene	ug/L	ND	50	50	72.8	65.2	146	130	70-130	11	30	M0
cis-1,3-Dichloropropene	ug/L	ND	50	50	65.5	58.6	131	117	70-130	11	30	M0
Cyclohexane	ug/L	ND	50	50	86.3	79.4	173	159	70-130	8	30	M0
Dibromochloromethane	ug/L	ND	50	50	55.7	49.9	111	100	70-130	11	30	
Dichlorodifluoromethane	ug/L	ND	50	50	85.4	78.1	171	156	70-130	9	30	M0
Ethylbenzene	ug/L	ND	50	50	58.6	52.7	117	105	70-130	11	30	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	62.4	56.7	125	113	70-130	10	30	
m&p-Xylene	ug/L	ND	100	100	118	107	118	106	70-130	10	30	
Methyl acetate	ug/L	ND	50	50	66.9	60.8	134	122	70-130	10	30	M0
Methyl-tert-butyl ether	ug/L	ND	50	50	74.0	65.2	148	130	70-130	13	30	M0
Methylcyclohexane	ug/L	ND	50	50	78.3	70.3	157	141	70-130	11	30	M0
Methylene Chloride	ug/L	ND	50	50	71.9	62.1	144	124	70-130	15	30	M0
o-Xylene	ug/L	ND	50	50	58.1	52.1	116	104	70-130	11	30	
Styrene	ug/L	ND	50	50	60.8	54.4	122	109	70-130	11	30	
Tetrachloroethene	ug/L	ND	50	50	61.2	55.9	122	112	70-130	9	30	
Toluene	ug/L	ND	50	50	67.7	61.3	135	123	70-130	10	30	M0
trans-1,2-Dichloroethene	ug/L	ND	50	50	75.4	67.9	151	136	70-130	10	30	M0
trans-1,3-Dichloropropene	ug/L	ND	50	50	63.8	57.6	128	115	70-130	10	30	
Trichloroethene	ug/L	ND	50	50	66.7	61.2	133	122	70-130	9	30	M0
Trichlorofluoromethane	ug/L	ND	50	50	86.9	79.5	174	159	70-130	9	30	M0
Vinyl chloride	ug/L	ND	50	50	99.0	90.7	198	181	70-130	9	30	M0
1,2-Dichloroethane-d4 (S)	%						102	101	70-130			
4-Bromofluorobenzene (S)	%						101	101	70-130			
Toluene-d8 (S)	%						105	104	70-130			

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QUALITY CONTROL DATA

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

QC Batch: MSV/27163 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level SC
Associated Lab Samples: 92203514004, 92203514011, 92203514012, 92203514013, 92203514015, 92203514016, 92203514017, 92203514018, 92203514019, 92203514020, 92203514021

METHOD BLANK: 1218691 Matrix: Water
Associated Lab Samples: 92203514004, 92203514011, 92203514012, 92203514013, 92203514015, 92203514016, 92203514017, 92203514018, 92203514019, 92203514020, 92203514021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	06/03/14 00:51	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	06/03/14 00:51	
1,1,2-Trichloroethane	ug/L	ND	1.0	06/03/14 00:51	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	06/03/14 00:51	
1,1-Dichloroethane	ug/L	ND	1.0	06/03/14 00:51	
1,1-Dichloroethene	ug/L	ND	1.0	06/03/14 00:51	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	06/03/14 00:51	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	06/03/14 00:51	
1,2-Dibromo-3-chloropropane	ug/L	ND	3.0	06/03/14 00:51	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	06/03/14 00:51	
1,2-Dichlorobenzene	ug/L	ND	1.0	06/03/14 00:51	
1,2-Dichloroethane	ug/L	ND	1.0	06/03/14 00:51	
1,2-Dichloropropane	ug/L	ND	1.0	06/03/14 00:51	
1,3-Dichlorobenzene	ug/L	ND	1.0	06/03/14 00:51	
1,4-Dichlorobenzene	ug/L	ND	1.0	06/03/14 00:51	
1,4-Dioxane (p-Dioxane)	ug/L	ND	150	06/03/14 00:51	
2-Butanone (MEK)	ug/L	ND	5.0	06/03/14 00:51	
2-Hexanone	ug/L	ND	5.0	06/03/14 00:51	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	06/03/14 00:51	
Acetone	ug/L	ND	25.0	06/03/14 00:51	
Benzene	ug/L	ND	1.0	06/03/14 00:51	
Bromochloromethane	ug/L	ND	1.0	06/03/14 00:51	
Bromodichloromethane	ug/L	ND	1.0	06/03/14 00:51	
Bromoform	ug/L	ND	1.0	06/03/14 00:51	
Bromomethane	ug/L	ND	5.0	06/03/14 00:51	
Carbon disulfide	ug/L	ND	2.0	06/03/14 00:51	
Carbon tetrachloride	ug/L	ND	1.0	06/03/14 00:51	
Chlorobenzene	ug/L	ND	1.0	06/03/14 00:51	
Chloroethane	ug/L	ND	1.0	06/03/14 00:51	
Chloroform	ug/L	ND	1.0	06/03/14 00:51	
Chloromethane	ug/L	ND	1.0	06/03/14 00:51	
cis-1,2-Dichloroethene	ug/L	ND	1.0	06/03/14 00:51	
cis-1,3-Dichloropropene	ug/L	ND	1.0	06/03/14 00:51	
Cyclohexane	ug/L	ND	1.0	06/03/14 00:51	
Dibromochloromethane	ug/L	ND	1.0	06/03/14 00:51	
Dichlorodifluoromethane	ug/L	ND	1.0	06/03/14 00:51	
Ethylbenzene	ug/L	ND	1.0	06/03/14 00:51	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	06/03/14 00:51	
m&p-Xylene	ug/L	ND	2.0	06/03/14 00:51	
Methyl acetate	ug/L	ND	10.0	06/03/14 00:51	

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QUALITY CONTROL DATA

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

METHOD BLANK: 1218691 Matrix: Water

Associated Lab Samples: 92203514004, 92203514011, 92203514012, 92203514013, 92203514015, 92203514016, 92203514017, 92203514018, 92203514019, 92203514020, 92203514021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methyl-tert-butyl ether	ug/L	ND	1.0	06/03/14 00:51	
Methylcyclohexane	ug/L	ND	10.0	06/03/14 00:51	
Methylene Chloride	ug/L	ND	2.0	06/03/14 00:51	
o-Xylene	ug/L	ND	1.0	06/03/14 00:51	
Styrene	ug/L	ND	1.0	06/03/14 00:51	
Tetrachloroethene	ug/L	ND	1.0	06/03/14 00:51	
Toluene	ug/L	ND	1.0	06/03/14 00:51	
trans-1,2-Dichloroethene	ug/L	ND	1.0	06/03/14 00:51	
trans-1,3-Dichloropropene	ug/L	ND	1.0	06/03/14 00:51	
Trichloroethene	ug/L	ND	1.0	06/03/14 00:51	
Trichlorofluoromethane	ug/L	ND	1.0	06/03/14 00:51	
Vinyl chloride	ug/L	ND	1.0	06/03/14 00:51	
1,2-Dichloroethane-d4 (S)	%	100	70-130	06/03/14 00:51	
4-Bromofluorobenzene (S)	%	103	70-130	06/03/14 00:51	
Toluene-d8 (S)	%	101	70-130	06/03/14 00:51	

LABORATORY CONTROL SAMPLE: 1218692

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	51.3	103	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	47.4	95	70-130	
1,1,2-Trichloroethane	ug/L	50	52.0	104	70-130	
1,1,2-Trichlorotrifluoroethane	ug/L	50	55.4	111	70-130	
1,1-Dichloroethane	ug/L	50	49.0	98	70-130	
1,1-Dichloroethene	ug/L	50	55.2	110	70-130	
1,2,3-Trichlorobenzene	ug/L	50	48.5	97	70-130	
1,2,4-Trichlorobenzene	ug/L	50	46.1	92	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	49.4	99	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	47.3	95	70-130	
1,2-Dichlorobenzene	ug/L	50	45.9	92	70-130	
1,2-Dichloroethane	ug/L	50	52.4	105	70-130	
1,2-Dichloropropane	ug/L	50	49.5	99	70-130	
1,3-Dichlorobenzene	ug/L	50	44.3	89	70-130	
1,4-Dichlorobenzene	ug/L	50	44.0	88	70-130	
1,4-Dioxane (p-Dioxane)	ug/L	1000	1210	121	70-130	
2-Butanone (MEK)	ug/L	100	111	111	70-130	
2-Hexanone	ug/L	100	97.2	97	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	111	111	70-130	
Acetone	ug/L	100	108	108	70-130	
Benzene	ug/L	50	51.1	102	70-130	
Bromochloromethane	ug/L	50	54.1	108	70-130	
Bromodichloromethane	ug/L	50	48.8	98	70-130	
Bromoform	ug/L	50	48.5	97	70-130	

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

LABORATORY CONTROL SAMPLE: 1218692

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromomethane	ug/L	50	54.9	110	70-130	
Carbon disulfide	ug/L	50	53.9	108	70-130	
Carbon tetrachloride	ug/L	50	55.0	110	70-130	
Chlorobenzene	ug/L	50	44.1	88	70-130	
Chloroethane	ug/L	50	57.5	115	70-130	
Chloroform	ug/L	50	50.8	102	70-130	
Chloromethane	ug/L	50	54.1	108	70-130	
cis-1,2-Dichloroethene	ug/L	50	51.7	103	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.7	99	70-130	
Cyclohexane	ug/L	50	60.5	121	70-130	
Dibromochloromethane	ug/L	50	45.1	90	70-130	
Dichlorodifluoromethane	ug/L	50	58.4	117	70-130	
Ethylbenzene	ug/L	50	44.2	88	70-130	
Isopropylbenzene (Cumene)	ug/L	50	47.9	96	70-130	
m&p-Xylene	ug/L	100	90.7	91	70-130	
Methyl acetate	ug/L	50	51.3	103	70-130	
Methyl-tert-butyl ether	ug/L	50	56.7	113	70-130	
Methylcyclohexane	ug/L	50	56.0	112	70-130	
Methylene Chloride	ug/L	50	54.8	110	70-130	
o-Xylene	ug/L	50	44.5	89	70-130	
Styrene	ug/L	50	47.3	95	70-130	
Tetrachloroethene	ug/L	50	48.2	96	70-130	
Toluene	ug/L	50	50.1	100	70-130	
trans-1,2-Dichloroethene	ug/L	50	52.8	106	70-130	
trans-1,3-Dichloropropene	ug/L	50	50.1	100	70-130	
Trichloroethene	ug/L	50	50.2	100	70-130	
Trichlorofluoromethane	ug/L	50	61.8	124	70-130	
Vinyl chloride	ug/L	50	68.1	136	70-130	L0
1,2-Dichloroethane-d4 (S)	%			100	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Toluene-d8 (S)	%			103	70-130	

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QUALITY CONTROL DATA

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

QC Batch: MSV/27174
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Low Level SC
Associated Lab Samples: 92203514014

METHOD BLANK: 1218970
Matrix: Water
Associated Lab Samples: 92203514014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	06/03/14 00:36	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	06/03/14 00:36	
1,1,2-Trichloroethane	ug/L	ND	1.0	06/03/14 00:36	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	06/03/14 00:36	
1,1-Dichloroethane	ug/L	ND	1.0	06/03/14 00:36	
1,1-Dichloroethene	ug/L	ND	1.0	06/03/14 00:36	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	06/03/14 00:36	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	06/03/14 00:36	
1,2-Dibromo-3-chloropropane	ug/L	ND	3.0	06/03/14 00:36	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	06/03/14 00:36	
1,2-Dichlorobenzene	ug/L	ND	1.0	06/03/14 00:36	
1,2-Dichloroethane	ug/L	ND	1.0	06/03/14 00:36	
1,2-Dichloropropane	ug/L	ND	1.0	06/03/14 00:36	
1,3-Dichlorobenzene	ug/L	ND	1.0	06/03/14 00:36	
1,4-Dichlorobenzene	ug/L	ND	1.0	06/03/14 00:36	
1,4-Dioxane (p-Dioxane)	ug/L	ND	150	06/03/14 00:36	
2-Butanone (MEK)	ug/L	ND	5.0	06/03/14 00:36	
2-Hexanone	ug/L	ND	5.0	06/03/14 00:36	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	06/03/14 00:36	
Acetone	ug/L	ND	25.0	06/03/14 00:36	
Benzene	ug/L	ND	1.0	06/03/14 00:36	
Bromochloromethane	ug/L	ND	1.0	06/03/14 00:36	
Bromodichloromethane	ug/L	ND	1.0	06/03/14 00:36	
Bromoform	ug/L	ND	1.0	06/03/14 00:36	
Bromomethane	ug/L	ND	5.0	06/03/14 00:36	
Carbon disulfide	ug/L	ND	2.0	06/03/14 00:36	
Carbon tetrachloride	ug/L	ND	1.0	06/03/14 00:36	
Chlorobenzene	ug/L	ND	1.0	06/03/14 00:36	
Chloroethane	ug/L	ND	1.0	06/03/14 00:36	
Chloroform	ug/L	ND	1.0	06/03/14 00:36	
Chloromethane	ug/L	ND	1.0	06/03/14 00:36	
cis-1,2-Dichloroethene	ug/L	ND	1.0	06/03/14 00:36	
cis-1,3-Dichloropropene	ug/L	ND	1.0	06/03/14 00:36	
Cyclohexane	ug/L	ND	1.0	06/03/14 00:36	
Dibromochloromethane	ug/L	ND	1.0	06/03/14 00:36	
Dichlorodifluoromethane	ug/L	ND	1.0	06/03/14 00:36	
Ethylbenzene	ug/L	ND	1.0	06/03/14 00:36	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	06/03/14 00:36	
m&p-Xylene	ug/L	ND	2.0	06/03/14 00:36	
Methyl acetate	ug/L	ND	10.0	06/03/14 00:36	
Methyl-tert-butyl ether	ug/L	ND	1.0	06/03/14 00:36	

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QUALITY CONTROL DATA

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

METHOD BLANK: 1218970 Matrix: Water
Associated Lab Samples: 92203514014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methylcyclohexane	ug/L	ND	10.0	06/03/14 00:36	
Methylene Chloride	ug/L	ND	2.0	06/03/14 00:36	
o-Xylene	ug/L	ND	1.0	06/03/14 00:36	
Styrene	ug/L	ND	1.0	06/03/14 00:36	
Tetrachloroethene	ug/L	ND	1.0	06/03/14 00:36	
Toluene	ug/L	ND	1.0	06/03/14 00:36	
trans-1,2-Dichloroethene	ug/L	ND	1.0	06/03/14 00:36	
trans-1,3-Dichloropropene	ug/L	ND	1.0	06/03/14 00:36	
Trichloroethene	ug/L	ND	1.0	06/03/14 00:36	
Trichlorofluoromethane	ug/L	ND	1.0	06/03/14 00:36	
Vinyl chloride	ug/L	ND	1.0	06/03/14 00:36	
1,2-Dichloroethane-d4 (S)	%	98	70-130	06/03/14 00:36	
4-Bromofluorobenzene (S)	%	101	70-130	06/03/14 00:36	
Toluene-d8 (S)	%	100	70-130	06/03/14 00:36	

LABORATORY CONTROL SAMPLE: 1218971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.6	107	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	47.5	95	70-130	
1,1,2-Trichloroethane	ug/L	50	53.4	107	70-130	
1,1,2-Trichlorotrifluoroethane	ug/L	50	57.3	115	70-130	
1,1-Dichloroethane	ug/L	50	50.8	102	70-130	
1,1-Dichloroethene	ug/L	50	58.2	116	70-130	
1,2,3-Trichlorobenzene	ug/L	50	47.1	94	70-130	
1,2,4-Trichlorobenzene	ug/L	50	45.2	90	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	46.8	94	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	48.1	96	70-130	
1,2-Dichlorobenzene	ug/L	50	47.8	96	70-130	
1,2-Dichloroethane	ug/L	50	53.4	107	70-130	
1,2-Dichloropropane	ug/L	50	51.1	102	70-130	
1,3-Dichlorobenzene	ug/L	50	45.7	91	70-130	
1,4-Dichlorobenzene	ug/L	50	46.2	92	70-130	
1,4-Dioxane (p-Dioxane)	ug/L	1000	1150	115	70-130	
2-Butanone (MEK)	ug/L	100	104	104	70-130	
2-Hexanone	ug/L	100	91.7	92	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	109	70-130	
Acetone	ug/L	100	104	104	70-130	
Benzene	ug/L	50	53.9	108	70-130	
Bromochloromethane	ug/L	50	55.2	110	70-130	
Bromodichloromethane	ug/L	50	50.7	101	70-130	
Bromoform	ug/L	50	49.0	98	70-130	
Bromomethane	ug/L	50	55.9	112	70-130	
Carbon disulfide	ug/L	50	55.9	112	70-130	

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QUALITY CONTROL DATA

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

LABORATORY CONTROL SAMPLE: 1218971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	50	57.6	115	70-130	
Chlorobenzene	ug/L	50	46.7	93	70-130	
Chloroethane	ug/L	50	59.7	119	70-130	
Chloroform	ug/L	50	53.9	108	70-130	
Chloromethane	ug/L	50	58.2	116	70-130	
cis-1,2-Dichloroethene	ug/L	50	53.2	106	70-130	
cis-1,3-Dichloropropene	ug/L	50	51.7	103	70-130	
Cyclohexane	ug/L	50	63.3	127	70-130	
Dibromochloromethane	ug/L	50	47.1	94	70-130	
Dichlorodifluoromethane	ug/L	50	61.0	122	70-130	
Ethylbenzene	ug/L	50	46.5	93	70-130	
Isopropylbenzene (Cumene)	ug/L	50	50.2	100	70-130	
m&p-Xylene	ug/L	100	94.5	94	70-130	
Methyl acetate	ug/L	50	50.2	100	70-130	
Methyl-tert-butyl ether	ug/L	50	55.9	112	70-130	
Methylcyclohexane	ug/L	50	59.2	118	70-130	
Methylene Chloride	ug/L	50	55.4	111	70-130	
o-Xylene	ug/L	50	47.1	94	70-130	
Styrene	ug/L	50	49.7	99	70-130	
Tetrachloroethene	ug/L	50	50.2	100	70-130	
Toluene	ug/L	50	52.5	105	70-130	
trans-1,2-Dichloroethene	ug/L	50	55.4	111	70-130	
trans-1,3-Dichloropropene	ug/L	50	51.5	103	70-130	
Trichloroethene	ug/L	50	53.7	107	70-130	
Trichlorofluoromethane	ug/L	50	64.4	129	70-130	
Vinyl chloride	ug/L	50	72.3	145	70-130	L0
1,2-Dichloroethane-d4 (S)	%			99	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Toluene-d8 (S)	%			103	70-130	

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QUALIFIERS

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31999-05 WIX - DILLON,SC
Pace Project No.: 92203514

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92203514001	**MW-1**	EPA 8260	MSV/27162		
92203514002	**MW-300**	EPA 8260	MSV/27162		
92203514003	**MW-12-38**	EPA 8260	MSV/27162		
92203514004	**MW-11-36**	EPA 8260	MSV/27163		
92203514005	**MW-300D**	EPA 8260	MSV/27162		
92203514006	**MW-11**	EPA 8260	MSV/27162		
92203514007	**MW-10**	EPA 8260	MSV/27162		
92203514008	**MW-15**	EPA 8260	MSV/27162		
92203514009	**MW-9**	EPA 8260	MSV/27162		
92203514010	**MW-14**	EPA 8260	MSV/27162		
92203514011	**MW-08**	EPA 8260	MSV/27163		
92203514012	**EB-BP-052914**	EPA 8260	MSV/27163		
92203514013	**MW-7**	EPA 8260	MSV/27163		
92203514014	**MW-2**	EPA 8260	MSV/27174		
92203514015	**MW-5**	EPA 8260	MSV/27163		
92203514016	**MW-12**	EPA 8260	MSV/27163		
92203514017	**MW-6**	EPA 8260	MSV/27163		
92203514018	**MW-13**	EPA 8260	MSV/27163		
92203514019	**MW-4R**	EPA 8260	MSV/27163		
92203514020	**MW-3**	EPA 8260	MSV/27163		
92203514021	**TB-053014**	EPA 8260	MSV/27163		

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Pace Analytical	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: April 07, 2014 Page 1 of 2
	Document Number: **F-CHR-CS-003-rev.14**	Issuing Authority: Pace Huntersville Quality Office

Client Name: WSP

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1102 T1401 **Type of Ice:** Wet Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor **T1102**: No Correction **T1301**: No Correction

Corrected Cooler Temp.: 4.2 °C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: TM 5/31

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☐Yes ☑No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:_____	☐Yes ☑No ☐N/A	12. MW12D MW11D marked on COC
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13. but received. Different Id on COC
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	• COC MW14 bottle Sampled MW4R
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	w/ time to match
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☑Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: The sample IDs were revised by client on coc. MW-12D → MW-12-38; MW-11D → MW-11-36.

SCURF Review: JM **Date:** 5-31

SRF Review: AMB **Date:** 6-2-14

Place label here

WO#: 92203514

92203514

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1799640

Section A Required Client Information:

Company:	WSP
Address:	11190 Sunrise Valley Ste 300
Email To:	Erin.Huntley@wspgroup.com
Phone:	703/709-6500
Fax:	703/709-8505
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Erin Huntley
Copy To:	Pam Groff
Purchase Order No.:	
Project Name:	Wix - Dillon, SC
Project Number:	31999-05

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	WSP
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: SC

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: VOCs 8260	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT	G			5/27/14	1735		3				X					X		001
2	MW-300 (PB)	WT	G			5/27/14	1642		3				X					X		002
3	~~MW-12D~~ (PB) MW-12-38	WT	G			5/27/14	1824		3				X					X		003
4	~~MW-11D~~ (PB) MW-11-36	WT	G			5/28/14	0957		3				X					X		004
5	MW-300D	WT	G			5/28/14	0900		3				X					X		005
6	MW-11	WT	G			5/28/14	1132		3				X					X		006
7	MW-10	WT	G			5/28/14	1427		3				X					X		007
8	MW-15	WT	G			5/28/14	1626		3				X					X		008
9	MW-9	WT	G			5/28/14	1525		3				X					X		009
10	MW-14	WT	G			5/28/14	1827		3				X					X		010
11	MW-08	WT	G			5/29/14	0952		3				X					X		011
12	EB BP-052914	WT	G			5/29/14	0920		3				X					X		012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature]	5/30/14	1700	L McLennan	5/30/14	1700				
				J Moore / Pace	5/31	915	4.2	4	N	4

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Pam Groff

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 05/30/14

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1799641

Section A Required Client Information:

Company: WSP
Address: 11190 Sunrise Valley Ste300 Reston, VA
Email To: Erin.Huntley@wspgroup.com
Phone: 703/709-6500 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Erin Huntley
Copy To: Pam Groff, Eric Johnson
Purchase Order No.:
Project Name: Wix - Dillon, SC
Project Number: 31999-05

Section C Invoice Information:

Attention: Accounts Receivable
Company Name: WSP
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): VOC (8260)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. (9220354)
1	MW-7	WT	G	5/29/14		5/29/14	1043		3				X					X		013
2	MW-2	WT	G			5/29/14	1102		3				X					X		014
3	MW-5	WT	G			5/29/14	1233		9				X					X		015
4	MW-12	WT	G			5/29/14	1410		3				X					X		016
5	MW-10	WT	G			5/29/14	1350		3				X					X		017
6	MW-13	WT	G			5/29/14	1635		3				X					X		018
7	MW-14	WT	G			5/29/14	1805		3				X					X		019
8	MW-3	WT	G			5/30/14	0902		3				X					X		020
9	TB-053014	WT	G			Lab Supply			2				X					X		021
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
MW-5 includes MS/MSD samples	Pam Groff	5/30/14	1700	L. McLerman	5/30/14	1700	
TB-053014 is trip blank				J. Moore / Pace	5/31	915	4.2 / Y / N / Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Pam Groff
SIGNATURE of SAMPLER: Pam Groff
DATE Signed (MM/DD/YY): 05/30/14

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

AirTECHNOLOGY
Laboratories, Inc.

May 15, 2014

ACLASS ACCREDITED DoD ELAP
ADE-1461
EPA Methods TO-3, TO14A,TO15 SIM & Scan, ASTM D1946

nelac
LA Cert 04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175
TX Cert T104704450-09-TX
EPA Methods TO14A, TO15
UT Cert CA0133332014-1
EPA Methods TO3, TO14A, TO15, RSK-175

Pace Analytical
ATTN: Kevin Godwin
9800 Kincey Ave., Suite 100
Huntersville, NC 28078

LABORATORY TEST RESULTS

Project Reference: 92199714; 31999-5 WIX FILTRATION PLANT
Lab Number: F050702-01/05

Enclosed are results for sample(s) received 5/07/14 by Air Technology Laboratories. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

MJL. for

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

F050702-01/05

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 92199714 **Workorder Name:** 31999-5 WIX FILTRATION PLANT **Results Requested** 5/14/2014

Report / Invoice To	Subcontract To
Kevin Godwin Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone (704)875-9092 Email: kevin.godwin@pacelabs.com	P.O. KR6.14027 Air Technology 19501 E. Gale Ave. Suite 130 City of Industry, CA 91748

	Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: TO-15 Low Level	LAB USE ONLY
01	1	SSV-1	4/30/2014 19:20	92199714001	Air	1	X	
02	2	SSV-2	4/30/2014 17:20	92199714002	Air	1	X	
03	3	SSV-3	4/30/2014 18:42	92199714003	Air	1	X	
04	4	SSV-4	4/30/2014 18:42	92199714004	Air	1	X	
05	5	TB-043014	4/30/2014 00:00	92199714005	Air	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	5/5/14 17:00		
2	FED EX	5/7/14 0910	[illegible]	5/7/14 0910
3				

Comments

* Level 3 data Package required
* report results in ug/m3 & ppbv [illegible] 5/7/14
* EDD with results.

Cooler Temperature on Receipt °C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	F050702-01		F050702-02		F050702-03		F050702-04	
Client Sample I.D.:	SSV-1 / 92199714001		SSV-2 / 92199714002		SSV-3 / 92199714003		SSV-4 / 92199714004	
Date Sampled:	04/30/14		04/30/14		04/30/14		04/30/14	
Date Analyzed:	05/15/14		05/13/14		05/13/14		05/13/14	
QC Batch No.:	140515MS2A1		140513MS2A1		140513MS2A1		140513MS2A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	0.80		0.20		0.20		0.20	
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Dichlorodifluoromethane (12)	ND	0.80	0.62	0.20	0.48	0.20	0.38	0.20
Chloromethane	ND	1.6	ND	0.40	ND	0.40	ND	0.40
1,2-Cl-1,1,2,2-F ethane (114)	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Vinyl Chloride	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Bromomethane	ND	0.80	ND	0.20	ND	0.20	0.23	0.20
Chloroethane	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Trichlorofluoromethane (11)	ND	0.80	ND	0.20	0.20	0.20	ND	0.20
1,1-Dichloroethene	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Carbon Disulfide	37	4.0	15	1.0	71 d1	1.0	14	1.0
1,1,2-Cl 1,2,2-F ethane (113)	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Acetone	1,900 d	4.0	36	1.0	20	1.0	13	1.0
Methylene Chloride	ND	0.80	ND	0.20	ND	0.20	ND	0.20
t-1,2-Dichloroethene	ND	0.80	ND	0.20	ND	0.20	ND	0.20
1,1-Dichloroethane	2.1	0.80	ND	0.20	ND	0.20	ND	0.20
Vinyl Acetate	ND	4.0	ND	1.0	ND	1.0	ND	1.0
c-1,2-Dichloroethene	ND	0.80	ND	0.20	ND	0.20	ND	0.20
2-Butanone	140	0.80	4.6	0.20	4.6	0.20	7.1	0.20
t-Butyl Methyl Ether (MTBE)	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Chloroform	ND	0.80	ND	0.20	ND	0.20	ND	0.20
1,1,1-Trichloroethane	4.9	0.80	ND	0.20	ND	0.20	ND	0.20
Carbon Tetrachloride	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Benzene	2.4	0.80	0.39	0.20	0.75	0.20	0.87	0.20
1,2-Dichloroethane	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Trichloroethene	12	0.80	2.8	0.20	0.56	0.20	0.78	0.20
1,2-Dichloropropane	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Bromodichloromethane	ND	0.80	ND	0.20	ND	0.20	ND	0.20
c-1,3-Dichloropropene	ND	0.80	ND	0.20	ND	0.20	ND	0.20
4-Methyl-2-Pentanone	33	0.80	0.47	0.20	0.43	0.20	1.8	0.20
Toluene	11	0.80	0.84	0.20	0.94	0.20	0.63	0.20
t-1,3-Dichloropropene	ND	0.80	ND	0.20	ND	0.20	ND	0.20

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	F050702-01		F050702-02		F050702-03		F050702-04	
Client Sample I.D.:	SSV-1 / 92199714001		SSV-2 / 92199714002		SSV-3 / 92199714003		SSV-4 / 92199714004	
Date Sampled:	04/30/14		04/30/14		04/30/14		04/30/14	
Date Analyzed:	05/15/14		05/13/14		05/13/14		05/13/14	
QC Batch No.:	140515MS2A1		140513MS2A1		140513MS2A1		140513MS2A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	0.80		0.20		0.20		0.20	
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
1,1,2-Trichloroethane	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Tetrachloroethene	190	0.80	240 d1	0.20	0.97	0.20	1.1	0.20
2-Hexanone	24	0.80	0.61	0.20	0.45	0.20	0.55	0.20
Dibromochloromethane	ND	0.80	ND	0.20	ND	0.20	ND	0.20
1,2-Dibromoethane	ND	0.80	ND	0.20	ND	0.20	ND	0.20
Chlorobenzene	1.4	0.80	0.23	0.20	ND	0.20	0.21	0.20
Ethylbenzene	1.6	0.80	ND	0.20	ND	0.20	ND	0.20
p,&m-Xylene	6.3	0.80	0.49	0.20	0.55	0.20	0.47	0.20
o-Xylene	2.3	0.80	0.22	0.20	0.36	0.20	0.26	0.20
Styrene	0.83	0.80	ND	0.20	ND	0.20	ND	0.20
Bromoform	ND	0.80	ND	0.20	ND	0.20	ND	0.20
1,1,2,2-Tetrachloroethane	ND	1.6	ND	0.40	ND	0.40	ND	0.40
Benzyl Chloride	ND	0.80	ND	0.20	ND	0.20	ND	0.20
4-Ethyl Toluene	1.5	0.80	ND	0.20	0.33	0.20	0.29	0.20
1,3,5-Trimethylbenzene	ND	1.6	ND	0.40	ND	0.40	ND	0.40
1,2,4-Trimethylbenzene	ND	1.6	ND	0.40	ND	0.40	ND	0.40
1,3-Dichlorobenzene	ND	0.80	ND	0.20	ND	0.20	ND	0.20
1,4-Dichlorobenzene	ND	0.80	ND	0.20	ND	0.20	ND	0.20
1,2-Dichlorobenzene	ND	0.80	ND	0.20	ND	0.20	ND	0.20
1,2,4-Trichlorobenzene	ND	1.6	ND	0.40	ND	0.40	ND	0.40
Hexachlorobutadiene	ND	0.80	ND	0.20	ND	0.20	ND	0.20

ND = Not Detected (below RL)
RL = Reporting Limit
d = Analyte reported from secondary dilution.
d1 = Analyte reported from secondary dilution. QC Batch #140515MS2A1

Reviewed/Approved By: _____ Date 5/15/14
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	F050702-05							
Client Sample I.D.:	TB-043014 / 92199714005							
Date Sampled:	04/30/14							
Date Analyzed:	05/13/14							
QC Batch No.:	140513MS2A1							
Analyst Initials:	VM							
Dilution Factor:	0.20							
ANALYTE	Result ppbv	RL ppbv						
Dichlorodifluoromethane (12)	ND	0.20						
Chloromethane	ND	0.40						
1,2-Cl-1,1,2,2-F ethane (114)	ND	0.20						
Vinyl Chloride	ND	0.20						
Bromomethane	ND	0.20						
Chloroethane	ND	0.20						
Trichlorofluoromethane (11)	ND	0.20						
1,1-Dichloroethene	ND	0.20						
Carbon Disulfide	ND	1.0						
1,1,2-Cl 1,2,2-F ethane (113)	ND	0.20						
Acetone	ND	1.0						
Methylene Chloride	ND	0.20						
t-1,2-Dichloroethene	ND	0.20						
1,1-Dichloroethane	ND	0.20						
Vinyl Acetate	ND	1.0						
c-1,2-Dichloroethene	ND	0.20						
2-Butanone	ND	0.20						
t-Butyl Methyl Ether (MTBE)	ND	0.20						
Chloroform	ND	0.20						
1,1,1-Trichloroethane	ND	0.20						
Carbon Tetrachloride	ND	0.20						
Benzene	ND	0.20						
1,2-Dichloroethane	ND	0.20						
Trichloroethene	ND	0.20						
1,2-Dichloropropane	ND	0.20						
Bromodichloromethane	ND	0.20						
c-1,3-Dichloropropene	ND	0.20						
4-Methyl-2-Pentanone	ND	0.20						
Toluene	ND	0.20						
t-1,3-Dichloropropene	ND	0.20						

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	F050702-05							
Client Sample I.D.:	TB-043014 / 92199714005							
Date Sampled:	04/30/14							
Date Analyzed:	05/13/14							
QC Batch No.:	140513MS2A1							
Analyst Initials:	VM							
Dilution Factor:	0.20							
ANALYTE	Result ppbv	RL ppbv						
1,1,2-Trichloroethane	ND	0.20						
Tetrachloroethene	ND	0.20						
2-Hexanone	ND	0.20						
Dibromochloromethane	ND	0.20						
1,2-Dibromoethane	ND	0.20						
Chlorobenzene	ND	0.20						
Ethylbenzene	ND	0.20						
p,&m-Xylene	ND	0.20						
o-Xylene	ND	0.20						
Styrene	ND	0.20						
Bromoform	ND	0.20						
1,1,2,2-Tetrachloroethane	ND	0.40						
Benzyl Chloride	ND	0.20						
4-Ethyl Toluene	ND	0.20						
1,3,5-Trimethylbenzene	ND	0.40						
1,2,4-Trimethylbenzene	ND	0.40						
1,3-Dichlorobenzene	ND	0.20						
1,4-Dichlorobenzene	ND	0.20						
1,2-Dichlorobenzene	ND	0.20						
1,2,4-Trichlorobenzene	ND	0.40						
Hexachlorobutadiene	ND	0.20						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
Operations Manager

Date 5/15/14

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	METHOD BLANK		METHOD BLANK		METHOD BLANK			
Client Sample I.D.:	--		--		--			
Date Sampled:	--		--		--			
Date Analyzed:	05/13/14		05/14/14		05/15/14			
QC Batch No.:	140513MS2A1		140514MS2A1		140515MS2A1			
Analyst Initials:	VM		VM		VM			
Dilution Factor:	0.20		0.20		0.20			
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv		
Dichlorodifluoromethane (12)	ND	0.20	ND	0.20	ND	0.20		
Chloromethane	ND	0.40	ND	0.40	ND	0.40		
1,2-Cl-1,1,2,2-F ethane (114)	ND	0.20	ND	0.20	ND	0.20		
Vinyl Chloride	ND	0.20	ND	0.20	ND	0.20		
Bromomethane	ND	0.20	ND	0.20	ND	0.20		
Chloroethane	ND	0.20	ND	0.20	ND	0.20		
Trichlorofluoromethane (11)	ND	0.20	ND	0.20	ND	0.20		
1,1-Dichloroethene	ND	0.20	ND	0.20	ND	0.20		
Carbon Disulfide	ND	1.0	ND	1.0	ND	1.0		
1,1,2-Cl 1,2,2-F ethane (113)	ND	0.20	ND	0.20	ND	0.20		
Acetone	ND	1.0	ND	1.0	ND	1.0		
Methylene Chloride	ND	0.20	ND	0.20	ND	0.20		
t-1,2-Dichloroethene	ND	0.20	ND	0.20	ND	0.20		
1,1-Dichloroethane	ND	0.20	ND	0.20	ND	0.20		
Vinyl Acetate	ND	1.0	ND	1.0	ND	1.0		
c-1,2-Dichloroethene	ND	0.20	ND	0.20	ND	0.20		
2-Butanone	ND	0.20	ND	0.20	ND	0.20		
t-Butyl Methyl Ether (MTBE)	ND	0.20	ND	0.20	ND	0.20		
Chloroform	ND	0.20	ND	0.20	ND	0.20		
1,1,1-Trichloroethane	ND	0.20	ND	0.20	ND	0.20		
Carbon Tetrachloride	ND	0.20	ND	0.20	ND	0.20		
Benzene	ND	0.20	ND	0.20	ND	0.20		
1,2-Dichloroethane	ND	0.20	ND	0.20	ND	0.20		
Trichloroethene	ND	0.20	ND	0.20	ND	0.20		
1,2-Dichloropropane	ND	0.20	ND	0.20	ND	0.20		
Bromodichloromethane	ND	0.20	ND	0.20	ND	0.20		
c-1,3-Dichloropropene	ND	0.20	ND	0.20	ND	0.20		
4-Methyl-2-Pentanone	ND	0.20	ND	0.20	ND	0.20		
Toluene	ND	0.20	ND	0.20	ND	0.20		
t-1,3-Dichloropropene	ND	0.20	ND	0.20	ND	0.20		

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	METHOD BLANK		METHOD BLANK		METHOD BLANK			
Client Sample I.D.:	--		--		--			
Date Sampled:	--		--		--			
Date Analyzed:	05/13/14		05/14/14		05/15/14			
QC Batch No.:	140513MS2A1		140514MS2A1		140515MS2A1			
Analyst Initials:	VM		VM		VM			
Dilution Factor:	0.20		0.20		0.20			
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv		
1,1,2-Trichloroethane	ND	0.20	ND	0.20	ND	0.20		
Tetrachloroethene	ND	0.20	ND	0.20	ND	0.20		
2-Hexanone	ND	0.20	ND	0.20	ND	0.20		
Dibromochloromethane	ND	0.20	ND	0.20	ND	0.20		
1,2-Dibromoethane	ND	0.20	ND	0.20	ND	0.20		
Chlorobenzene	ND	0.20	ND	0.20	ND	0.20		
Ethylbenzene	ND	0.20	ND	0.20	ND	0.20		
p,&m-Xylene	ND	0.20	ND	0.20	ND	0.20		
o-Xylene	ND	0.20	ND	0.20	ND	0.20		
Styrene	ND	0.20	ND	0.20	ND	0.20		
Bromoform	ND	0.20	ND	0.20	ND	0.20		
1,1,2,2-Tetrachloroethane	ND	0.40	ND	0.40	ND	0.40		
Benzyl Chloride	ND	0.20	ND	0.20	ND	0.20		
4-Ethyl Toluene	ND	0.20	ND	0.20	ND	0.20		
1,3,5-Trimethylbenzene	ND	0.40	ND	0.40	ND	0.40		
1,2,4-Trimethylbenzene	ND	0.40	ND	0.40	ND	0.40		
1,3-Dichlorobenzene	ND	0.20	ND	0.20	ND	0.20		
1,4-Dichlorobenzene	ND	0.20	ND	0.20	ND	0.20		
1,2-Dichlorobenzene	ND	0.20	ND	0.20	ND	0.20		
1,2,4-Trichlorobenzene	ND	0.40	ND	0.40	ND	0.40		
Hexachlorobutadiene	ND	0.20	ND	0.20	ND	0.20		

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: Mark Johnson, Operations Manager Date 5/15/14

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15

Lab No.:	F050702-01		F050702-02		F050702-03		F050702-04	
Client Sample I.D.:	SSV-1 / 92199714001		SSV-2 / 92199714002		SSV-3 / 92199714003		SSV-4 / 92199714004	
Date Sampled:	04/30/14		04/30/14		04/30/14		04/30/14	
Date Analyzed:	05/15/14		05/13/14		05/13/14		05/13/14	
QC Batch No.:	140515MS2A1		140513MS2A1		140513MS2A1		140513MS2A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	0.80		0.20		0.20		0.20	
ANALYTE	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3
Dichlorodifluoromethane (12)	ND	3.9	3.1	0.99	2.4	0.99	1.9	0.99
Chloromethane	ND	3.3	ND	0.83	ND	0.83	ND	0.83
1,2-Cl-1,1,2,2-F ethane (114)	ND	5.6	ND	1.4	ND	1.4	ND	1.4
Vinyl Chloride	ND	2.0	ND	0.51	ND	0.51	ND	0.51
Bromomethane	ND	3.1	ND	0.78	ND	0.78	0.90	0.78
Chloroethane	ND	2.1	ND	0.53	ND	0.53	ND	0.53
Trichlorofluoromethane (11)	ND	4.5	ND	1.1	1.1	1.1	ND	1.1
1,1-Dichloroethene	ND	3.2	ND	0.79	ND	0.79	ND	0.79
Carbon Disulfide	110	12	46	3.1	220 d1	3.1	44	3.1
1,1,2-Cl 1,2,2-F ethane (113)	ND	6.1	ND	1.5	ND	1.5	ND	1.5
Acetone	4,500 d	9.5	86	2.4	46	2.4	31	2.4
Methylene Chloride	ND	2.8	ND	0.69	ND	0.69	ND	0.69
t-1,2-Dichloroethene	ND	3.2	ND	0.79	ND	0.79	ND	0.79
1,1-Dichloroethane	8.3	3.2	ND	0.81	ND	0.81	ND	0.81
Vinyl Acetate	ND	14	ND	3.5	ND	3.5	ND	3.5
c-1,2-Dichloroethene	ND	3.2	ND	0.79	ND	0.79	ND	0.79
2-Butanone	420	2.4	13	0.59	14	0.59	21	0.59
t-Butyl Methyl Ether (MTBE)	ND	2.9	ND	0.72	ND	0.72	ND	0.72
Chloroform	ND	3.9	ND	0.98	ND	0.98	ND	0.98
1,1,1-Trichloroethane	27	4.4	ND	1.1	ND	1.1	ND	1.1
Carbon Tetrachloride	ND	5.0	ND	1.3	ND	1.3	ND	1.3
Benzene	7.8	2.5	1.2	0.64	2.4	0.64	2.8	0.64
1,2-Dichloroethane	ND	3.2	ND	0.81	ND	0.81	ND	0.81
Trichloroethene	64	4.3	15	1.1	3.0	1.1	4.2	1.1
1,2-Dichloropropane	ND	3.7	ND	0.92	ND	0.92	ND	0.92
Bromodichloromethane	ND	5.3	ND	1.3	ND	1.3	ND	1.3
c-1,3-Dichloropropene	ND	3.6	ND	0.91	ND	0.91	ND	0.91
4-Methyl-2-Pentanone	130	3.3	1.9	0.82	1.8	0.82	7.3	0.82
Toluene	40	3.0	3.2	0.75	3.5	0.75	2.4	0.75
t-1,3-Dichloropropene	ND	3.6	ND	0.91	ND	0.91	ND	0.91

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15

Lab No.:	F050702-01		F050702-02		F050702-03		F050702-04	
Client Sample I.D.:	SSV-1 / 92199714001		SSV-2 / 92199714002		SSV-3 / 92199714003		SSV-4 / 92199714004	
Date Sampled:	04/30/14		04/30/14		04/30/14		04/30/14	
Date Analyzed:	05/15/14		05/13/14		05/13/14		05/13/14	
QC Batch No.:	140515MS2A1		140513MS2A1		140513MS2A1		140513MS2A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	0.80		0.20		0.20		0.20	
ANALYTE	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3
1,1,2-Trichloroethane	ND	4.4	ND	1.1	ND	1.1	ND	1.1
Tetrachloroethene	1,300	5.4	1,600 d1	1.4	6.6	1.4	7.2	1.4
2-Hexanone	100	3.3	2.5	0.82	1.9	0.82	2.3	0.82
Dibromochloromethane	ND	6.8	ND	1.7	ND	1.7	ND	1.7
1,2-Dibromoethane	ND	6.1	ND	1.5	ND	1.5	ND	1.5
Chlorobenzene	6.2	3.7	1.1	0.92	ND	0.92	0.96	0.92
Ethylbenzene	7.0	3.5	ND	0.87	ND	0.87	ND	0.87
p,&m-Xylene	28	3.5	2.1	0.87	2.4	0.87	2.0	0.87
o-Xylene	10	3.5	0.95	0.87	1.5	0.87	1.1	0.87
Styrene	3.5	3.4	ND	0.85	ND	0.85	ND	0.85
Bromoform	ND	8.2	ND	2.1	ND	2.1	ND	2.1
1,1,2,2-Tetrachloroethane	ND	11	ND	2.7	ND	2.7	ND	2.7
Benzyl Chloride	ND	4.1	ND	1.0	ND	1.0	ND	1.0
4-Ethyl Toluene	7.5	3.9	ND	0.98	1.6	0.98	1.4	0.98
1,3,5-Trimethylbenzene	ND	7.8	ND	2.0	ND	2.0	ND	2.0
1,2,4-Trimethylbenzene	ND	7.8	ND	2.0	ND	2.0	ND	2.0
1,3-Dichlorobenzene	ND	4.8	ND	1.2	ND	1.2	ND	1.2
1,4-Dichlorobenzene	ND	4.8	ND	1.2	ND	1.2	ND	1.2
1,2-Dichlorobenzene	ND	4.8	ND	1.2	ND	1.2	ND	1.2
1,2,4-Trichlorobenzene	ND	12	ND	3.0	ND	3.0	ND	3.0
Hexachlorobutadiene	ND	8.5	ND	2.1	ND	2.1	ND	2.1

ND = Not Detected (below RL)
RL = Reporting Limit
d = Analyte reported from secondary dilution.
d1 = Analyte reported from secondary dilution. QC Batch #140515MS2A1

Reviewed/Approved By: _____ Date 5/15/14
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15

Lab No.:	F050702-05							
Client Sample I.D.:	TB-043014 / 92199714005							
Date Sampled:	04/30/14							
Date Analyzed:	05/13/14							
QC Batch No.:	140513MS2A1							
Analyst Initials:	VM							
Dilution Factor:	0.20							
ANALYTE	Result ug/m3	RL ug/m3						
Dichlorodifluoromethane (12)	ND	0.99						
Chloromethane	ND	0.83						
1,2-Cl-1,1,2,2-F ethane (114)	ND	1.4						
Vinyl Chloride	ND	0.51						
Bromomethane	ND	0.78						
Chloroethane	ND	0.53						
Trichlorofluoromethane (11)	ND	1.1						
1,1-Dichloroethene	ND	0.79						
Carbon Disulfide	ND	3.1						
1,1,2-Cl 1,2,2-F ethane (113)	ND	1.5						
Acetone	ND	2.4						
Methylene Chloride	ND	0.69						
t-1,2-Dichloroethene	ND	0.79						
1,1-Dichloroethane	ND	0.81						
Vinyl Acetate	ND	3.5						
c-1,2-Dichloroethene	ND	0.79						
2-Butanone	ND	0.59						
t-Butyl Methyl Ether (MTBE)	ND	0.72						
Chloroform	ND	0.98						
1,1,1-Trichloroethane	ND	1.1						
Carbon Tetrachloride	ND	1.3						
Benzene	ND	0.64						
1,2-Dichloroethane	ND	0.81						
Trichloroethene	ND	1.1						
1,2-Dichloropropane	ND	0.92						
Bromodichloromethane	ND	1.3						
c-1,3-Dichloropropene	ND	0.91						
4-Methyl-2-Pentanone	ND	0.82						
Toluene	ND	0.75						
t-1,3-Dichloropropene	ND	0.91						

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Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15

Lab No.:	F050702-05							
Client Sample I.D.:	TB-043014 / 92199714005							
Date Sampled:	04/30/14							
Date Analyzed:	05/13/14							
QC Batch No.:	140513MS2A1							
Analyst Initials:	VM							
Dilution Factor:	0.20							
ANALYTE	Result ug/m3	RL ug/m3						
1,1,2-Trichloroethane	ND	1.1						
Tetrachloroethene	ND	1.4						
2-Hexanone	ND	0.82						
Dibromochloromethane	ND	1.7						
1,2-Dibromoethane	ND	1.5						
Chlorobenzene	ND	0.92						
Ethylbenzene	ND	0.87						
p,&m-Xylene	ND	0.87						
o-Xylene	ND	0.87						
Styrene	ND	0.85						
Bromoform	ND	2.1						
1,1,2,2-Tetrachloroethane	ND	2.7						
Benzyl Chloride	ND	1.0						
4-Ethyl Toluene	ND	0.98						
1,3,5-Trimethylbenzene	ND	2.0						
1,2,4-Trimethylbenzene	ND	2.0						
1,3-Dichlorobenzene	ND	1.2						
1,4-Dichlorobenzene	ND	1.2						
1,2-Dichlorobenzene	ND	1.2						
1,2,4-Trichlorobenzene	ND	3.0						
Hexachlorobutadiene	ND	2.1						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
Operations Manager

Date 5/15/14

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15

Lab No.:	METHOD BLANK		METHOD BLANK		METHOD BLANK			
Client Sample I.D.:	--		--		--			
Date Sampled:	--		--		--			
Date Analyzed:	05/13/14		05/14/14		05/15/14			
QC Batch No.:	140513MS2A1		140514MS2A1		140515MS2A1			
Analyst Initials:	VM		VM		VM			
Dilution Factor:	0.20		0.20		0.20			
ANALYTE	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3		
Dichlorodifluoromethane (12)	ND	0.99	ND	0.99	ND	0.99		
Chloromethane	ND	0.83	ND	0.83	ND	0.83		
1,2-Cl-1,1,2,2-F ethane (114)	ND	1.4	ND	1.4	ND	1.4		
Vinyl Chloride	ND	0.51	ND	0.51	ND	0.51		
Bromomethane	ND	0.78	ND	0.78	ND	0.78		
Chloroethane	ND	0.53	ND	0.53	ND	0.53		
Trichlorofluoromethane (11)	ND	1.1	ND	1.1	ND	1.1		
1,1-Dichloroethene	ND	0.79	ND	0.79	ND	0.79		
Carbon Disulfide	ND	3.1	ND	3.1	ND	3.1		
1,1,2-Cl 1,2,2-F ethane (113)	ND	1.5	ND	1.5	ND	1.5		
Acetone	ND	2.4	ND	2.4	ND	2.4		
Methylene Chloride	ND	0.69	ND	0.69	ND	0.69		
t-1,2-Dichloroethene	ND	0.79	ND	0.79	ND	0.79		
1,1-Dichloroethane	ND	0.81	ND	0.81	ND	0.81		
Vinyl Acetate	ND	3.5	ND	3.5	ND	3.5		
c-1,2-Dichloroethene	ND	0.79	ND	0.79	ND	0.79		
2-Butanone	ND	0.59	ND	0.59	ND	0.59		
t-Butyl Methyl Ether (MTBE)	ND	0.72	ND	0.72	ND	0.72		
Chloroform	ND	0.98	ND	0.98	ND	0.98		
1,1,1-Trichloroethane	ND	1.1	ND	1.1	ND	1.1		
Carbon Tetrachloride	ND	1.3	ND	1.3	ND	1.3		
Benzene	ND	0.64	ND	0.64	ND	0.64		
1,2-Dichloroethane	ND	0.81	ND	0.81	ND	0.81		
Trichloroethene	ND	1.1	ND	1.1	ND	1.1		
1,2-Dichloropropane	ND	0.92	ND	0.92	ND	0.92		
Bromodichloromethane	ND	1.3	ND	1.3	ND	1.3		
c-1,3-Dichloropropene	ND	0.91	ND	0.91	ND	0.91		
4-Methyl-2-Pentanone	ND	0.82	ND	0.82	ND	0.82		
Toluene	ND	0.75	ND	0.75	ND	0.75		
t-1,3-Dichloropropene	ND	0.91	ND	0.91	ND	0.91		

AirTECHNOLOGY Laboratories, Inc.
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Client: Pace Analytical
Attn: Kevin Godwin
Project Name: 31999-5 WIX FILTRATION PLANT
Project No.: 92199714
Date Received: 05/07/14
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15

Lab No.:	METHOD BLANK		METHOD BLANK		METHOD BLANK			
Client Sample I.D.:	--		--		--			
Date Sampled:	--		--		--			
Date Analyzed:	05/13/14		05/14/14		05/15/14			
QC Batch No.:	140513MS2A1		140514MS2A1		140515MS2A1			
Analyst Initials:	VM		VM		VM			
Dilution Factor:	0.20		0.20		0.20			
ANALYTE	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3		
1,1,2-Trichloroethane	ND	1.1	ND	1.1	ND	1.1		
Tetrachloroethene	ND	1.4	ND	1.4	ND	1.4		
2-Hexanone	ND	0.82	ND	0.82	ND	0.82		
Dibromochloromethane	ND	1.7	ND	1.7	ND	1.7		
1,2-Dibromoethane	ND	1.5	ND	1.5	ND	1.5		
Chlorobenzene	ND	0.92	ND	0.92	ND	0.92		
Ethylbenzene	ND	0.87	ND	0.87	ND	0.87		
p,&m-Xylene	ND	0.87	ND	0.87	ND	0.87		
o-Xylene	ND	0.87	ND	0.87	ND	0.87		
Styrene	ND	0.85	ND	0.85	ND	0.85		
Bromoform	ND	2.1	ND	2.1	ND	2.1		
1,1,2,2-Tetrachloroethane	ND	2.7	ND	2.7	ND	2.7		
Benzyl Chloride	ND	1.0	ND	1.0	ND	1.0		
4-Ethyl Toluene	ND	0.98	ND	0.98	ND	0.98		
1,3,5-Trimethylbenzene	ND	2.0	ND	2.0	ND	2.0		
1,2,4-Trimethylbenzene	ND	2.0	ND	2.0	ND	2.0		
1,3-Dichlorobenzene	ND	1.2	ND	1.2	ND	1.2		
1,4-Dichlorobenzene	ND	1.2	ND	1.2	ND	1.2		
1,2-Dichlorobenzene	ND	1.2	ND	1.2	ND	1.2		
1,2,4-Trichlorobenzene	ND	3.0	ND	3.0	ND	3.0		
Hexachlorobutadiene	ND	2.1	ND	2.1	ND	2.1		

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 5/15/14
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 140513MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date Analyzed:	05/13/14		05/13/14		05/13/14						
Data File ID:	13MAY011.D		13MAY007.D		13MAY008.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	9.3	93	9.0	90	3.4	70	130	30	Pass
Methylene Chloride	0.0	10.0	9.2	92	9.3	93	1.4	70	130	30	Pass
Trichloroethene	0.0	10.0	9.0	90	9.4	94	4.4	70	130	30	Pass
Toluene	0.0	10.0	8.9	89	9.2	92	3.5	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	9.9	99	10.1	101	1.8	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 5/15/14

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 140514MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date Analyzed:	05/14/14		05/14/14		05/14/14						
Data File ID:	14MAY006.D		14MAY003.D		14MAY004.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	9.4	94	9.6	96	1.3	70	130	30	Pass
Methylene Chloride	0.0	10.0	9.6	96	9.3	93	3.5	70	130	30	Pass
Trichloroethene	0.0	10.0	9.4	94	9.5	95	1.2	70	130	30	Pass
Toluene	0.1	10.0	9.4	93	9.2	91	2.1	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	9.9	99	10.0	100	1.4	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: Mark Johnson Date: 5/15/14

Operations Manager

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 140515MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date Analyzed:	05/15/14		05/15/14		05/15/14						
Data File ID:	15MAY005.D		15MAY003.D		15MAY004.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	9.7	97	9.5	95	2.2	70	130	30	Pass
Methylene Chloride	0.0	10.0	9.9	99	9.7	97	2.4	70	130	30	Pass
Trichloroethene	0.0	10.0	9.6	96	9.3	93	3.8	70	130	30	Pass
Toluene	0.0	10.0	9.4	94	9.2	92	2.3	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	10.2	102	10.5	105	2.9	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 5/15/14

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

GC/MS Raw Data Index
General Information

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Conventions and Conversions

1 ppbv = 0.001 ppmv = 0.0000001% v/v
1% v/v = 10,000 ppmv = 10,000,000 ppbv

1 ug/m^3 = 1 ng/L = ppbv x MW/24.45
1 ug/L = 1 mg/m^3 = ppmv x MW/24.45

Where **MW** is the molecular weight of the compound and 24.45 is the molar volume of ideal gas at 1 atmosphere and 25° C.

1 atmosphere = 14.6 psia = 0 psig
30" Hg = 0 psia = -14.6 psig

Standard pressure is taken as 14.6 psia at Air Technology Labs' facility.

1. Supporting Documents

a. Pressurization log (if applicable)

b. ICAL run log

c. CCAL/QC/Samples run log

d. Miscellaneous documents

PRESSURIZATION LOGBOOK

	Date	Sample ID	Can #	Initial Pressure	Final Pressure	Dilution Gas	Dilution Gas Lot #	Initials	ETR #	Comments	
1	5/7/14	F050606-13	6136	5" Hg	10 psig	N_2	1335413A50	ED	6512	EEC	
2	↓	↓ -14	3126	5" Hg	↓	↓	↓	↓	↓	↓	
3	5/7/14	F050607-01	5965	5.5" Hg	5 psig	N_2	06660288	ED	6293	SCS	
4	↓	↓ -02	4425	3.5" Hg	↓	↓	↓	↓	↓	↓	
5	↓	↓ -03	2415	3.5" Hg	↓	↓	↓	↓	↓	↓	
6	↓	↓ -04	2875	2.5" Hg	↓	↓	↓	↓	↓	↓	
7	5/7/14	F050703-01	5980	3.5 psig	10 psig	He	036212	ED	6502	Blanchard	
8	5/7/14	F050705-01	5474	9.5" Hg	10 psig	He	036212	ED	6489	Weaver Boos	He
9	↓	↓ -02	3601	10" Hg	↓	↓	↓	↓	↓	↓	↓
10	↓	↓ -03	5478	10" Hg	↓	↓	↓	↓	↓	↓	↓
11	↓	↓ -04	1452	10" Hg	↓	↓	↓	↓	↓	↓	↓
12	5/7/14	F050706-01	1290	2" Hg	10 psig	He	036212	ED	6522	cornerstone	He
13	↓	↓ -02	5979	4.5" Hg	↓	↓	↓	↓	↓	↓	↓
14	↓	↓ -03	5964	3" Hg	↓	↓	↓	↓	↓	↓	↓
15	5/7/14	F050702-01	5471	17" Hg	5 psig	N_2	1335413A50	ED	6526	PACE	
16	↓	↓ -02	3097	1" Hg	↓	↓	↓	↓	↓	↓	
17	↓	↓ -03	3106	4" Hg	↓	↓	↓	↓	↓	↓	
18	↓	↓ -04	1343	4" Hg	↓	↓	↓	↓	↓	↓	
19	↓	↓ -05	1404	~~29.5" Hg~~ 29.5" Hg	↓	↓	↓	↓	↓	↓	ED 5/7/14
20											
21											
22											
23											
24											
25											

Approved by/Date:_____ Air Technology Laboratories Inc. Logbook #11

GCMS Injection Logbook

Instrument ID: GCMS2
Analytical Method: TO1403 31 / TO1404 24
Datafile Directory: 140421

Chemist: DJ
Blank Lot #: 1334713A50
IS/Surr Standard Code: AW1200407

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	4/24/14	13:47	24APR001	BFB	AW1200404	50	—	—	1.0	—	OK	EM 1447 → 1471	140424MS2A
2		14:33	002	CCV	AW1200814	50					NO		
3		15:35 15:01 4/24/14	003	1.0 ppbv ICAL	AW1200812	50					OK		
4		16:59	004	1.0		↓					NO		
5		16:59	005	2.5		125					OK		
6		17:40	006	5.0	↓	250					OK		
7		18:22	007	7.0	AW1200814	25					OK		
8		19:02	008	10		50					OK		
9		19:44	009	25	↓	125					OK		
10	↓	20:28	010	100	AW1200415	50					OK		
11	4/25/14	07:50	011	250		125					OK	LN_2 out	
12		08:45	012	250		↓					NO		
13		09:24	013	100		50					NO		
14		10:05	014	250	↓	125					NO	wrong line	
15	↓	~~11:30~~ 10:49	015	200	↓	↓	↓	↓	↓		NO		↓
16		~~12:24~~											
17													
18												DJ 4/25/14	
19													
20													

Approved by/Date:
Logbook #28

Air Technology Laboratories

GCMS Injection Logbook

Instrument ID: GCMS2
Analytical Method: SL140323A
Datafile Directory: 140512

Chemist: K
Blank Lot #: 0660288
IS/Surr Standard Code: AW12 00820

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	5/12/14	0834	12 MAY 001	fin ccv	AW120101	125	—	—	1.0	2	NO	Reprocessed ←	140512MS2A1
2		0928	002	ccv						2	OK	EM 1459 → 1578	
3		1314	003	Lcs	AW120103					2	OK		
4		1418	004	LCSD						2	OK		
5		1515	005	Method blank	—	250				1	Okay		
6		1648	6	F050607-01	SCS	411	14.6/11.92	—	1.0	2	Okay		
7		1732	7	02		380	14.6/12.9			3	Okay		
8		1937	8	03		380	14.6/12.9			5	?	rerun, Tekman crashed	
9		2020	9	04		366	14.6/13.38			6	Okay		
10		2103	10	F050805-01	Pace	395	14.6/14.41			7	Okay		
11		2147	11	02	Pace	387	14.6/12.65			8	Okay		
12		2232	12	F050607-03	SCS	380	14.6/12.9			5	Okay		
13	5/13/14	0729	13MAY001	BFB	AW100820	150	—	—	—	—	Okay		140513MS2A1
14		0839	002	CCV	AW120814	50			1.0	B	NO	Low Hexachlorobutadiene	
15		0951	3	LCS	AW120113					C			
16		1031	4	LCSD						C			
17		1121	5	TPH gas Std	AW120121	50				11	Okay		
18		1232	6	CCV	AW120123	50				B	Okay	124-TCB high narrative	
19		1324	7	LCS	AW120122					C	Okay		
20		1403	8	LCSD						C	Okay		

Approved by/Date:
Logbook #28

Air Technology Laboratories

Instrument ID: GCMS2

Analytical Method: TO14 0424

Datafile Directory: 140512

GCMS Injection Logbook

Chemist: K

Blank Lot #: 060288

IS/Surr Standard Code: AC1200820

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	5/13/14	1443	13MAY009	100 ppb EtOH CCV	AW120815	50	—	—	1.0	15	OK		140513MS2A1
2		1527	10	M. Blank	—	250			0.2	1	NOK	canister empty	
3		1647	11	↓	—	250			↓	1	OK		
4		1727	12	F050707-01	Yorke	50	24.6/12.17	—	2.022	2	OK		
5		1807	13	-02		50	24.6/11.44		2.151	3	OK		
6		1847	14	-03		↓	↓		2.151	2	OK		
7		1928	15	-04		50	24.6/12.17		2.022	3	OK		
8		2019	16	F050702-01	Pace	774	19.6/6.33		0.2	5	O/R	acetone PCE	
9		2104	17	-02		347	19.6/14.11		0.2	6	O/R	PCE	
10		2147	18	-03		387	19.6/12.05		0.2	7	O/R	CS_2	
11		2231	19	-04		387	↓		0.2	8	OK		
12		2312	20	-05		250	—		0.2	9	OK		
13	5/14/14	0005	21	F043003-01	Parsons	700	24.6/13.87 19.6/11.9	24.6/9.73	0.56	10	OK	Backup data	~~140514MS2A1~~ K 5/14/14
14		0050	22	-02		350	24.6/13.38	19.6/14.6	0.352	11	OK		
15		0134	23	-020		350	↓	↓	0.352	11	OK		
16		0225	24	-03		700	24.6/13.63	19.6/10.71	0.236	12	OK		
17		0314	25	-04		600	24.6/13.63	19.6/9.73	0.303	13	OK		
18		0402	26	-05		↓	↓	↓	↓	14	OK		
19		0456	27	-06		700	24.6/13.63	19.6/10.55 19.6/10.71	0.423	15	OK		
20		0543	28	-07		400	24.6/13.38	—	0.2	1	OK		

Approved by/Date:_____

Logbook #28

Air Technology Laboratories

GCMS Injection Logbook

Instrument ID: GCMS2
Analytical Method: T0140424
Datafile Directory: 140512

Chemist: [illegible]
Blank Lot #: 0660288
IS/Surr Standard Code: AW120820

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	5/14/14	0623	13MAY029	F057305-02	Cadmo	50	—	—	1	4	Ok		140513MS2A1
2		0703	30	-01		50	—	1000/20	50	16	Ok		
3		0743	31	F050702-01	Pace	194	14.6/6.33	—	0.798	5	Ok		
4	5/14/14	0839	14MAY001	BPB	AW120820	150	—	—	—	4	Ok		140514MS2A1
5		0931	2	CCV	AW120213	50			1.0	B	Ok		
6		1020	3	LCS	AW120212					9	Ok		
7		1105	4	LCSD						C	Ok		
8		1145	5	TMB CCV 4.17	AW120213	50				16	Ok		
9		1251	6	M. Blk	—	250			0.2	2	Ok		
10		1332	7	F050201-01	ATL-LV	50	24.6/12.9		1.907	1	NOk	over scale	
11		1413	8	-02			24.6/13.14	1000/10	187.2	3	Ok		
12		1452	9	-01			24.6/12.9	—	1.907	5	Ok		
13		1533	10	-03			24.6/10.22	1000/20	120.35	4	Ok		
14		1615	11	-04			24.6/11.92		103.15	3	Ok		
15		1657	12	F050501-01	OCA	50	24.6/13.63	—	1.805	6	Ok		
16		1739	13	-02				—	1.805	7	Ok		
17		1820	14	F051403-03	Cadmo	50	—	1000/20	50	8	Ok		
18		1901	15	-04						9	Ok		
19		1942	16	-01				—	1.0	8	Ok		
20		2022	17	-02					1.0	9	Ok		

Approved by/Date:_____
Logbook #28

Air Technology Laboratories

GCMS Injection Logbook

Instrument ID: GCMS2
Analytical Method: To140424
Datafile Directory: 14051R

Chemist: K
Blank Lot #: 0660288
IS/Surr Standard Code: AW120082O

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	5/14/14	0623	13MAY029	F057305-02	Cardno	50	—	—	1	4	Okay		140513MS2A1
2		0703	30	-01		50	—	1000/20	50	16	Okay		
3		0743	31	F050702-01	Pace	144	14.6/6.33	—	0.798	5	Okay		
4	5/14/14	0839	14MAY001	BZB	AW120082O	150	—	—	—	+	Okay		140514MS2A1
5		0931	2	CCV	AW120123	50			1.0	B	Okay		
6		1020	3	LCS	AW120212					C	Okay		
7		1105	4	LCSD						C	Okay		
8		1145	5	TPH CCV 6.17	AW120123	50				16	Okay		
9		1251	6	m. Blk	—	25V			0.2	2	Okay		
10		1332	7	F050201-01	ATL-LV	50	24.6/12.9		1.907	1	NOK	over scale	
11		1413	8	-02			24.6/13.14	1000/10	187.2	3	Okay		
12		1452	9	-01			24.6/12.9	—	1.907	5	Okay		
13		1533	10	-03			24.6/10.22	1000/20	120.35	4	Okay		
14		1615	11	-04			24.6/11.92		103.15	3	Okay		
15		1657	12	F050501-01	OCA	50	24.6/13.63	—	1.805	6	Okay		
16		1739	13	-02				—	1.805	7	Okay		
17		1820	14	F051403-03	Cardno	50	—	1000/20	50	8	Okay		
18		1901	15	-04						9	Okay		
19		1942	16	-01				—	1.0	8	Okay		
20		2022	17	-02					1.0	9	Okay		

Approved by/Date:_____
Logbook #28

Air Technology Laboratories

GCMS Injection Logbook

Instrument ID: GCMS2
Analytical Method: TO14O424
Datafile Directory: 140512

Chemist: h
Blank Lot #: 0660288
IS/Surr Standard Code: AW1200820

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	5/14/14	2137	14MAY018	F050605-01	EEC	35	24.6/11.92	—	2.947	1	O/R	PCE	140514MS2A1
2		2214	19	-02		50	24.6/11.92	—	2.063	2	Okn		
3		2250	20	-03			24.6/11.68	—	2.106	3	Okn		
		2326	21	-01			24.6/11.92	280/80	7.2205	1	Okn		
5	5/15/14	0002	22	F050702-01	Pace	50	19.6/6.33	1000/100	38.88	4	Okn		
6		0040	23	-02		90	19.6/14.11	—	0.7717	5	O/R	PCE	
7		0117	24	-03		300	19.6/12.15	—	0.258	6	Okn	underrange?	
8		0153	25	F051303-01	Asset	35	—		1.42857	7	Okn	confirm MTBE	
9		0230	26	-02			—			8	Okn		
10		0306	27	F051304-01			—			9	Okn		
11	5/15/14	0654	15MAY001	BFB									
12		0732	2	CCV									
13		0808	3	LCS									
14		0845	4	LCSD									
15		0932	5	M. Blank									
16		1008	6	F050702-02	Pace								
17													
18													
19													
20													

Approved by/Date:_____
Logbook #28

Air Technology Laboratories

GCMS Injection Logbook

Instrument ID: GCMS2
Analytical Method: TO140424
Datafile Directory: 140512

Chemist: h
Blank Lot #: 0660288
IS/Surr Standard Code: AW1200820

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	5/14/14	2137	14MAY018	F050605-01	EEC	35	24.6/11.92	—	2.947	1	O/R	PCE	140514MS2A1
2		2214	19	-02		50	24.6/11.92	—	2.063	2	Okn		
3		2250	20	-03			24.6/11.68	—	2.106	3	Okn		
		2326	21	-01			24.6/11.92	280/80	7.2205	1	Okn		
4	5/15/14	0002	22	F050702-01	Pace	50	19.6/6.33	1000/100	38.88	4	Okn		
5		0040	23	-02		90	19.6/14.11	—	0.7717	5	O/R	PCE	
6		0117	24	-03		300	19.6/12.15	—	0.258	6	Okn	underrange?	
7		0153	25	F051303-01	Asset	35	—		1.42857	7	Okn	confirm MTBE	
8		0230	26	-02			—			8	Okn		
9		0306	27	F051304-01			—			9	Okn		
10	5/15/14	0654	15MAY001	BFB	AW1200820	150	—	—	—	—			140515MS2A1
11		0732	002	CCV	AW120213	50			1.0	B			
12		0808	003	LCS	AW120212					C			
13		0845	004	LCSD						C			
14		0932	005	M. Blank	—	250			0.2				
15		1008	006	F050702-02	Pace	50	19.6/14.11		1.389	5			
16		1106	007	-03		300	19.6/12.55	—	0.258	6	~~Okn~~ O/R	CSn	
17			8	-03		150		—				h 5/15/14	
18													
19			009	New BTEXM Cylinder		50	—	—	1.0	11	Okn		
20			009	F050702-03	Pace	150	19.6/12.05	—	0.516	6	Okn		

Approved by/Date:_____
Logbook #28

Air Technology Laboratories

2. Sample Raw Data

a. Results/Chromatograms/Spectra

GC/MS QA-QC Check Report

Tune File : C:\msdchem\1\data\140512\13MAY001.D
Tune Time : 13 May 2014 7:29 am

Daily Calibration File : C:\msdchem\1\data\140512\13MAY006.D

File	Sample	Surrogate Recovery %			Internal Standard Responses		
					40109	183020	127646
13MAY007.D							
	LCS	90	96	107	37932	177491	121464
13MAY008.D							
	LCSD	93	99	103	38627	174739	122720
13MAY011.D							
	METHOD BLA	89	96	96	38072	175673	124385
13MAY017.D							
	F050702-02	91	102	103	33307	165586	115501
13MAY018.D							
	F050702-03	90	100	105	36028	172786	122796
13MAY019.D							
	F050702-04	89	101	102	35599	172836	123173
13MAY020.D							
	F050702-05	91	102	105	38484	170731	126103

(fails) - fails 24hr time check * - fails criteria

Created: Thu May 15 16:55:23 2014 ms2

GC/MS QA-QC Check Report

Tune File : C:\msdchem\1\data\140512\14MAY001.D
Tune Time : 14 May 2014 8:39 am

Daily Calibration File : C:\msdchem\1\data\140512\14MAY002.D

File	Sample	Surrogate Recovery %			Internal Standard Responses		
					37960	177193	122775
14MAY003.D							
	LCS	91	98	103	36307	168014	120424
14MAY004.D							
	LCSD	91	97	104	35903	170133	119059
14MAY006.D							
	METHOD BLA	88	101	104	37441	172421	122796
14MAY022.D							
	F050702-01	87	99	107	35570	164997	118252
14MAY023.D							
	F050702-02	88	98	110	33918	164173	117919
14MAY024.D							
	F050702-03	89	100	104	34275	164062	119937

(fails) - fails 24hr time check * - fails criteria

Created: Thu May 15 15:06:49 2014 ms2

GC/MS QA-QC Check Report

Tune File : C:\msdchem\1\data\140512\15MAY001.D
Tune Time : 15 May 2014 6:54 am

Daily Calibration File : C:\msdchem\1\data\140512\15MAY002.D

File	Sample	Surrogate Recovery %			Internal Standard Responses		
					37924	172089	120697
15MAY003.D							
	LCS	92	98	105	35204	165101	116952
15MAY004.D							
	LCSD	91	97	106	35786	165616	113334
15MAY005.D							
	Method Bla	89	95	99	34142	161651	113993
15MAY006.D							
	F050702-02	90	99	102	33615	162380	118776
15MAY007.D							
	F050702-03	89	98	99	36870	171755	116815
15MAY009.D							
	F050702-03	91	102	107	35976	170250	121474
15MAY013.D							
	F050702-01	86	102	105	34846	164946	114992

(fails) - fails 24hr time check * - fails criteria

Created: Thu May 15 16:56:34 2014 ms2

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY022.D
Acq On : 15 May 2014 12:02 am
Operator : VM
Sample : F050702-01 PACE
Misc : 50ML, 19.6/6.33, 1000/100
ALS Vial : 4 Sample Multiplier: 38.88

Quant Time: May 15 00:27:02 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

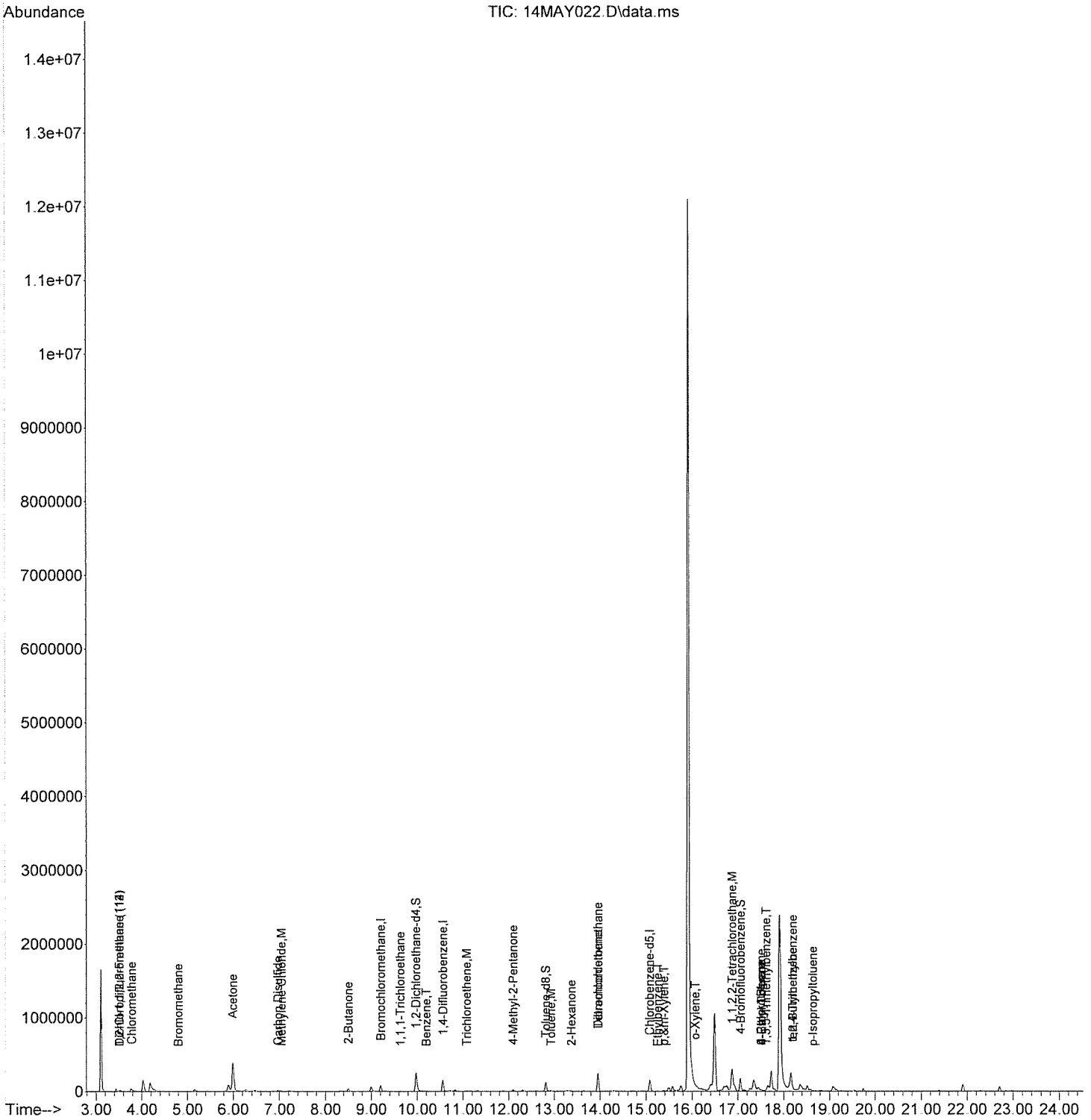
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.204	130	35570	10.00	ppbv	0.01
24) 1,4-Difluorobenzene	10.561	114	164997	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	118252	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.970	65	64277	8.74	ppbv	0.01
Spiked Amount 10.000	Range 70 - 130		Recovery	=	87.40%	
34) Toluene-d8	12.808	98	109897	9.93	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery	=	99.30%	
53) 4-Bromofluorobenzene	17.059	174	65200	10.68	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery	=	106.80%	
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.509	85	950	0.04	ppbv	48
3) Chloromethane	3.776	50	189	0.03	ppbv #	44
4) 1,2-Cl-1,1,2,2-F ethan...	3.509	85	950	0.04	ppbv #	31
6) Bromomethane	4.797	94	411	0.14	ppbv #	10
10) Carbon Disulfide	6.970	76	22961	1.26	ppbv	96
12) Acetone	5.992	43	773211	49.09	ppbv	90
13) Methylene Chloride	7.050	84	2052	0.36	ppbv #	1
18) 2-Butanone	8.501	72	12050	3.78	ppbv #	69
21) 1,1,1-Trichloroethane	9.634	97	1273	0.07	ppbv	71
25) Benzene	10.194	78	3959	0.17	ppbv	64
28) Trichloroethene	11.078	130	3445	0.30	ppbv #	65
33) 4-Methyl-2-Pentanone	12.098	43	22066	1.12	ppbv	88
35) Toluene	12.926	91	14927	0.59	ppbv	93
40) Tetrachloroethene	13.953	166	97503	7.07	ppbv	96
41) 2-Hexanone	13.374	58	3820	0.47	ppbv	85
42) Dibromochloromethane	13.953	129	74718	4.85	ppbv #	1
46) Ethylbenzene	15.248	91	2688	0.09	ppbv	45
47) p,&m-Xylene	15.385	91	13136	0.49	ppbv	97
48) o-Xylene	16.063	91	7350	0.25	ppbv	95
52) 1,1,2,2-Tetrachloroethane	16.873	83	4064	0.24	ppbv #	1
56) n-Propyl Benzene	17.507	91	434	0.01	ppbv	92
58) 4-Ethyl Toluene	17.520	105	12532	0.37	ppbv	77
59) 1,3,5-Trimethylbenzene	17.613	105	4282	0.12	ppbv	81
60) 2-Chlorotoluene	17.507	91	434	0.01	ppbv #	51
61) 4-Chlorotoluene	17.507	91	434	0.02	ppbv #	49
62) tert-Butylbenzene	18.198	119	942	0.03	ppbv #	88
63) 1,2,4-Trimethylbenzene	18.198	105	12183	0.38	ppbv	93
65) p-Isopropyltoluene	18.640	119	964	0.03	ppbv #	49

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY022.D
Acq On : 15 May 2014 12:02 am
Operator : VM
Sample : F050702-01 PACE
Misc : 50ML, 19.6/6.33, 1000/100
ALS Vial : 4 Sample Multiplier: 38.88

Quant Time: May 15 00:27:02 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY013.D
Acq On : 15 May 2014 4:12 pm
Operator : VM
Sample : F050702-01 PACE
Misc : 194ML, 19.6/6.73
ALS Vial : 5 Sample Multiplier: 0.798

Quant Time: May 15 16:36:37 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.223	130	34846	10.00	ppbv	0.03
24) 1,4-Difluorobenzene	10.574	114	164946	10.00	ppbv	0.02
36) Chlorobenzene-d5	15.080	117	114992	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.982	65	63562	8.64	ppbv	0.03
Spiked Amount 10.000	Range 70 - 130		Recovery = 86.40%			
34) Toluene-d8	12.814	98	112350	10.16	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.60%			
53) 4-Bromofluorobenzene	17.059	174	62394	10.51	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.10%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.472	85	13838	0.59	ppbv	92
3) Chloromethane	3.833	50	10682	1.79	ppbv	69
5) Vinyl Chloride	4.069	62	2654	0.48	ppbv	65
6) Bromomethane	4.766	94	1453	0.49	ppbv	63
8) Trichlorofluoromethane...	5.370	101	4672	0.18	ppbv	89
9) 1,1-Dichloroethene	6.273	61	5337	0.42	ppbv #	1
10) Carbon Disulfide	6.945	76	826214	46.25	ppbv	99
11) 1,1,2-Cl 1,2,2-F ethan...	6.092	151	257	0.02	ppbv #	26
12) Acetone	6.024	43	26361435	1708.36	ppbv	90
13) Methylene Chloride	6.963	84	63122	11.26	ppbv #	1
14) t-1,2-Dichloroethene	7.418	96	1452	0.22	ppbv #	42
15) 1,1-Dichloroethane	7.966	63	34753	2.57	ppbv	97
16) Vinyl Acetate	7.766	43	58320	2.16	ppbv	69
17) c-1,2-Dichloroethene	8.806	96	4797	0.64	ppbv	97
18) 2-Butanone	8.501	72	559018	179.15	ppbv #	43
19) t-Butyl Methyl Ether	7.256	73	11268	0.59	ppbv	1
20) Chloroform	9.042	83	1642	0.10	ppbv #	27
21) 1,1,1-Trichloroethane	9.646	97	112169	6.10	ppbv	96
22) 1,1-Dichloropropene	10.007	75	3763	0.36	ppbv #	1
25) Benzene	10.206	78	70911	3.05	ppbv	91
28) Trichloroethene	11.096	130	168775	14.89	ppbv	86
33) 4-Methyl-2-Pentanone	12.099	43	800307	40.76	ppbv	88
35) Toluene	12.933	91	332795	13.25	ppbv	97
37) t-1,3-Dichloropropene	12.926	75	6836	0.81	ppbv #	1
38) 1,1,2-Trichloroethane	13.412	97	5954	0.62	ppbv #	26
40) Tetrachloroethene	13.960	166	3243532	241.73	ppbv	97
41) 2-Hexanone	13.368	58	242844	30.51	ppbv	88
42) Dibromochloromethane	13.953	129	2522486	168.45	ppbv #	1
44) Chlorobenzene	15.117	112	32450	1.69	ppbv #	50
46) Ethylbenzene	15.248	91	61483	2.03	ppbv	99
47) p,&m-Xylene	15.379	91	205812	7.96	ppbv	94
48) o-Xylene	16.063	91	83098	2.90	ppbv	96
49) Styrene	16.082	104	16929	1.04	ppbv	91
51) Isopropyl benzene	16.686	105	11485	0.29	ppbv #	2
52) 1,1,2,2-Tetrachloroethane	16.879	83	220336	13.18	ppbv #	1
54) Benzyl Chloride	19.070	91	3008	0.30	ppbv	65
55) 1,2,3-Trichloropropane	17.134	110	15758	2.15	ppbv #	1

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY013.D
Acq On : 15 May 2014 4:12 pm
Operator : VM
Sample : F050702-01 PACE
Misc : 194ML, 19.6/6.73
ALS Vial : 5 Sample Multiplier: 0.798

Quant Time: May 15 16:36:37 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

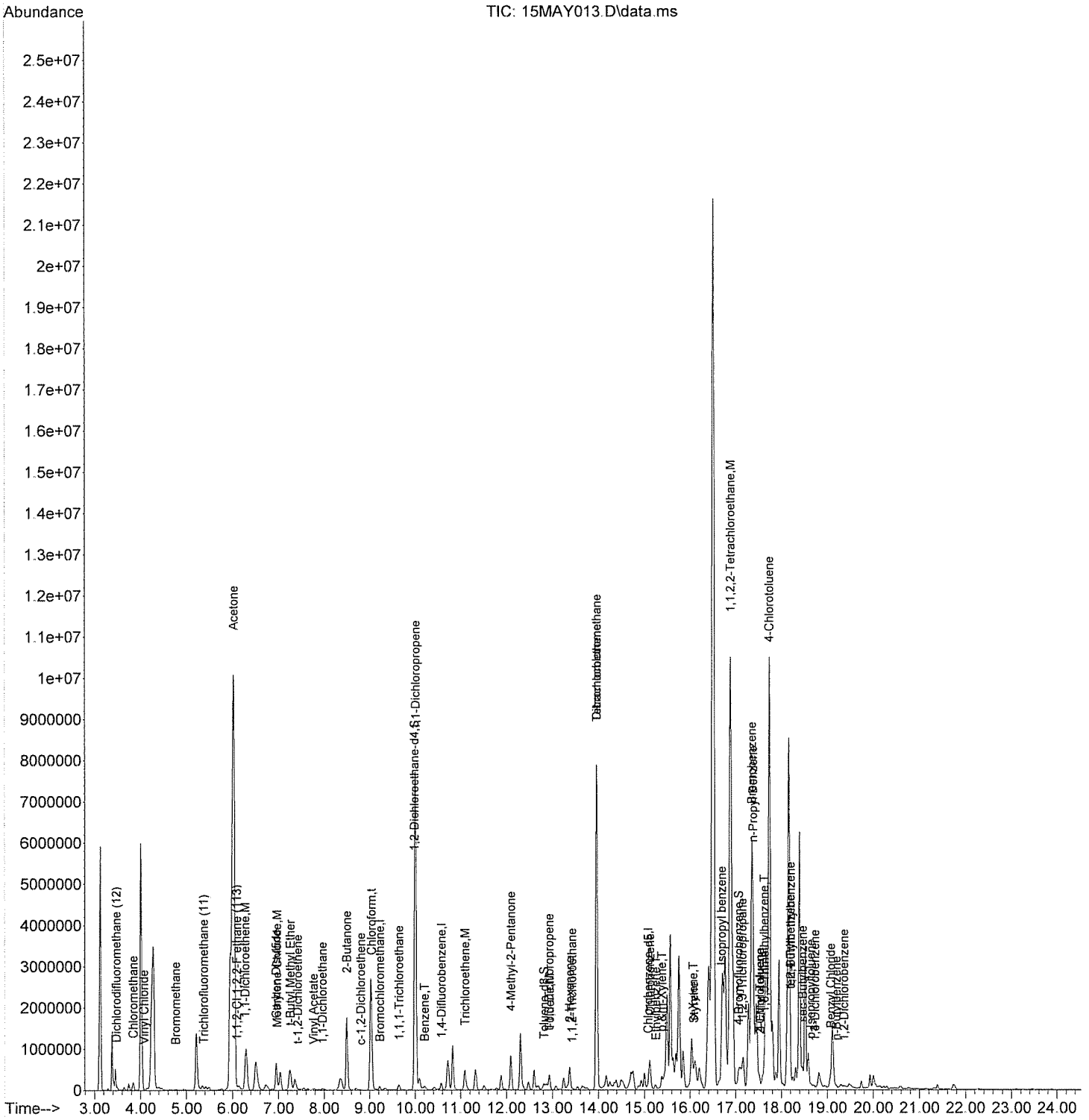
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
56) n-Propyl Benzene	17.371	91	30471	0.73 ppbv	81
57) Bromobenzene	17.346	77	41367	2.33 ppbv #	57
58) 4-Ethyl Toluene	17.520	105	63772	1.91 ppbv	95
59) 1,3,5-Trimethylbenzene	17.620	105	20790	0.62 ppbv	92
60) 2-Chlorotoluene	17.526	91	8732	0.26 ppbv #	51
61) 4-Chlorotoluene	17.725	91	21101	0.82 ppbv #	49
62) tert-Butylbenzene	18.198	119	6021	0.18 ppbv #	70
63) 1,2,4-Trimethylbenzene	18.198	105	53094	1.69 ppbv	92
64) sec-Butylbenzene	18.460	105	3059	0.07 ppbv	69
65) p-Isopropyltoluene	18.640	119	20710	0.56 ppbv	95
66) 1,3-Dichlorobenzene	18.727	146	4068	0.24 ppbv	78
67) 1,4-Dichlorobenzene	18.727	146	4068	0.25 ppbv	84
68) n-Butylbenzene	19.188	91	8916	0.30 ppbv #	90
69) 1,2-Dichlorobenzene	19.356	146	1661	0.10 ppbv	75

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY013.D
Acq On : 15 May 2014 4:12 pm
Operator : VM
Sample : F050702-01 PACE
Misc : 194ML, 19.6/6.73
ALS Vial : 5 Sample Multiplier: 0.798

Quant Time: May 15 16:36:37 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 15MAY006.D
Acq On : 15 May 2014 10:08 am
Operator : MJ
Sample : F050702-02 PACE
Misc : 50 ML, 19.6/14.11
ALS Vial : 5 Sample Multiplier: 1.389

Quant Time: May 15 10:33:13 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

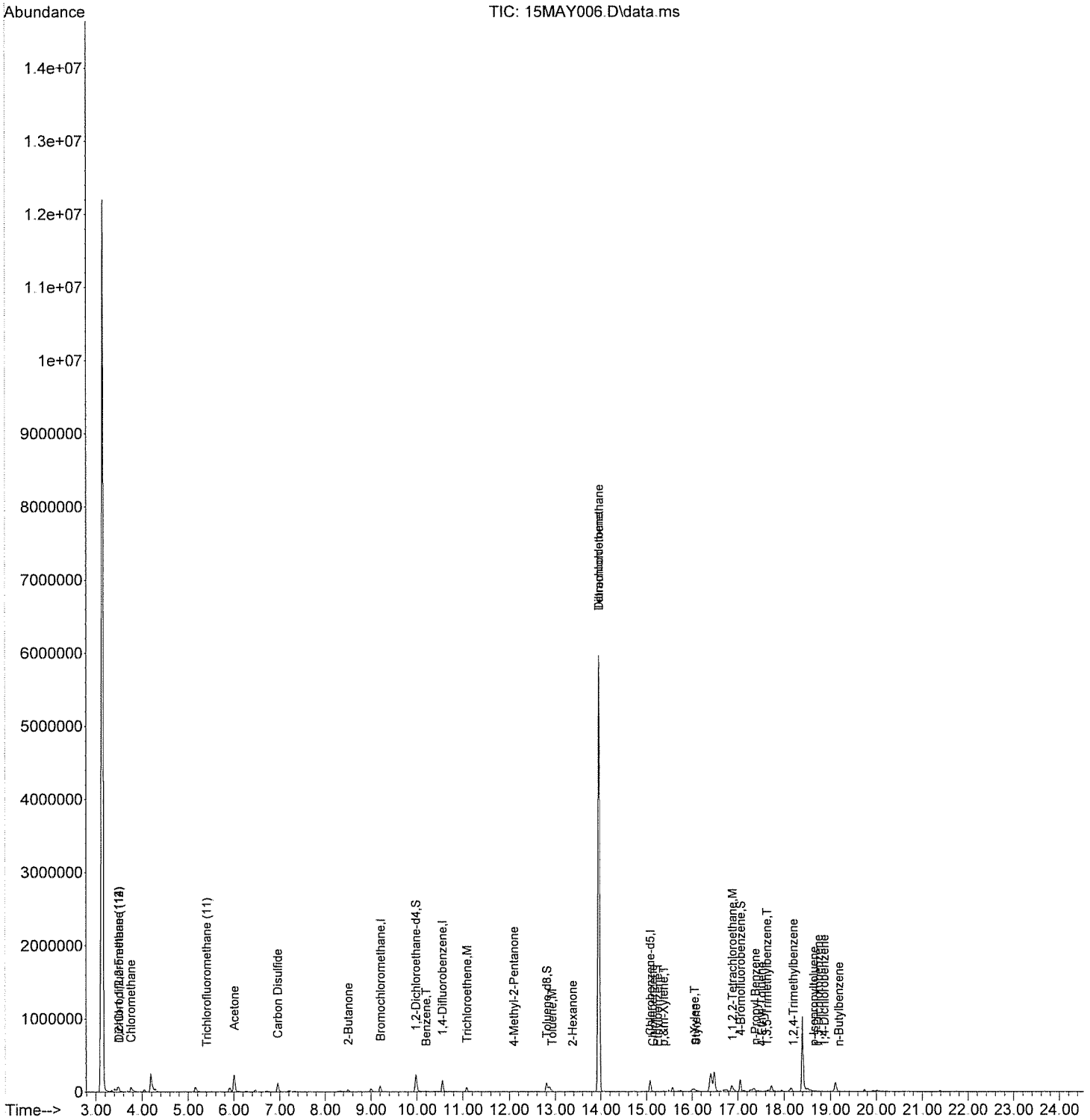
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.204	130	33615	10.00	ppbv	0.01
24) 1,4-Difluorobenzene	10.555	114	162380	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	118776	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.970	65	65269	9.02	ppbv	0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 90.20%			
34) Toluene-d8	12.808	98	107594	9.88	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.80%			
53) 4-Bromofluorobenzene	17.059	174	62784	10.24	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.496	85	10930	0.49	ppbv	98
3) Chloromethane	3.758	50	2320	0.40	ppbv #	44
4) 1,2-Cl-1,1,2,2-F ethan...	3.496	85	10930	0.53	ppbv #	52
8) Trichlorofluoromethane...	5.401	101	2916	0.12	ppbv	89
10) Carbon Disulfide	6.957	76	214848	12.47	ppbv	99
12) Acetone	6.011	43	436090	29.30	ppbv	90
18) 2-Butanone	8.501	72	8831	2.93	ppbv #	57
25) Benzene	10.194	78	8898	0.39	ppbv	95
28) Trichloroethene	11.084	130	24739	2.22	ppbv	79
33) 4-Methyl-2-Pentanone	12.099	43	6831	0.35	ppbv	77
35) Toluene	12.926	91	15951	0.65	ppbv	98
40) Tetrachloroethene	13.953	166	2371655	171.12	ppbv	95
41) 2-Hexanone	13.375	58	2317	0.28	ppbv	47
42) Dibromochloromethane	13.953	129	1863021	120.45	ppbv #	1
44) Chlorobenzene	15.136	112	3500	0.18	ppbv	72
46) Ethylbenzene	15.242	91	3465	0.11	ppbv	45
47) p,&m-Xylene	15.373	91	9542	0.36	ppbv	93
48) o-Xylene	16.051	91	4675	0.16	ppbv	91
49) Styrene	16.082	104	790	0.05	ppbv	61
52) 1,1,2,2-Tetrachloroethane	16.879	83	255	0.01	ppbv	85
56) n-Propyl Benzene	17.377	91	1798	0.04	ppbv #	53
58) 4-Ethyl Toluene	17.514	105	4220	0.12	ppbv	52
59) 1,3,5-Trimethylbenzene	17.626	105	528	0.02	ppbv	39
63) 1,2,4-Trimethylbenzene	18.198	105	3853	0.12	ppbv	84
65) p-Isopropyltoluene	18.647	119	1664	0.04	ppbv #	49
66) 1,3-Dichlorobenzene	18.740	146	188	0.01	ppbv #	24
67) 1,4-Dichlorobenzene	18.864	146	726	0.04	ppbv #	27
68) n-Butylbenzene	19.182	91	685	0.02	ppbv #	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 15MAY006.D
Acq On : 15 May 2014 10:08 am
Operator : MJ
Sample : F050702-02 PACE
Misc : 50 ML, 19.6/14.11
ALS Vial : 5 Sample Multiplier: 1.389

Quant Time: May 15 10:33:13 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY017.D
Acq On : 13 May 2014 9:04 pm
Operator : vm
Sample : F050702-02 PACE
Misc : 347ML, 19.6/14.11
ALS Vial : 6 Sample Multiplier: 0.2

Quant Time: May 13 21:29:24 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.198	130	33307	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.555	114	165586	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	115501	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.957	65	67444	9.14	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 91.40%			
34) Toluene-d8	12.802	98	113475	10.22	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.20%			
53) 4-Bromofluorobenzene	17.053	174	61428	10.30	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 103.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.440	85	69412	3.12	ppbv	97
3) Chloromethane	3.808	50	3149	0.55	ppbv	96
4) 1,2-Cl-1,1,2,2-F ethan...	3.696	85	491	0.02	ppbv	56
6) Bromomethane	4.735	94	1732	0.61	ppbv	83
8) Trichlorofluoromethane...	5.345	101	9472	0.38	ppbv	98
10) Carbon Disulfide	6.926	76	1269678	74.36	ppbv	98
11) 1,1,2-Cl 1,2,2-F ethan...	6.092	151	3608	0.32	ppbv	90
12) Acetone	5.974	43	2668054	180.89	ppbv	91
16) Vinyl Acetate	8.009	43	549	0.02	ppbv	31
17) c-1,2-Dichloroethene	8.887	96	409	0.06	ppbv #	1
18) 2-Butanone	8.482	72	68177	22.86	ppbv #	54
19) t-Butyl Methyl Ether	7.200	73	2955	0.16	ppbv	8
20) Chloroform	9.005	83	1927	0.12	ppbv	59
21) 1,1,1-Trichloroethane	9.621	97	199	0.01	ppbv #	23
23) Carbon Tetrachloride	10.001	117	2160	0.13	ppbv	70
25) Benzene	10.188	78	44925	1.93	ppbv	92
28) Trichloroethene	11.078	130	162098	14.24	ppbv	83
30) Bromodichloromethane	11.588	83	406	0.02	ppbv #	25
32) c-1,3-Dichloropropene	12.341	75	1853	0.19	ppbv	39
33) 4-Methyl-2-Pentanone	12.092	43	46412	2.35	ppbv	86
35) Toluene	12.920	91	106438	4.22	ppbv	94
38) 1,1,2-Trichloroethane	13.318	97	1109	0.11	ppbv	85
40) Tetrachloroethene	13.960	166	10452328	775.55	ppbv	97
41) 2-Hexanone	13.362	58	24369	3.05	ppbv	95
42) Dibromochloromethane	14.153	129	437	0.03	ppbv #	1
44) Chlorobenzene	15.136	112	22572	1.17	ppbv	95
46) Ethylbenzene	15.248	91	21983	0.72	ppbv	95
47) p,&m-Xylene	15.379	91	63245	2.43	ppbv	97
48) o-Xylene	16.063	91	31388	1.09	ppbv	93
49) Styrene	16.076	104	11999	0.73	ppbv	86
51) Isopropyl benzene	16.673	105	8323	0.21	ppbv #	64
52) 1,1,2,2-Tetrachloroethane	16.773	83	9346	0.56	ppbv #	1
54) Benzyl Chloride	18.964	91	4628	0.46	ppbv	65
55) 1,2,3-Trichloropropane	17.134	110	3151	0.43	ppbv #	1
56) n-Propyl Benzene	17.364	91	10232	0.25	ppbv	88
57) Bromobenzene	17.377	77	3098	0.17	ppbv #	32
58) 4-Ethyl Toluene	17.520	105	26132	0.78	ppbv	85

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY017.D
Acq On : 13 May 2014 9:04 pm
Operator : vm
Sample : F050702-02 PACE
Misc : 347ML, 19.6/14.11
ALS Vial : 6 Sample Multiplier: 0.2

Quant Time: May 13 21:29:24 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

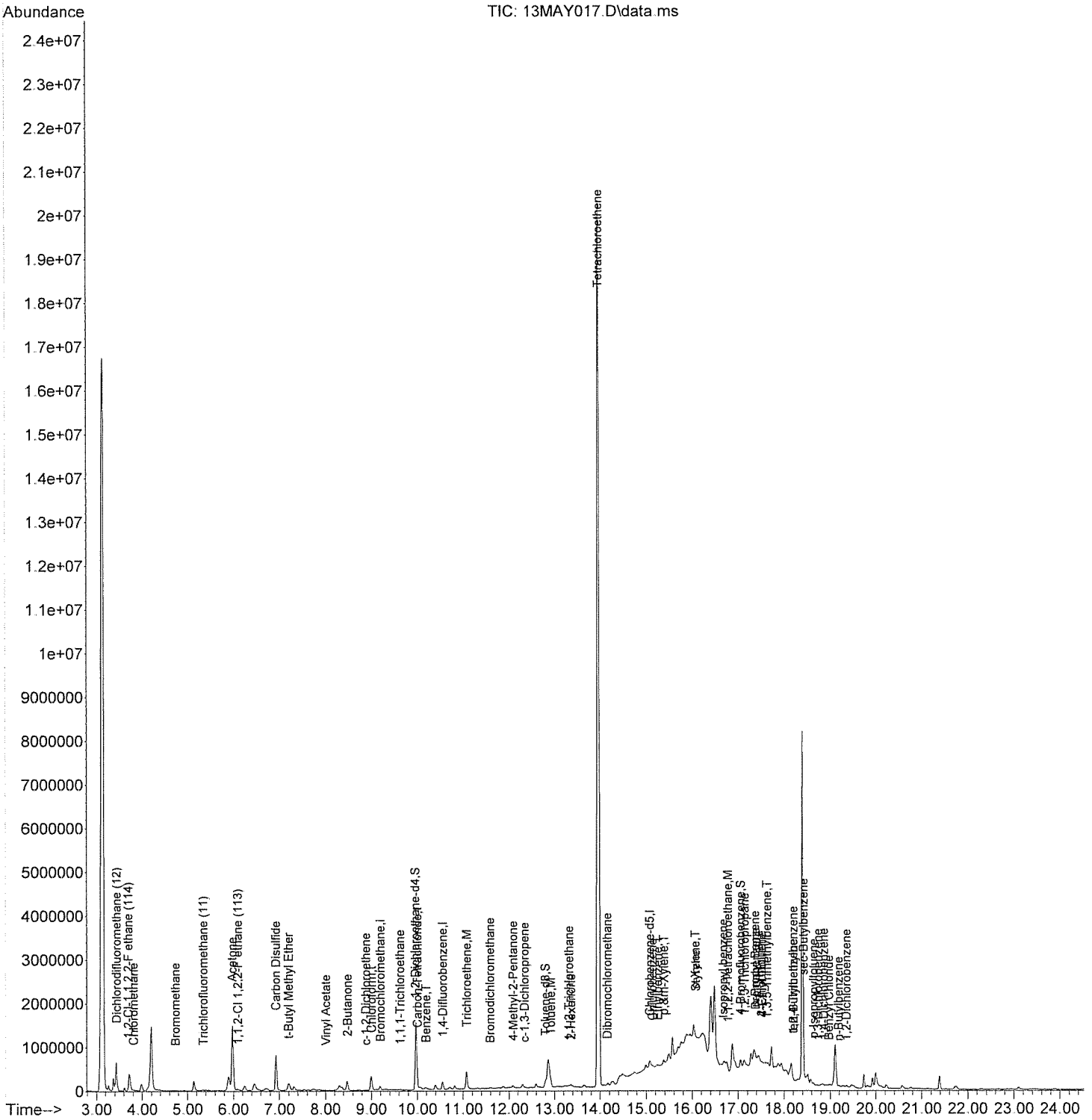
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
59) 1,3,5-Trimethylbenzene	17.626	105	22401	0.67 ppbv	95
60) 2-Chlorotoluene	17.507	91	3130	0.09 ppbv	97
62) tert-Butylbenzene	18.198	119	3636	0.11 ppbv #	88
63) 1,2,4-Trimethylbenzene	18.198	105	19744	0.62 ppbv	87
64) sec-Butylbenzene	18.422	105	1206	0.03 ppbv	61
65) p-Isopropyltoluene	18.640	119	17346	0.47 ppbv	96
66) 1,3-Dichlorobenzene	18.734	146	3148	0.18 ppbv	70
67) 1,4-Dichlorobenzene	18.858	146	4544	0.28 ppbv	95
68) n-Butylbenzene	19.182	91	17182	0.57 ppbv	98
69) 1,2-Dichlorobenzene	19.350	146	2959	0.18 ppbv	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY017.D
Acq On : 13 May 2014 9:04 pm
Operator : vm
Sample : F050702-02 PACE
Misc : 347ML, 19.6/14.11
ALS Vial : 6 Sample Multiplier: 0.2

Quant Time: May 13 21:29:24 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 15MAY009.D
Acq On : 15 May 2014 1:42 pm
Operator : VM
Sample : F050702-03 PACE
Misc : 150 ML, 19.6/12.65
ALS Vial : 6 Sample Multiplier: 0.516

Quant Time: May 15 14:07:19 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.204	130	35976	10.00	ppbv	0.01
24) 1,4-Difluorobenzene	10.555	114	170250	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	121474	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.970	65	68951	9.08	ppbv	0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 90.80%			
34) Toluene-d8	12.802	98	116301	10.19	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.90%			
53) 4-Bromofluorobenzene	17.053	174	66826	10.66	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.478	85	20627	0.86	ppbv	91
3) Chloromethane	3.839	50	3447	0.56	ppbv	98
6) Bromomethane	4.766	94	850	0.28	ppbv	91
8) Trichlorofluoromethane...	5.370	101	9622	0.36	ppbv	88
10) Carbon Disulfide	6.951	76	2534619	137.43	ppbv	99
12) Acetone	5.999	43	690854	43.36	ppbv	93
16) Vinyl Acetate	8.090	43	1085	0.04	ppbv	76
17) c-1,2-Dichloroethene	8.793	96	1680	0.22	ppbv #	57
18) 2-Butanone	8.488	72	34092	10.58	ppbv #	55
19) t-Butyl Methyl Ether	7.219	73	9047	0.46	ppbv	31
23) Carbon Tetrachloride	10.032	117	1141	0.07	ppbv #	18
25) Benzene	10.194	78	43899	1.83	ppbv	94
28) Trichloroethene	11.084	130	14738	1.26	ppbv	87
32) c-1,3-Dichloropropene	12.360	75	5244	0.51	ppbv	78
33) 4-Methyl-2-Pentanone	12.098	43	27917	1.38	ppbv	84
35) Toluene	12.926	91	50255	1.94	ppbv	97
38) 1,1,2-Trichloroethane	13.412	97	4044	0.40	ppbv #	9
40) Tetrachloroethene	13.953	166	26010	1.84	ppbv	96
41) 2-Hexanone	13.368	58	7741	0.92	ppbv	93
42) Dibromochloromethane	13.953	129	19440	1.23	ppbv #	1
44) Chlorobenzene	15.136	112	4681	0.23	ppbv	94
46) Ethylbenzene	15.248	91	11763	0.37	ppbv	98
47) p,&m-Xylene	15.379	91	34698	1.27	ppbv	94
48) o-Xylene	16.057	91	26360	0.87	ppbv	99
49) Styrene	16.082	104	6624	0.38	ppbv	82
51) Isopropyl benzene	16.686	105	7007	0.17	ppbv	70
52) 1,1,2,2-Tetrachloroethane	16.879	83	7699	0.44	ppbv #	1
54) Benzyl Chloride	19.070	91	1924	0.18	ppbv	65
55) 1,2,3-Trichloropropane	17.128	110	628	0.08	ppbv #	1
56) n-Propyl Benzene	17.315	91	20726	0.47	ppbv #	53
57) Bromobenzene	17.308	77	1742	0.09	ppbv #	32
58) 4-Ethyl Toluene	17.507	105	28627	0.81	ppbv	92
59) 1,3,5-Trimethylbenzene	17.613	105	16895	0.48	ppbv	99
60) 2-Chlorotoluene	17.626	91	1943	0.06	ppbv #	51
61) 4-Chlorotoluene	17.676	91	421	0.02	ppbv #	49
62) tert-Butylbenzene	18.198	119	3597	0.10	ppbv #	80
63) 1,2,4-Trimethylbenzene	18.205	105	23660	0.71	ppbv	94

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 15MAY009.D
Acq On : 15 May 2014 1:42 pm
Operator : VM
Sample : F050702-03 PACE
Misc : 150 ML, 19.6/12.65
ALS Vial : 6 Sample Multiplier: 0.516

Quant Time: May 15 14:07:19 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

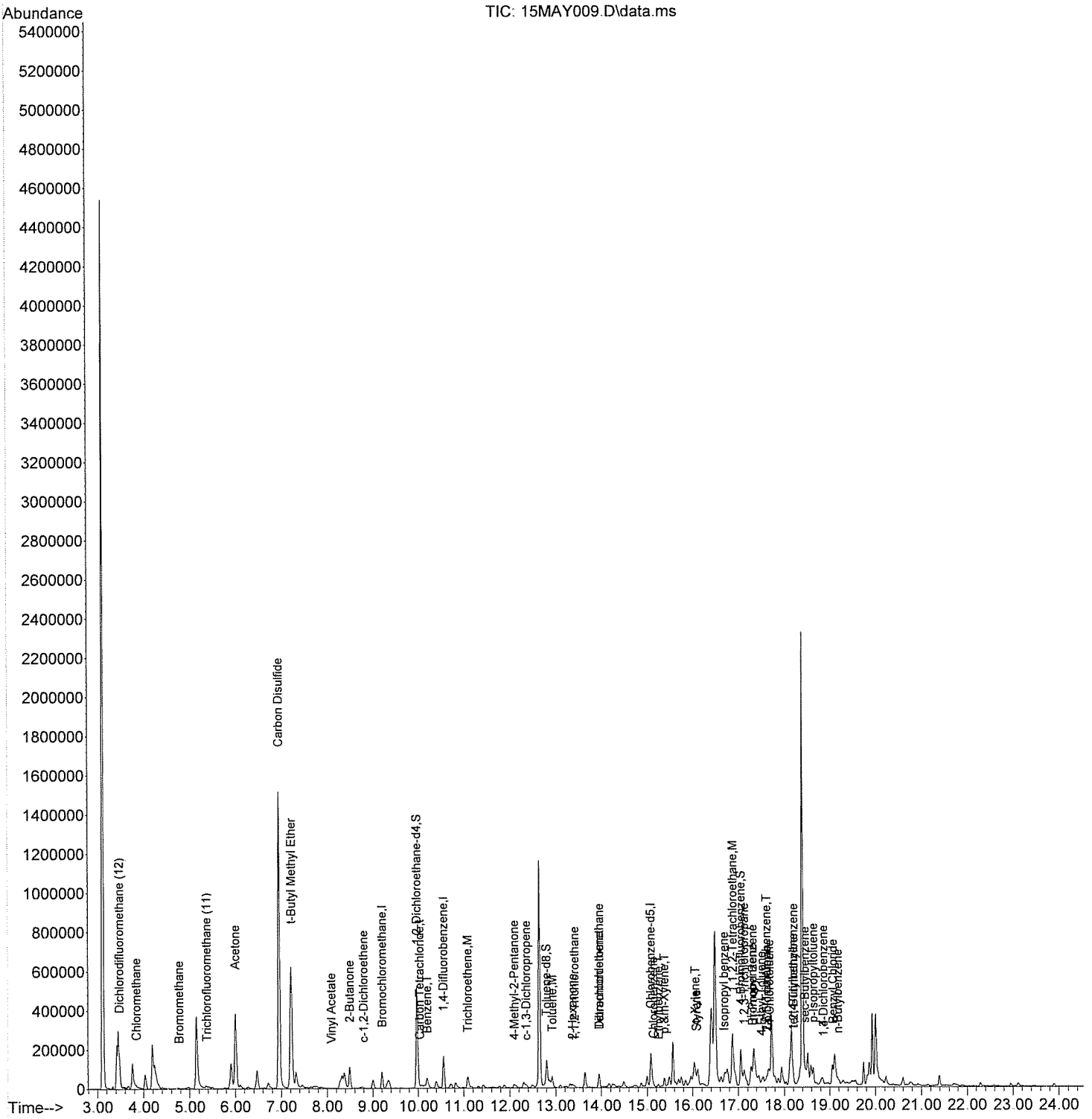
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
64) sec-Butylbenzene	18.454	105	1219	0.02 ppbv	60
65) p-Isopropyltoluene	18.640	119	47147	1.21 ppbv	93
66) 1,3-Dichlorobenzene	18.858	146	1726	0.10 ppbv	78
67) 1,4-Dichlorobenzene	18.858	146	1726	0.10 ppbv	81
68) n-Butylbenzene	19.176	91	5137	0.16 ppbv #	75

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 15MAY009.D
Acq On : 15 May 2014 1:42 pm
Operator : VM
Sample : F050702-03 PACE
Misc : 150 ML, 19.6/12.65
ALS Vial : 6 Sample Multiplier: 0.516

Quant Time: May 15 14:07:19 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY018.D
Acq On : 13 May 2014 9:47 pm
Operator : vm
Sample : F050702-03 PACE
Misc : 387ML, 19.6/12.65
ALS Vial : 7 Sample Multiplier: 0.2

Quant Time: May 13 22:12:26 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.198	130	36028	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.555	114	172786	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	122796	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.964	65	68982	8.95	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 89.50%			
34) Toluene-d8	12.802	98	116429	10.05	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.50%			
53) 4-Bromofluorobenzene	17.053	174	66366	10.47	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.70%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.459	85	57535	2.39	ppbv	99
3) Chloromethane	3.826	50	10449	1.69	ppbv	98
4) 1,2-Cl-1,1,2,2-F ethan...	3.708	85	986	0.04	ppbv	58
6) Bromomethane	4.748	94	2524	0.82	ppbv	75
8) Trichlorofluoromethane...	5.351	101	27162	1.01	ppbv	91
10) Carbon Disulfide	6.945	76	4808741	260.36	ppbv	98
11) 1,1,2-Cl 1,2,2-F ethan...	6.104	151	4015	0.33	ppbv #	63
12) Acetone	5.980	43	1560011	97.78	ppbv	93
13) Methylene Chloride	6.901	84	2242	0.39	ppbv #	36
16) Vinyl Acetate	7.972	43	575	0.02	ppbv	76
17) c-1,2-Dichloroethene	8.781	96	4811	0.62	ppbv	89
18) 2-Butanone	8.476	72	74995	23.25	ppbv #	48
19) t-Butyl Methyl Ether	7.275	73	199	0.01	ppbv	1
20) Chloroform	8.999	83	1118	0.06	ppbv #	27
23) Carbon Tetrachloride	10.007	117	5153	0.30	ppbv	87
25) Benzene	10.188	78	91788	3.77	ppbv	92
28) Trichloroethene	11.078	130	33157	2.79	ppbv	86
32) c-1,3-Dichloropropene	12.360	75	7240	0.69	ppbv	79
33) 4-Methyl-2-Pentanone	12.086	43	44629	2.17	ppbv	90
35) Toluene	12.920	91	123656	4.70	ppbv	95
37) t-1,3-Dichloropropene	12.989	75	466	0.05	ppbv	49
38) 1,1,2-Trichloroethane	13.406	97	10420	1.01	ppbv #	9
40) Tetrachloroethene	13.947	166	69463	4.85	ppbv	96
41) 2-Hexanone	13.362	58	19336	2.27	ppbv	91
42) Dibromochloromethane	13.947	129	52004	3.25	ppbv #	1
44) Chlorobenzene	15.142	112	12102	0.59	ppbv	89
46) Ethylbenzene	15.248	91	26760	0.83	ppbv	94
47) p,&m-Xylene	15.379	91	76176	2.76	ppbv	99
48) o-Xylene	16.057	91	54507	1.78	ppbv	98
49) Styrene	16.082	104	15200	0.87	ppbv	97
51) Isopropyl benzene	16.680	105	9497	0.23	ppbv	83
52) 1,1,2,2-Tetrachloroethane	16.898	83	13435	0.75	ppbv #	1
54) Benzyl Chloride	18.964	91	2055	0.19	ppbv	65
55) 1,2,3-Trichloropropane	17.122	110	3046	0.39	ppbv #	1
57) Bromobenzene	17.308	77	12336	0.65	ppbv #	32
58) 4-Ethyl Toluene	17.514	105	59035	1.66	ppbv	89
59) 1,3,5-Trimethylbenzene	17.613	105	36405	1.02	ppbv	95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY018.D
Acq On : 13 May 2014 9:47 pm
Operator : vm
Sample : F050702-03 PACE
Misc : 387ML, 19.6/12.65
ALS Vial : 7 Sample Multiplier: 0.2

Quant Time: May 13 22:12:26 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

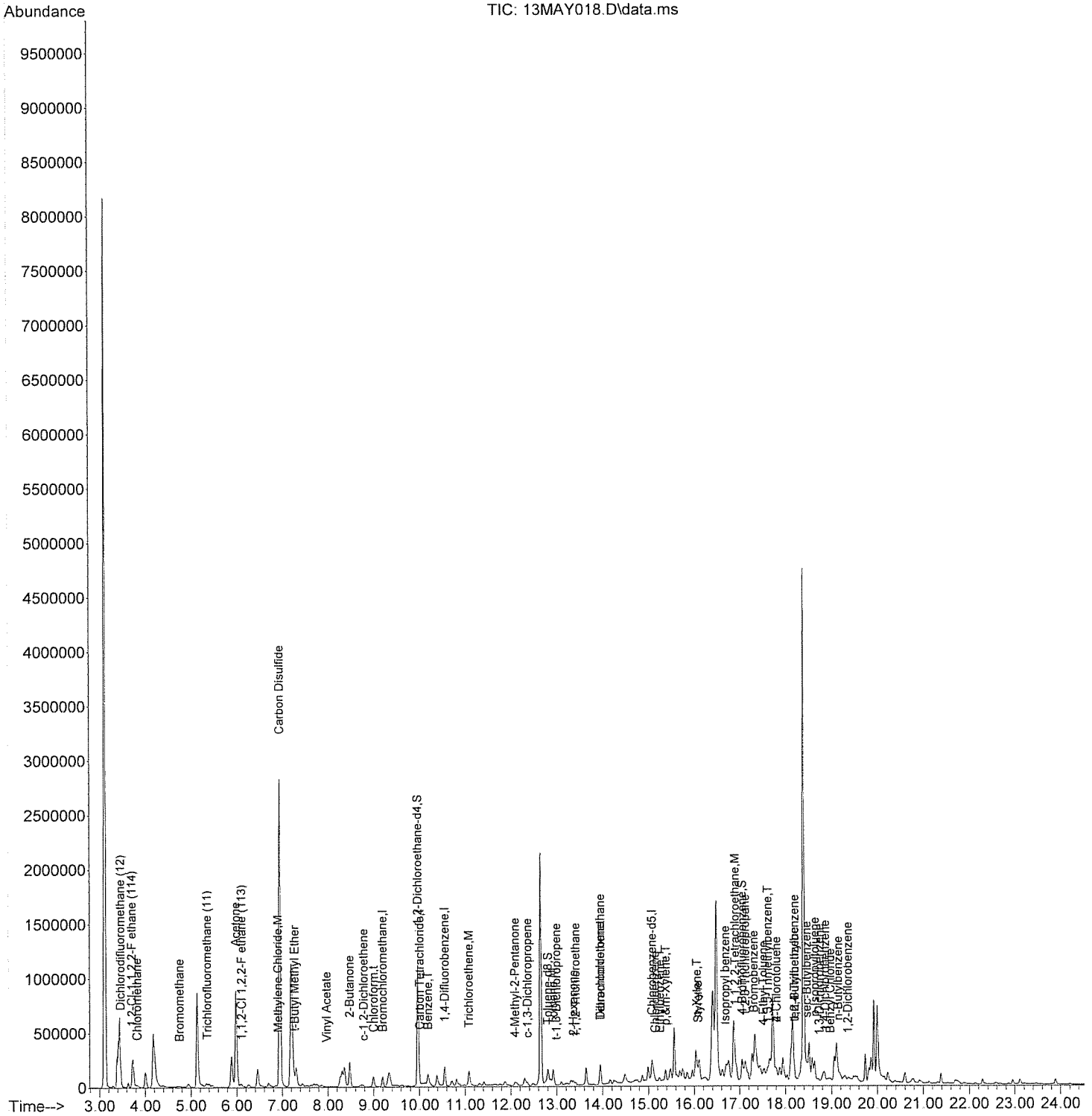
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
60) 2-Chlorotoluene	17.800	91	1586	0.04 ppbv	60
61) 4-Chlorotoluene	17.800	91	1586	0.06 ppbv	65
62) tert-Butylbenzene	18.198	119	7508	0.21 ppbv #	88
63) 1,2,4-Trimethylbenzene	18.198	105	47626	1.42 ppbv	90
64) sec-Butylbenzene	18.460	105	3826	0.08 ppbv	66
65) p-Isopropyltoluene	18.640	119	98918	2.52 ppbv	93
66) 1,3-Dichlorobenzene	18.734	146	608	0.03 ppbv	75
67) 1,4-Dichlorobenzene	18.858	146	4372	0.25 ppbv	91
68) n-Butylbenzene	19.138	91	638	0.02 ppbv	99
69) 1,2-Dichlorobenzene	19.350	146	1350	0.08 ppbv	73

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY018.D
Acq On : 13 May 2014 9:47 pm
Operator : vm
Sample : F050702-03 PACE
Misc : 387ML, 19.6/12.65
ALS Vial : 7 Sample Multiplier: 0.2

Quant Time: May 13 22:12:26 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY019.D
Acq On : 13 May 2014 10:31 pm
Operator : vm
Sample : F050702-04 PACE
Misc : 387ML, 19.6/12.65
ALS Vial : 8 Sample Multiplier: 0.2

Quant Time: May 13 22:55:38 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.198	130	35599	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.555	114	172836	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	123173	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.964	65	68249	8.86	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 88.60%			
34) Toluene-d8	12.802	98	116530	10.05	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.50%			
53) 4-Bromofluorobenzene	17.053	174	65179	10.25	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.453	85	45454	1.91	ppbv	99
3) Chloromethane	3.820	50	4439	0.73	ppbv	93
4) 1,2-Cl-1,1,2,2-F ethan...	3.708	85	758	0.03	ppbv #	31
6) Bromomethane	4.735	94	3530	1.16	ppbv	79
8) Trichlorofluoromethane...	5.351	101	10120	0.38	ppbv	95
9) 1,1-Dichloroethene	6.447	61	5068	0.39	ppbv #	34
10) Carbon Disulfide	6.926	76	1277306	69.99	ppbv	99
11) 1,1,2-Cl 1,2,2-F ethan...	6.105	151	387	0.03	ppbv #	1
12) Acetone	5.986	43	1018175	64.59	ppbv	98
16) Vinyl Acetate	7.847	43	256585	9.28	ppbv	79
17) c-1,2-Dichloroethene	8.781	96	6774	0.88	ppbv	84
18) 2-Butanone	8.495	72	113932	35.74	ppbv #	52
19) t-Butyl Methyl Ether	7.231	73	15020	0.77	ppbv	1
23) Carbon Tetrachloride	10.013	117	4267	0.25	ppbv	90
25) Benzene	10.188	78	106438	4.37	ppbv	91
28) Trichloroethene	11.078	130	46453	3.91	ppbv	81
32) c-1,3-Dichloropropene	12.366	75	5105	0.49	ppbv	65
33) 4-Methyl-2-Pentanone	12.092	43	182147	8.85	ppbv	84
35) Toluene	12.920	91	83041	3.15	ppbv	99
37) t-1,3-Dichloropropene	13.001	75	664	0.07	ppbv	35
38) 1,1,2-Trichloroethane	13.418	97	11482	1.11	ppbv #	15
40) Tetrachloroethene	13.947	166	76174	5.30	ppbv	94
41) 2-Hexanone	13.362	58	23514	2.76	ppbv	93
42) Dibromochloromethane	13.947	129	57825	3.61	ppbv #	1
44) Chlorobenzene	15.136	112	21419	1.04	ppbv	94
46) Ethylbenzene	15.242	91	16348	0.50	ppbv	99
47) p,&m-Xylene	15.379	91	65173	2.35	ppbv	97
48) o-Xylene	16.057	91	39336	1.28	ppbv	93
49) Styrene	16.082	104	14909	0.85	ppbv	81
51) Isopropyl benzene	16.674	105	6874	0.16	ppbv	84
52) 1,1,2,2-Tetrachloroethane	16.898	83	19029	1.06	ppbv #	1
54) Benzyl Chloride	18.964	91	1432	0.13	ppbv	65
55) 1,2,3-Trichloropropane	17.134	110	4574	0.58	ppbv #	1
56) n-Propyl Benzene	17.364	91	25145	0.57	ppbv	96
57) Bromobenzene	17.340	77	8415	0.44	ppbv #	32
58) 4-Ethyl Toluene	17.514	105	51686	1.45	ppbv	94
59) 1,3,5-Trimethylbenzene	17.613	105	24833	0.69	ppbv	98

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY019.D
Acq On : 13 May 2014 10:31 pm
Operator : vm
Sample : F050702-04 PACE
Misc : 387ML, 19.6/12.65
ALS Vial : 8 Sample Multiplier: 0.2

Quant Time: May 13 22:55:38 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

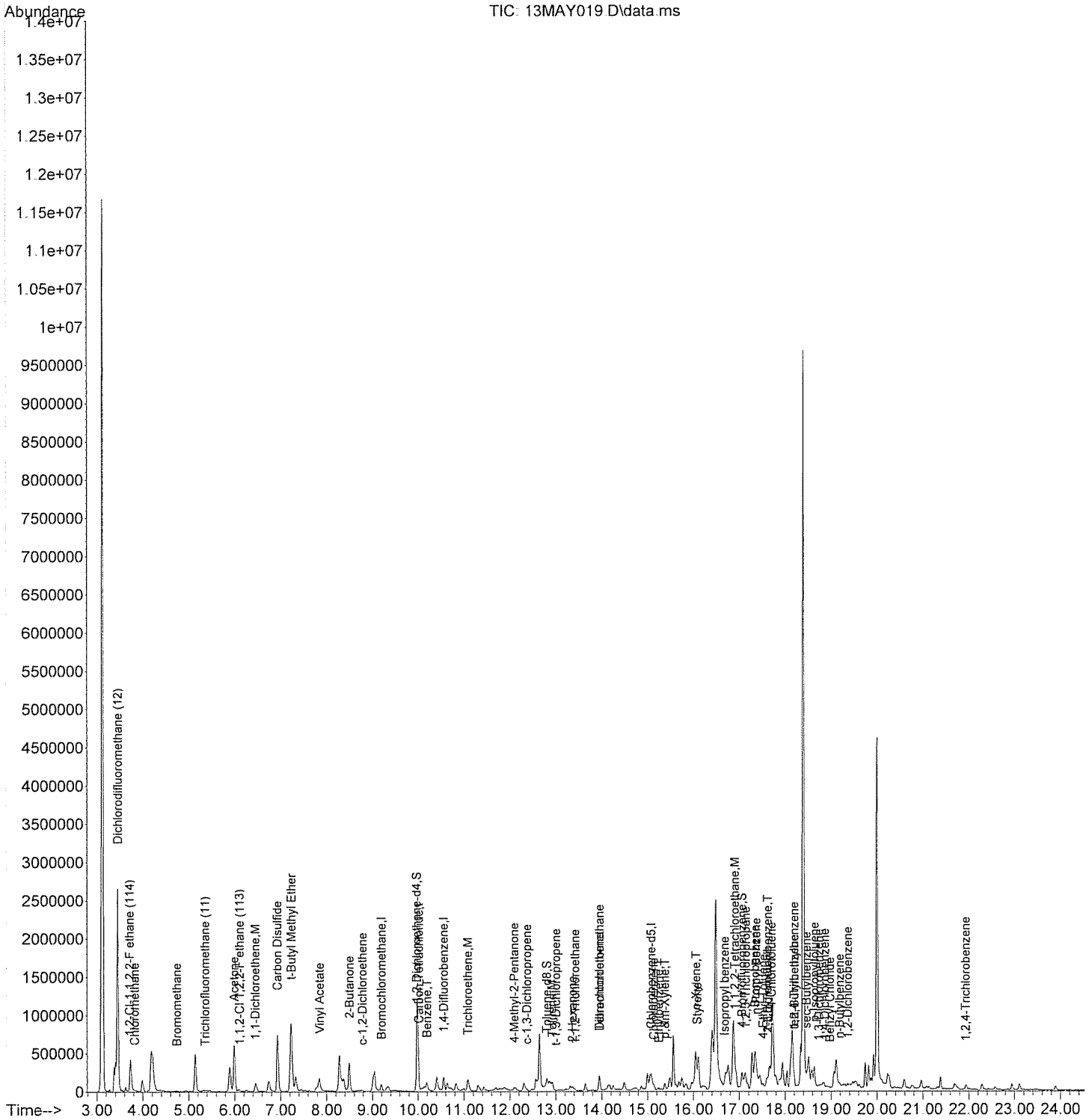
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
60) 2-Chlorotoluene	17.613	91	3860	0.11 ppbv #	51
61) 4-Chlorotoluene	17.701	91	2886	0.10 ppbv #	49
62) tert-Butylbenzene	18.198	119	6023	0.17 ppbv #	57
63) 1,2,4-Trimethylbenzene	18.198	105	49319	1.46 ppbv	93
64) sec-Butylbenzene	18.460	105	1974	0.04 ppbv	60
65) p-Isopropyltoluene	18.640	119	124724	3.16 ppbv	94
66) 1,3-Dichlorobenzene	18.734	146	1785	0.10 ppbv	88
67) 1,4-Dichlorobenzene	18.858	146	6201	0.35 ppbv	96
68) n-Butylbenzene	19.182	91	10805	0.34 ppbv #	89
69) 1,2-Dichlorobenzene	19.356	146	2826	0.16 ppbv	88
71) 1,2,4-Trichlorobenzene	21.927	180	1124	0.17 ppbv #	18

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY019.D
Acq On : 13 May 2014 10:31 pm
Operator : vm
Sample : F050702-04 PACE
Misc : 387ML, 19.6/12.65
ALS Vial : 8 Sample Multiplier: 0.2

Quant Time: May 13 22:55:38 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY020.D
Acq On : 13 May 2014 11:12 pm
Operator : vm
Sample : F050702-05 PACE
Misc : 250ML
ALS Vial : 9 Sample Multiplier: 0.2

Quant Time: May 13 23:37:30 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

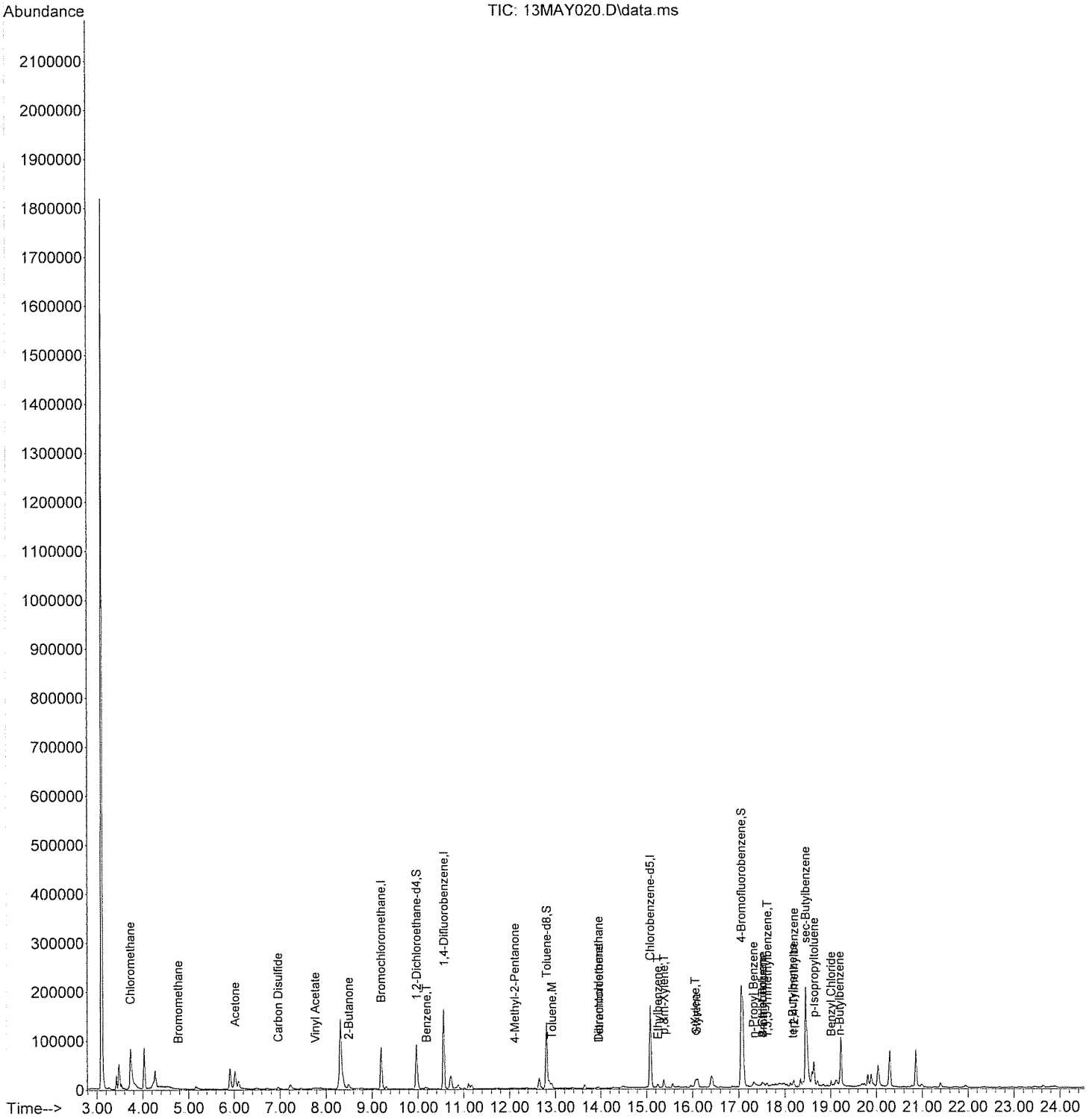
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.198	130	38484	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.561	114	170731	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	126103	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.964	65	69285	9.10	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 91.00%			
34) Toluene-d8	12.808	98	116846	10.21	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.10%			
53) 4-Bromofluorobenzene	17.053	174	68200	10.48	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.80%			
Target Compounds						Qvalue
3) Chloromethane	3.727	50	3755	0.57	ppbv #	44
6) Bromomethane	4.773	94	1298	0.39	ppbv	72
10) Carbon Disulfide	6.957	76	7263	0.37	ppbv	74
12) Acetone	6.017	43	47294	2.78	ppbv	93
16) Vinyl Acetate	7.766	43	20305	0.68	ppbv	76
18) 2-Butanone	8.495	72	2326	0.67	ppbv #	22
25) Benzene	10.182	78	3211	0.13	ppbv	59
33) 4-Methyl-2-Pentanone	12.111	43	3736	0.18	ppbv	44
35) Toluene	12.926	91	11793	0.45	ppbv	86
40) Tetrachloroethene	13.960	166	1324	0.09	ppbv	88
42) Dibromochloromethane	13.947	129	796	0.05	ppbv #	22
46) Ethylbenzene	15.242	91	8057	0.24	ppbv	91
47) p,&m-Xylene	15.379	91	14744	0.52	ppbv	95
48) o-Xylene	16.057	91	10178	0.32	ppbv	94
49) Styrene	16.082	104	5893	0.33	ppbv	95
54) Benzyl Chloride	19.008	91	709	0.06	ppbv	65
56) n-Propyl Benzene	17.321	91	6549	0.14	ppbv #	53
57) Bromobenzene	17.520	77	987	0.05	ppbv #	32
58) 4-Ethyl Toluene	17.520	105	13057	0.36	ppbv	96
59) 1,3,5-Trimethylbenzene	17.620	105	5854	0.16	ppbv	95
60) 2-Chlorotoluene	17.514	91	487	0.01	ppbv #	51
62) tert-Butylbenzene	18.174	119	405	0.01	ppbv #	30
63) 1,2,4-Trimethylbenzene	18.198	105	8522	0.25	ppbv	98
64) sec-Butylbenzene	18.454	105	774	0.02	ppbv	60
65) p-Isopropyltoluene	18.640	119	33027	0.82	ppbv	88
68) n-Butylbenzene	19.194	91	2194	0.07	ppbv #	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY020.D
Acq On : 13 May 2014 11:12 pm
Operator : vm
Sample : F050702-05 PACE
Misc : 250ML
ALS Vial : 9 Sample Multiplier: 0.2

Quant Time: May 13 23:37:30 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



3. Initial Calibration

a. ICAL Summary
b. Results/Chromatograms

Default Initial Calibration Criteria:

90% of target compounds must have RSD <30%
All target compounds must have RSD <50%

(This criteria superceded by any project specific criteria)

Response Factor Report ms2

Method Path : C:\msdchem\1\methods\
Method File : TO140424.M
Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
Last Update : Fri Apr 25 11:30:04 2014
Response Via : Initial Calibration

Calibration Files
1 =24APR003.D 2.5 =24APR005.D 5 =24APR006.D 7 =24APR007.D 10 =24APR008.D 25 =24APR009.D 100 =24APR010.D
250 =24APR011.D

		Compound	1	2.5	5	7	10	25	100	250	Avg		%RSD
1)	I	Bromochloromethane	----------ISTD----------										
2)		Dichlorodifluo...	9.410	6.847	6.995	7.289	7.029	6.302	5.686	3.848	6.676		23.49
3)		Chloromethane	2.336	1.761	1.778	1.862	1.770	1.625	1.504	1.084	1.715		20.52
4)		1,2-Cl-1,1,2,2...	8.786	6.259	6.324	6.679	6.464	5.760	5.087	3.417	6.097		24.87
5)		Vinyl Chloride	2.066	1.568	1.583	1.720	1.676	1.532	1.450	1.063	1.582		17.74
6)		Bromomethane	1.279	0.773	0.649	0.994	0.944	0.765	0.883	0.553	0.855		26.39
7)		Chloroethane	0.167	0.216	0.217	0.339	0.309	0.201	0.265		0.245		25.27
8)		Trichlorofluor...	1.018	0.763	0.777	0.811	0.783	0.713	0.647	0.437	0.744	E1	22.01
9)	M	1,1-Dichloroet...	5.269	3.595	3.731	3.898	3.760	3.487	3.127	2.188	3.632		23.59
10)		Carbon Disulfide	6.817	4.996	5.172	5.533	5.373	5.024	4.784	3.312	5.126		18.83
11)		1,1,2-Cl 1,2,2...	4.840	3.515	3.561	3.779	3.586	3.268	2.931	1.940	3.427		23.79
12)		Acetone		5.601	5.160	5.021	4.604	4.153	3.797	2.662	4.428		22.37
13)	M	Methylene Chlo...	2.333	1.558	1.675	1.740	1.681	1.514	1.402	0.964	1.608		23.75
14)		t-1,2-Dichloro...	2.545	1.858	1.910	2.067	2.098	1.915	1.781	1.223	1.925		19.17
15)		1,1-Dichloroet...	5.274	3.918	4.001	4.279	4.121	3.810	3.402	2.233	3.880		22.05
16)		Vinyl Acetate	1.012	0.762	0.841	0.847	0.837	0.816	0.671	0.424	0.776	E1	22.08
17)		c-1,2-Dichloro...	2.936	2.117	2.206	2.402	2.329	2.100	1.923	1.245	2.157		22.09
18)		2-Butanone	1.087	0.782	0.978	0.992	0.969	0.919	0.866	0.571	0.895		17.80
19)		t-Butyl Methyl...	7.318	5.569	5.957	5.774	5.508	5.448	5.172	3.136	5.485		21.01
20)	t	Chloroform	6.682	4.877	5.098	5.300	5.185	4.731	4.335	2.899	4.888		21.60
21)		1,1,1-Trichlor...	6.942	5.143	5.366	5.697	5.560	5.249	4.957	3.316	5.279		18.95
22)		1,1-Dichloropr...	4.239	3.032	3.314	3.146	3.047	2.805	1.634		3.031		25.40
23)	t	Carbon Tetrach...	5.249	5.191	4.570	5.043	5.084	5.056	5.127	3.427	4.843		12.56
24)	I	1,4-Difluorobenzene	----------ISTD----------										
25)	T	Benzene	1.878	1.332	1.325	1.459	1.429	1.330	1.340	1.173	1.408		14.76
26)	S	1,2-Dichloroet...	0.404	0.435	0.427	0.430	0.452	0.441	0.450	0.528	0.446		8.16
27)		1,2-Dichloroet...	1.079	0.821	0.829	0.952	0.904	0.861	0.868	0.767	0.885		10.85
28)	M	Trichloroethene	0.885	0.636	0.624	0.708	0.699	0.660	0.686	0.601	0.687		12.85
29)		1,2-Dichloropr...	0.601	0.450	0.465	0.520	0.528	0.493	0.511	0.454	0.503		9.93
30)		Bromodichlorom...	1.161	0.904	0.970	1.114	1.128	1.111	1.199	1.017	1.076		9.43
31)		Dibromomethane	0.674	0.543	0.562	0.572	0.573	0.537	0.356	0.304	0.515		23.79
32)		c-1,3-Dichloro...	0.548	0.432	0.495	0.610	0.612	0.643	0.775	0.716	0.604		18.60
33)		4-Methyl-2-Pen...	1.409	1.008	1.073	1.241	1.237	1.192	1.284	1.079	1.190		11.03
34)	S	Toluene-d8	0.660	0.658	0.661	0.653	0.656	0.673	0.693	0.711	0.671		3.09
35)	M	Toluene	1.922	1.377	1.381	1.566	1.529	1.440	1.530	1.438	1.523		11.55

Method Path : C:\msdchem\1\methods\
Method File : TO140424.M
Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm

36)	I	Chlorobenzene-d5	----------ISTD----------									
37)		t-1,3-Dichloro...	0.569	0.492	0.605	0.742	0.750	0.844	1.150		0.736	29.78
38)		1,1,2-Trichlor...	1.048	0.769	0.785	0.868	0.859	0.807	0.858	0.731	0.841	11.55
39)		1,3-Dichloropr...	1.270	1.013	1.058	1.024	1.037	1.000	0.662	0.604	0.958	22.85
40)		Tetrachloroethene	1.460	1.106	1.090	1.229	1.183	1.119	1.148	0.998	1.167	11.73
41)		2-Hexanone	0.699	0.550	0.610	0.747	0.740	0.731	0.818	0.643	0.692	12.45
42)		Dibromochlorom...	1.181	0.960	1.070	1.297	1.313	1.411	1.698	1.488	1.302	18.12
43)	t	1,2-Dibromoethane	1.156	0.932	0.996	1.183	1.184	1.181	1.366	1.184	1.148	11.51
44)		Chlorobenzene	2.153	1.503	1.547	1.719	1.656	1.550	1.677	1.519	1.666	12.75
45)		1,1,1,2-Tetrac...	1.081	0.810	0.887	0.896	0.884	0.912	0.628	0.569	0.834	19.75
46)	T	Ethylbenzene	3.335	2.494	2.585	2.855	2.770	2.572	2.521	1.964	2.637	14.65
47)	T	p,&m-Xylene	2.764	2.150	2.218	2.466	2.450	2.306	2.300	1.341	2.249	18.36
48)	T	o-Xylene	3.076	2.318	2.435	2.693	2.605	2.542	2.688	1.547	2.488	17.72
49)		Styrene	1.683	1.251	1.383	1.552	1.520	1.459	1.554	0.977	1.422	15.54
50)		Bromoform	0.701	0.550	0.627	0.907	0.938	1.030	1.418		0.882	33.45
51)		Isopropyl benzene	4.657	3.553	3.663	3.498	3.433	3.232	1.897		3.419	23.79
52)	M	1,1,2,2-Tetrac...	1.684	1.313	1.399	1.457	1.451	1.364	1.629	1.339	1.454	9.29
53)	S	4-Bromofluorob...	0.534	0.547	0.545	0.548	0.531	0.543	0.503	0.380	0.516	11.05
54)		Benzyl Chloride	0.748	0.617	0.709	0.817	0.854	0.991	1.390	0.861	0.873	27.13
55)		1,2,3-Trichlor...	0.858	0.694	0.686	0.643	0.634	0.585	0.357		0.637	23.60
56)		n-Propyl Benzene	4.863	3.670	3.888	3.699	3.623	3.448	2.056		3.607	22.92
57)		Bromobenzene	2.223	1.638	1.669	1.577	1.513	1.403	0.797		1.546	27.27
58)		4-Ethyl Toluene	3.406	2.643	2.921	3.244	3.097	3.039	3.511	1.309	2.896	24.07
59)	T	1,3,5-Trimethy...	3.477	2.723	2.792	3.005	3.015	2.875	3.160	2.251	2.912	12.24
60)		2-Chlorotoluene	3.957	2.999	3.126	2.928	2.858	2.670	1.720		2.894	22.86
61)		4-Chlorotoluene	2.920	2.327	2.468	2.304	2.266	2.134	1.301		2.246	21.66
62)		tert-Butylbenzene	4.169	3.159	3.312	3.119	3.069	2.945	1.989	1.565	2.916	27.61
63)		1,2,4-Trimethy...	3.091	2.516	2.620	2.884	2.855	2.738	3.277	1.927	2.739	14.93
64)		sec-Butylbenzene	5.488	4.221	4.453	4.142	4.018	3.870	2.352		4.078	22.79
65)		p-Isopropyltol...	4.201	3.247	3.476	3.225	3.200	3.104	1.952		3.201	20.76
66)		1,3-Dichlorobe...	1.878	1.458	1.493	1.561	1.534	1.430	1.800	0.807	1.495	21.51
67)		1,4-Dichlorobe...	1.886	1.349	1.391	1.466	1.428	1.366	1.749	0.775	1.426	22.98
68)		n-Butylbenzene	3.337	2.595	2.799	2.663	2.633	2.544	1.637		2.601	19.34
69)		1,2-Dichlorobe...	1.845	1.366	1.437	1.444	1.418	1.340	1.821	0.835	1.438	21.85
70)		1,2-Dibromo-3-...	0.476	0.428	0.481	0.491	0.495	0.535	0.374	0.299	0.447	17.21
71)		1,2,4-Trichlor...	0.677	0.543	0.578	0.448	0.442	0.446			0.522	18.20
72)		Hexachlorobuta...	0.871	0.756	0.759	0.539	0.541	0.534	1.084	0.920	0.750	27.12

(#) = Out of Range

4. Continuing Calibration

a. CCAL Summary
b. Results/Chromatograms

Default Continuing Calibration Criteria:

90% of target compounds must have %Diff <30%
All target compounds must have %Diff <50%

(This criteria superceded by any project specific criteria)

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY006.D
Acq On : 13 May 2014 12:32 pm
Operator : vm
Sample : CCV
Misc : 50ML, AW1201213
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 13 12:57:02 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	107	0.00
2		Dichlorodifluoromethane (12	6.676	5.460	18.2	83	0.01
3		Chloromethane	1.715	1.476	13.9	89	0.01
4		1,2-Cl-1,1,2,2-F ethane (11	6.097	5.118	16.1	85	0.01
5		Vinyl Chloride	1.582	1.404	11.3	89	0.01
6		Bromomethane	0.855	0.749	12.4	85	0.01
7		Chloroethane	0.245	0.268	-9.4	93	0.02
8		Trichlorofluoromethane (11)	7.435	6.030	18.9	82	0.00
9	M	1,1-Dichloroethene	3.632	3.067	15.6	87	0.00
10		Carbon Disulfide	5.126	4.382	14.5	87	0.00
11		1,1,2-Cl 1,2,2-F ethane (11	3.427	2.990	12.8	89	0.01
12		Acetone	4.428	4.061	8.3	94	0.00
13	M	Methylene Chloride	1.608	1.379	14.2	88	0.00
14		t-1,2-Dichloroethene	1.925	1.703	11.5	87	0.00
15		1,1-Dichloroethane	3.880	3.414	12.0	88	0.00
16		Vinyl Acetate	7.764	6.723	13.4	86	0.00
17		c-1,2-Dichloroethene	2.157	1.919	11.0	88	0.00
18		2-Butanone	0.895	0.841	6.0	93	0.00
19		t-Butyl Methyl Ether	5.485	4.952	9.7	96	0.00
20	t	Chloroform	4.888	4.079	16.6	84	0.00
21		1,1,1-Trichloroethane	5.279	4.362	17.4	84	0.00
22		1,1-Dichloropropene	3.031	2.464	18.7	86	0.00
23	t	Carbon Tetrachloride	4.843	3.916	19.1	82	0.00
24	I	1,4-Difluorobenzene	1.000	1.000	0.0	107	0.00
25	T	Benzene	1.408	1.202	14.6	90	0.00
26	S	1,2-Dichloroethane-d4	0.446	0.404	9.4	95	0.00
27		1,2-Dichloroethane	0.885	0.717	19.0	84	0.00
28	M	Trichloroethene	0.687	0.604	12.1	92	0.00
29		1,2-Dichloropropane	0.503	0.445	11.5	90	0.00
30		Bromodichloromethane	1.076	0.896	16.7	85	0.00
31		Dibromomethane	0.515	0.446	13.4	83	0.00
32		c-1,3-Dichloropropene	0.604	0.522	13.6	91	0.00
33		4-Methyl-2-Pentanone	1.190	1.046	12.1	90	0.00
34	S	Toluene-d8	0.671	0.661	1.5	107	0.00
35	M	Toluene	1.523	1.375	9.7	96	0.00
36	I	Chlorobenzene-d5	1.000	1.000	0.0	105	0.00
37		t-1,3-Dichloropropene	0.736	0.636	13.6	89	0.00
38		1,1,2-Trichloroethane	0.841	0.719	14.5	88	0.00
39		1,3-Dichloropropane	0.958	0.849	11.4	86	0.00
40		Tetrachloroethene	1.167	1.051	9.9	93	0.00
41		2-Hexanone	0.692	0.673	2.7	96	0.00
42		Dibromochloromethane	1.302	1.146	12.0	92	0.00
43	t	1,2-Dibromoethane	1.148	1.005	12.5	89	0.00
44		Chlorobenzene	1.666	1.496	10.2	95	0.00
45		1,1,1,2-Tetrachloroethane	0.834	0.732	12.2	87	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY006.D
Acq On : 13 May 2014 12:32 pm
Operator : vm
Sample : CCV
Misc : 50ML, AW1201213
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 13 12:57:02 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
46	T	Ethylbenzene	2.637	2.496	5.3	95	0.00
47	T	p,&m-Xylene	2.249	2.182	3.0	93	0.00
48	T	o-Xylene	2.488	2.384	4.2	96	0.00
49		Styrene	1.422	1.425	-0.2	98	0.00
50		Bromoform	0.882	0.862	2.3	96	0.00
51		Isopropyl benzene	3.419	2.754	19.5	84	0.00
52	M	1,1,2,2-Tetrachloroethane	1.454	1.341	7.8	97	0.00
53	S	4-Bromofluorobenzene	0.516	0.540	-4.7	107	0.00
54		Benzyl Chloride	0.873	0.842	3.6	104	0.00
55		1,2,3-Trichloropropane	0.637	0.481	24.5	80	0.00
56		n-Propyl Benzene	3.607	2.992	17.1	87	0.00
57		Bromobenzene	1.546	1.238	19.9	86	0.00
58		4-Ethyl Toluene	2.896	2.979	-2.9	101	0.00
59	T	1,3,5-Trimethylbenzene	2.912	2.775	4.7	97	0.00
60		2-Chlorotoluene	2.894	2.317	19.9	85	0.00
61		4-Chlorotoluene	2.246	1.810	19.4	84	0.00
62		tert-Butylbenzene	2.916	2.512	13.9	86	0.00
63		1,2,4-Trimethylbenzene	2.739	2.702	1.4	99	0.00
64		sec-Butylbenzene	4.078	3.199	21.6	84	0.00
65		p-Isopropyltoluene	3.201	2.524	21.1	83	0.00
66		1,3-Dichlorobenzene	1.495	1.557	-4.1	107	0.00
67		1,4-Dichlorobenzene	1.426	1.468	-2.9	108	0.00
68		n-Butylbenzene	2.601	2.068	20.5	82	0.00
69		1,2-Dichlorobenzene	1.438	1.509	-4.9	112	0.00
70		1,2-Dibromo-3-chloropropane	0.447	0.357	20.1	76	0.00
71		1,2,4-Trichlorobenzene	0.522	0.776	-48.7#	184#	0.00
72		Hexachlorobutadiene	0.750	0.779	-3.9	151#	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY006.D
Acq On : 13 May 2014 12:32 pm
Operator : vm
Sample : CCV
Misc : 50ML, AW1201213
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 13 12:57:02 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	9.192	130	40109	10.00 ppbv	0.00
24) 1,4-Difluorobenzene	10.555	114	183020	10.00 ppbv	0.00
36) Chlorobenzene-d5	15.080	117	127646	10.00 ppbv	0.00
System Monitoring Compounds					
26) 1,2-Dichloroethane-d4	9.963	65	74018	9.07 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 90.70%		
34) Toluene-d8	12.802	98	121061	9.86 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.60%		
53) 4-Bromofluorobenzene	17.053	174	68952	10.46 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.60%		
Target Compounds					Qvalue
2) Dichlorodifluoromethan...	3.459	85	219015	8.18 ppbv	99
3) Chloromethane	3.832	50	59215	8.61 ppbv	99
4) 1,2-Cl-1,1,2,2-F ethan...	3.696	85	205295	8.39 ppbv	85
5) Vinyl Chloride	4.057	62	56302	8.87 ppbv	99
6) Bromomethane	4.741	94	30043	8.76 ppbv	90
7) Chloroethane	4.897	66	10750	10.95 ppbv	83
8) Trichlorofluoromethane...	5.357	101	241875	8.11 ppbv	98
9) 1,1-Dichloroethene	6.254	61	123000	8.44 ppbv	97
10) Carbon Disulfide	6.932	76	175762	8.55 ppbv	99
11) 1,1,2-Cl 1,2,2-F ethan...	6.092	151	119921	8.72 ppbv	87
12) Acetone	5.986	43	162896	9.17 ppbv	93
13) Methylene Chloride	6.876	84	55321	8.57 ppbv	91
14) t-1,2-Dichloroethene	7.380	96	68317	8.85 ppbv	94
15) 1,1-Dichloroethane	7.934	63	136943	8.80 ppbv	98
16) Vinyl Acetate	7.922	43	269671	8.66 ppbv	97
17) c-1,2-Dichloroethene	8.775	96	76965	8.90 ppbv	97
18) 2-Butanone	8.476	72	33740	9.39 ppbv	62
19) t-Butyl Methyl Ether	7.243	73	198629	9.03 ppbv	90
20) Chloroform	9.011	83	163615	8.34 ppbv	98
21) 1,1,1-Trichloroethane	9.621	97	174972	8.26 ppbv	100
22) 1,1-Dichloropropene	9.851	75	98829	8.13 ppbv	89
23) Carbon Tetrachloride	10.007	117	157051	8.08 ppbv	97
25) Benzene	10.188	78	219914	8.53 ppbv	95
27) 1,2-Dichloroethane	10.088	62	131160	8.10 ppbv	96
28) Trichloroethene	11.078	130	110519	8.79 ppbv	80
29) 1,2-Dichloropropane	11.277	63	81521	8.86 ppbv	95
30) Bromodichloromethane	11.588	83	163978	8.33 ppbv	97
31) Dibromomethane	11.632	93	81629	8.66 ppbv	91
32) c-1,3-Dichloropropene	12.366	75	95598	8.65 ppbv	88
33) 4-Methyl-2-Pentanone	12.092	43	191508	8.79 ppbv	91
35) Toluene	12.920	91	251742	9.03 ppbv	99
37) t-1,3-Dichloropropene	13.082	75	81174	8.64 ppbv	93
38) 1,1,2-Trichloroethane	13.325	97	91745	8.55 ppbv	97
39) 1,3-Dichloropropane	13.698	76	108351	8.86 ppbv #	92
40) Tetrachloroethene	13.947	166	134111	9.00 ppbv	95
41) 2-Hexanone	13.362	58	85962	9.73 ppbv	94
42) Dibromochloromethane	14.115	129	146232	8.80 ppbv	99

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY006.D
Acq On : 13 May 2014 12:32 pm
Operator : vm
Sample : CCV
Misc : 50ML, AW1201213
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 13 12:57:02 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

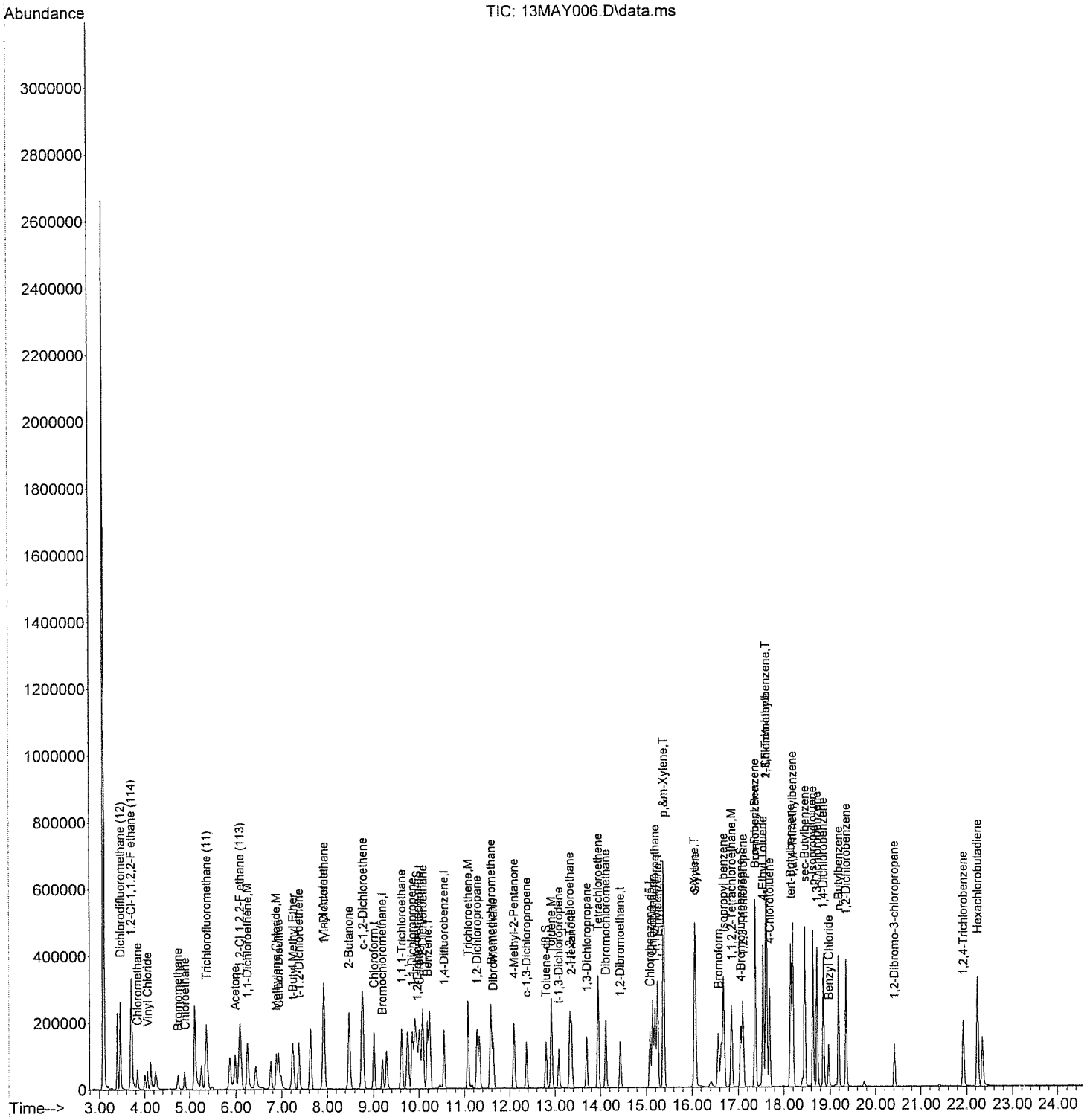
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
43) 1,2-Dibromoethane	14.433	107	128246	8.75 ppbv	99
44) Chlorobenzene	15.136	112	190968	8.98 ppbv	89
45) 1,1,1,2-Tetrachloroethane	15.192	131	93468	8.79 ppbv	93
46) Ethylbenzene	15.248	91	318570	9.46 ppbv	99
47) p,&m-Xylene	15.379	91	557038	19.40 ppbv	99
48) o-Xylene	16.057	91	304276	9.58 ppbv	97
49) Styrene	16.076	104	181852	10.02 ppbv	94
50) Bromoform	16.568	173	109969	9.77 ppbv	95
51) Isopropyl benzene	16.680	105	351578	8.06 ppbv	95
52) 1,1,2,2-Tetrachloroethane	16.854	83	171187	9.22 ppbv	94
54) Benzyl Chloride	18.970	91	107511	9.64 ppbv	91
55) 1,2,3-Trichloropropane	17.103	110	61385	7.55 ppbv #	86
56) n-Propyl Benzene	17.370	91	381879	8.29 ppbv	100
57) Bromobenzene	17.377	77	158075	8.01 ppbv	82
58) 4-Ethyl Toluene	17.545	105	380222	10.28 ppbv	97
59) 1,3,5-Trimethylbenzene	17.619	105	354176	9.53 ppbv	96
60) 2-Chlorotoluene	17.619	91	295721	8.01 ppbv	86
61) 4-Chlorotoluene	17.694	91	231008	8.06 ppbv	87
62) tert-Butylbenzene	18.155	119	320637	8.61 ppbv	89
63) 1,2,4-Trimethylbenzene	18.198	105	344882	9.87 ppbv	93
64) sec-Butylbenzene	18.460	105	408366	7.85 ppbv	96
65) p-Isopropyltoluene	18.640	119	322198	7.89 ppbv	94
66) 1,3-Dichlorobenzene	18.727	146	198788	10.41 ppbv	88
67) 1,4-Dichlorobenzene	18.858	146	187370	10.29 ppbv	95
68) n-Butylbenzene	19.188	91	263958	7.95 ppbv	98
69) 1,2-Dichlorobenzene	19.356	146	192640	10.49 ppbv	92
70) 1,2-Dibromo-3-chloropr...	20.414	157	45568	11.45 ppbv #	83
71) 1,2,4-Trichlorobenzene	21.927	180	99068	14.86 ppbv	87
72) Hexachlorobutadiene	22.244	225	99378	10.38 ppbv	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY006.D
Acq On : 13 May 2014 12:32 pm
Operator : vm
Sample : CCV
Misc : 50ML, AW1201213
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 13 12:57:02 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\140512\
Data File : 14MAY002.D
Acq On : 14 May 2014 9:31 am
Operator : MJ
Sample : CCV
Misc : 50 ML, AW1201213
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 14 09:55:47 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	101	0.00
2		Dichlorodifluoromethane (12	6.676	5.771	13.6	83	0.01
3		Chloromethane	1.715	1.633	4.8	93	0.02
4		1,2-Cl-1,1,2,2-F ethane (11	6.097	5.495	9.9	86	0.01
5		Vinyl Chloride	1.582	1.513	4.4	91	0.01
6		Bromomethane	0.855	0.771	9.8	83	0.01
7		Chloroethane	0.245	0.285	-16.3	93	0.01
8		Trichlorofluoromethane (11)	7.435	6.263	15.8	81	0.00
9	M	1,1-Dichloroethene	3.632	3.314	8.8	89	0.00
10		Carbon Disulfide	5.126	4.702	8.3	88	0.00
11		1,1,2-Cl 1,2,2-F ethane (11	3.427	3.206	6.4	90	0.02
12		Acetone	4.428	4.604	-4.0	101	0.01
13	M	Methylene Chloride	1.608	1.475	8.3	89	0.01
14		t-1,2-Dichloroethene	1.925	1.823	5.3	88	0.00
15		1,1-Dichloroethane	3.880	3.672	5.4	90	0.00
16		Vinyl Acetate	7.764	7.444	4.1	90	0.00
17		c-1,2-Dichloroethene	2.157	2.069	4.1	90	0.00
18		2-Butanone	0.895	0.900	-0.6	94	0.00
19		t-Butyl Methyl Ether	5.485	5.273	3.9	97	0.00
20	t	Chloroform	4.888	4.399	10.0	86	0.00
21		1,1,1-Trichloroethane	5.279	4.576	13.3	83	0.00
22		1,1-Dichloropropene	3.031	2.675	11.7	89	0.00
23	t	Carbon Tetrachloride	4.843	4.045	16.5	80	0.00
24	I	1,4-Difluorobenzene	1.000	1.000	0.0	103	0.00
25	T	Benzene	1.408	1.242	11.8	90	0.00
26	S	1,2-Dichloroethane-d4	0.446	0.402	9.9	92	0.00
27		1,2-Dichloroethane	0.885	0.743	16.0	85	0.00
28	M	Trichloroethene	0.687	0.637	7.3	94	0.00
29		1,2-Dichloropropane	0.503	0.474	5.8	93	0.00
30		Bromodichloromethane	1.076	0.899	16.4	82	0.00
31		Dibromomethane	0.515	0.464	9.9	84	0.00
32		c-1,3-Dichloropropene	0.604	0.545	9.8	92	0.00
33		4-Methyl-2-Pentanone	1.190	1.123	5.6	94	0.00
34	S	Toluene-d8	0.671	0.656	2.2	103	0.00
35	M	Toluene	1.523	1.405	7.7	95	0.00
36	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.00
37		t-1,3-Dichloropropene	0.736	0.665	9.6	90	0.00
38		1,1,2-Trichloroethane	0.841	0.755	10.2	89	0.00
39		1,3-Dichloropropane	0.958	0.905	5.5	88	0.00
40		Tetrachloroethene	1.167	1.115	4.5	95	0.00
41		2-Hexanone	0.692	0.729	-5.3	100	0.00
42		Dibromochloromethane	1.302	1.129	13.3	87	0.00
43	t	1,2-Dibromoethane	1.148	1.059	7.8	90	0.00
44		Chlorobenzene	1.666	1.578	5.3	96	0.00
45		1,1,1,2-Tetrachloroethane	0.834	0.741	11.2	85	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\140512\
Data File : 14MAY002.D
Acq On : 14 May 2014 9:31 am
Operator : MJ
Sample : CCV
Misc : 50 ML, AW1201213
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 14 09:55:47 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
46	T	Ethylbenzene	2.637	2.539	3.7	93	0.00
47	T	p,&m-Xylene	2.249	2.247	0.1	93	0.00
48	T	o-Xylene	2.488	2.499	-0.4	97	0.00
49		Styrene	1.422	1.464	-3.0	97	0.00
50		Bromoform	0.882	0.840	4.8	90	0.00
51		Isopropyl benzene	3.419	2.892	15.4	85	0.00
52	M	1,1,2,2-Tetrachloroethane	1.454	1.446	0.6	101	0.00
53	S	4-Bromofluorobenzene	0.516	0.547	-6.0	104	0.00
54		Benzyl Chloride	0.873	0.835	4.4	99	0.00
55		1,2,3-Trichloropropane	0.637	0.503	21.0	80	0.00
56		n-Propyl Benzene	3.607	3.055	15.3	85	0.00
57		Bromobenzene	1.546	1.266	18.1	84	0.00
58		4-Ethyl Toluene	2.896	3.116	-7.6	102	0.00
59	T	1,3,5-Trimethylbenzene	2.912	2.898	0.5	97	0.00
60		2-Chlorotoluene	2.894	2.398	17.1	85	0.00
61		4-Chlorotoluene	2.246	1.846	17.8	82	0.00
62		tert-Butylbenzene	2.916	2.612	10.4	86	0.00
63		1,2,4-Trimethylbenzene	2.739	2.892	-5.6	102	0.00
64		sec-Butylbenzene	4.078	3.302	19.0	83	0.00
65		p-Isopropyltoluene	3.201	2.577	19.5	81	0.00
66		1,3-Dichlorobenzene	1.495	1.670	-11.7	110	0.00
67		1,4-Dichlorobenzene	1.426	1.589	-11.4	112	0.00
68		n-Butylbenzene	2.601	2.087	19.8	80	0.00
69		1,2-Dichlorobenzene	1.438	1.604	-11.5	114	0.00
70		1,2-Dibromo-3-chloropropane	0.447	0.336	24.8	69	0.00
71		1,2,4-Trichlorobenzene	0.522	0.898	-72.0#	205#	0.00
72		Hexachlorobutadiene	0.750	0.928	-23.7	173#	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY002.D
Acq On : 14 May 2014 9:31 am
Operator : MJ
Sample : CCV
Misc : 50 ML, AW1201213
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 14 09:55:47 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.192	130	37960	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.555	114	177193	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	122775	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.957	65	71143	9.01	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 90.10%			
34) Toluene-d8	12.802	98	116233	9.78	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 97.80%			
53) 4-Bromofluorobenzene	17.053	174	67178	10.60	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.459	85	219075	8.65	ppbv	98
3) Chloromethane	3.839	50	62001	9.52	ppbv	97
4) 1,2-Cl-1,1,2,2-F ethan...	3.696	85	208603	9.01	ppbv	87
5) Vinyl Chloride	4.057	62	57443	9.56	ppbv	95
6) Bromomethane	4.741	94	29250	9.01	ppbv	98
7) Chloroethane	4.891	66	10822	11.64	ppbv	91
8) Trichlorofluoromethane...	5.357	101	237736	8.42	ppbv	98
9) 1,1-Dichloroethene	6.254	61	125788	9.12	ppbv	99
10) Carbon Disulfide	6.932	76	178492	9.17	ppbv	100
11) 1,1,2-Cl 1,2,2-F ethan...	6.098	151	121685	9.35	ppbv	81
12) Acetone	5.992	43	174774	10.40	ppbv	91
13) Methylene Chloride	6.882	84	56006	9.17	ppbv	88
14) t-1,2-Dichloroethene	7.380	96	69185	9.47	ppbv	93
15) 1,1-Dichloroethane	7.934	63	139386	9.46	ppbv	98
16) Vinyl Acetate	7.928	43	282584	9.59	ppbv	98
17) c-1,2-Dichloroethene	8.775	96	78532	9.59	ppbv	95
18) 2-Butanone	8.476	72	34160	10.05	ppbv	66
19) t-Butyl Methyl Ether	7.243	73	200168	9.61	ppbv	88
20) Chloroform	9.011	83	166990	9.00	ppbv	97
21) 1,1,1-Trichloroethane	9.621	97	173709	8.67	ppbv	98
22) 1,1-Dichloropropene	9.851	75	101554	8.83	ppbv	90
23) Carbon Tetrachloride	10.007	117	153548	8.35	ppbv	97
25) Benzene	10.188	78	220130	8.82	ppbv	94
27) 1,2-Dichloroethane	10.088	62	131733	8.40	ppbv	96
28) Trichloroethene	11.078	130	112878	9.27	ppbv	83
29) 1,2-Dichloropropane	11.277	63	84056	9.44	ppbv	98
30) Bromodichloromethane	11.588	83	159327	8.36	ppbv	97
31) Dibromomethane	11.632	93	82205	9.01	ppbv	95
32) c-1,3-Dichloropropene	12.366	75	96625	9.03	ppbv	85
33) 4-Methyl-2-Pentanone	12.092	43	198977	9.43	ppbv	90
35) Toluene	12.920	91	248889	9.22	ppbv	98
37) t-1,3-Dichloropropene	13.082	75	81697	9.04	ppbv	91
38) 1,1,2-Trichloroethane	13.325	97	92742	8.99	ppbv	94
39) 1,3-Dichloropropane	13.698	76	111162	9.45	ppbv #	94
40) Tetrachloroethene	13.947	166	136904	9.56	ppbv	96
41) 2-Hexanone	13.368	58	89559	10.54	ppbv	96
42) Dibromochloromethane	14.115	129	138553	8.67	ppbv	95

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY002.D
Acq On : 14 May 2014 9:31 am
Operator : MJ
Sample : CCV
Misc : 50 ML, AW1201213
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 14 09:55:47 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

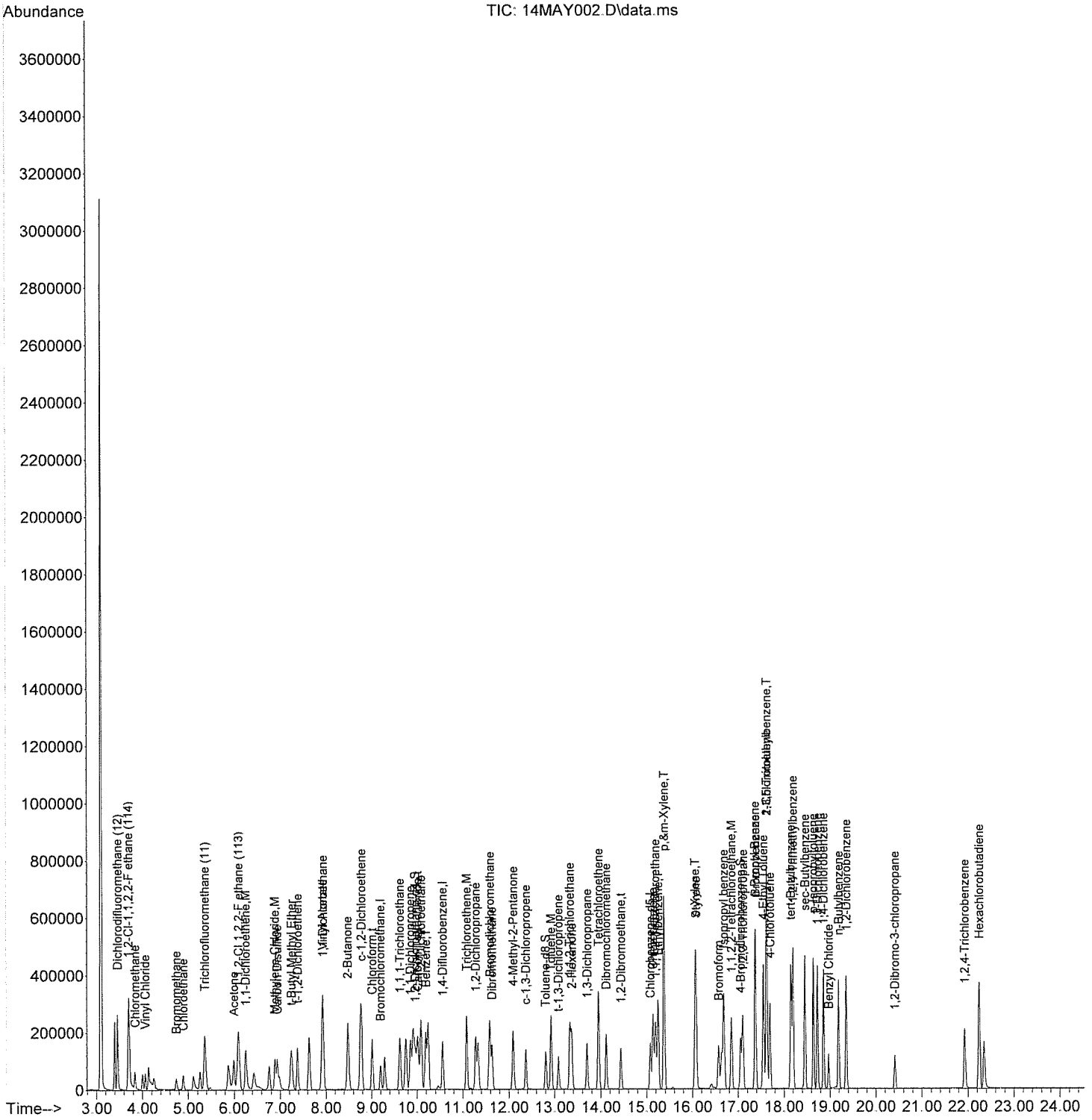
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,2-Dibromoethane	14.439	107	130043	9.23	ppbv	98
44) Chlorobenzene	15.136	112	193688	9.47	ppbv	89
45) 1,1,1,2-Tetrachloroethane	15.186	131	90951	8.89	ppbv	94
46) Ethylbenzene	15.248	91	311696	9.63	ppbv	95
47) p,&m-Xylene	15.379	91	551640	19.98	ppbv	98
48) o-Xylene	16.057	91	306833	10.04	ppbv	97
49) Styrene	16.076	104	179709	10.29	ppbv	93
50) Bromoform	16.568	173	103072	9.52	ppbv	97
51) Isopropyl benzene	16.680	105	355041	8.46	ppbv	94
52) 1,1,2,2-Tetrachloroethane	16.848	83	177559	9.94	ppbv	96
54) Benzyl Chloride	18.970	91	102498	9.56	ppbv	96
55) 1,2,3-Trichloropropane	17.103	110	61773	7.90	ppbv #	80
56) n-Propyl Benzene	17.364	91	375034	8.47	ppbv	98
57) Bromobenzene	17.377	77	155454	8.19	ppbv	82
58) 4-Ethyl Toluene	17.545	105	382581	10.76	ppbv	97
59) 1,3,5-Trimethylbenzene	17.619	105	355783	9.95	ppbv	94
60) 2-Chlorotoluene	17.619	91	294446	8.29	ppbv	87
61) 4-Chlorotoluene	17.694	91	226672	8.22	ppbv	87
62) tert-Butylbenzene	18.149	119	320730	8.96	ppbv	88
63) 1,2,4-Trimethylbenzene	18.198	105	355118	10.56	ppbv	92
64) sec-Butylbenzene	18.460	105	405424	8.10	ppbv	96
65) p-Isopropyltoluene	18.640	119	316392	8.05	ppbv	92
66) 1,3-Dichlorobenzene	18.734	146	205075	11.17	ppbv	88
67) 1,4-Dichlorobenzene	18.858	146	195070	11.14	ppbv	94
68) n-Butylbenzene	19.188	91	256227	8.02	ppbv	98
69) 1,2-Dichlorobenzene	19.356	146	196894	11.15	ppbv	92
70) 1,2-Dibromo-3-chloropr...	20.414	157	41281	10.78	ppbv #	81
71) 1,2,4-Trichlorobenzene	21.927	180	110242	17.19	ppbv	91
72) Hexachlorobutadiene	22.244	225	113874	12.36	ppbv	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY002.D
Acq On : 14 May 2014 9:31 am
Operator : MJ
Sample : CCV
Misc : 50 ML, AW1201213
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 14 09:55:47 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY002.D
Acq On : 15 May 2014 7:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML, AW1201213
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 07:56:41 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	101	0.00
2		Dichlorodifluoromethane (12	6.676	5.726	14.2	82	0.02
3		Chloromethane	1.715	1.598	6.8	91	0.02
4		1,2-Cl-1,1,2,2-F ethane (11	6.097	5.469	10.3	85	0.02
5		Vinyl Chloride	1.582	1.472	7.0	89	0.02
6		Bromomethane	0.855	0.801	6.3	86	0.02
7		Chloroethane	0.245	0.230	6.1	75	0.02
8		Trichlorofluoromethane (11)	7.435	6.429	13.5	83	0.01
9	M	1,1-Dichloroethene	3.632	3.360	7.5	90	0.01
10		Carbon Disulfide	5.126	4.745	7.4	89	0.01
11		1,1,2-Cl 1,2,2-F ethane (11	3.427	3.128	8.7	88	0.02
12		Acetone	4.428	4.100	7.4	90	0.01
13	M	Methylene Chloride	1.608	1.499	6.8	90	0.01
14		t-1,2-Dichloroethene	1.925	1.860	3.4	90	0.00
15		1,1-Dichloroethane	3.880	3.695	4.8	91	0.00
16		Vinyl Acetate	7.764	7.304	5.9	88	0.00
17		c-1,2-Dichloroethene	2.157	2.094	2.9	91	0.01
18		2-Butanone	0.895	0.877	2.0	91	0.00
19		t-Butyl Methyl Ether	5.485	5.474	0.2	100	0.00
20	t	Chloroform	4.888	4.366	10.7	85	0.00
21		1,1,1-Trichloroethane	5.279	4.737	10.3	86	0.00
22		1,1-Dichloropropene	3.031	2.683	11.5	89	0.00
23	t	Carbon Tetrachloride	4.843	4.133	14.7	82	0.00
24	I	1,4-Difluorobenzene	1.000	1.000	0.0	100	0.00
25	T	Benzene	1.408	1.297	7.9	91	0.00
26	S	1,2-Dichloroethane-d4	0.446	0.399	10.5	89	0.00
27		1,2-Dichloroethane	0.885	0.783	11.5	87	0.00
28	M	Trichloroethene	0.687	0.647	5.8	93	0.00
29		1,2-Dichloropropane	0.503	0.480	4.6	91	0.00
30		Bromodichloromethane	1.076	0.942	12.5	84	0.00
31		Dibromomethane	0.515	0.488	5.2	85	0.00
32		c-1,3-Dichloropropene	0.604	0.563	6.8	92	0.00
33		4-Methyl-2-Pentanone	1.190	1.149	3.4	93	0.00
34	S	Toluene-d8	0.671	0.657	2.1	100	0.00
35	M	Toluene	1.523	1.436	5.7	94	0.00
36	I	Chlorobenzene-d5	1.000	1.000	0.0	99	0.00
37		t-1,3-Dichloropropene	0.736	0.692	6.0	92	0.00
38		1,1,2-Trichloroethane	0.841	0.771	8.3	89	0.00
39		1,3-Dichloropropane	0.958	0.908	5.2	87	0.00
40		Tetrachloroethene	1.167	1.138	2.5	95	0.00
41		2-Hexanone	0.692	0.729	-5.3	98	0.00
42		Dibromochloromethane	1.302	1.154	11.4	87	0.00
43	t	1,2-Dibromoethane	1.148	1.078	6.1	90	0.00
44		Chlorobenzene	1.666	1.600	4.0	96	0.00
45		1,1,1,2-Tetrachloroethane	0.834	0.766	8.2	86	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY002.D
Acq On : 15 May 2014 7:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML, AW1201213
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 07:56:41 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
46	T	Ethylbenzene	2.637	2.660	-0.9	95	0.00
47	T	p,&m-Xylene	2.249	2.323	-3.3	94	0.00
48	T	o-Xylene	2.488	2.578	-3.6	98	0.00
49		Styrene	1.422	1.491	-4.9	97	0.00
50		Bromoform	0.882	0.850	3.6	90	0.00
51		Isopropyl benzene	3.419	2.984	12.7	86	0.00
52	M	1,1,2,2-Tetrachloroethane	1.454	1.446	0.6	99	0.00
53	S	4-Bromofluorobenzene	0.516	0.541	-4.8	101	0.00
54		Benzyl Chloride	0.873	0.945	-8.2	110	0.00
55		1,2,3-Trichloropropane	0.637	0.523	17.9	82	0.00
56		n-Propyl Benzene	3.607	3.134	13.1	86	0.00
57		Bromobenzene	1.546	1.304	15.7	86	0.00
58		4-Ethyl Toluene	2.896	3.214	-11.0	103	0.00
59	T	1,3,5-Trimethylbenzene	2.912	2.995	-2.9	99	0.00
60		2-Chlorotoluene	2.894	2.451	15.3	85	0.00
61		4-Chlorotoluene	2.246	1.910	15.0	84	0.00
62		tert-Butylbenzene	2.916	2.660	8.8	86	0.00
63		1,2,4-Trimethylbenzene	2.739	2.922	-6.7	102	0.00
64		sec-Butylbenzene	4.078	3.381	17.1	84	0.00
65		p-Isopropyltoluene	3.201	2.581	19.4	80	0.00
66		1,3-Dichlorobenzene	1.495	1.658	-10.9	107	0.00
67		1,4-Dichlorobenzene	1.426	1.631	-14.4	113	0.00
68		n-Butylbenzene	2.601	2.117	18.6	80	0.00
69		1,2-Dichlorobenzene	1.438	1.615	-12.3	113	0.00
70		1,2-Dibromo-3-chloropropane	0.447	0.342	23.5	69	0.00
71		1,2,4-Trichlorobenzene	0.522	0.891	-70.7#	200#	0.00
72		Hexachlorobutadiene	0.750	0.916	-22.1	168#	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY002.D
Acq On : 15 May 2014 7:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML, AW1201213
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 07:56:41 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.198	130	37924	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.555	114	172089	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	120697	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.964	65	68706	8.95	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 89.50%			
34) Toluene-d8	12.808	98	113015	9.79	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 97.90%			
53) 4-Bromofluorobenzene	17.053	174	65292	10.48	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.465	85	217165	8.58	ppbv	100
3) Chloromethane	3.839	50	60609	9.32	ppbv	98
4) 1,2-Cl-1,1,2,2-F ethan...	3.702	85	207417	8.97	ppbv	86
5) Vinyl Chloride	4.063	62	55842	9.31	ppbv	95
6) Bromomethane	4.748	94	30360	9.36	ppbv	98
7) Chloroethane	4.897	66	8713	9.38	ppbv	87
8) Trichlorofluoromethane...	5.364	101	243832	8.65	ppbv	97
9) 1,1-Dichloroethene	6.260	61	127420	9.25	ppbv	98
10) Carbon Disulfide	6.939	76	179934	9.26	ppbv	100
11) 1,1,2-Cl 1,2,2-F ethan...	6.098	151	118635	9.13	ppbv	85
12) Acetone	5.992	43	155491	9.26	ppbv	92
13) Methylene Chloride	6.883	84	56861	9.32	ppbv	89
14) t-1,2-Dichloroethene	7.380	96	70556	9.67	ppbv	93
15) 1,1-Dichloroethane	7.934	63	140141	9.52	ppbv	97
16) Vinyl Acetate	7.928	43	277012	9.41	ppbv	97
17) c-1,2-Dichloroethene	8.781	96	79417	9.71	ppbv	95
18) 2-Butanone	8.482	72	33243	9.79	ppbv	67
19) t-Butyl Methyl Ether	7.244	73	207578	9.98	ppbv	88
20) Chloroform	9.011	83	165567	8.93	ppbv	96
21) 1,1,1-Trichloroethane	9.621	97	179630	8.97	ppbv	96
22) 1,1-Dichloropropene	9.852	75	101761	8.85	ppbv	91
23) Carbon Tetrachloride	10.013	117	156758	8.53	ppbv	96
25) Benzene	10.188	78	223192	9.21	ppbv	93
27) 1,2-Dichloroethane	10.088	62	134769	8.85	ppbv	94
28) Trichloroethene	11.078	130	111335	9.41	ppbv	84
29) 1,2-Dichloropropane	11.283	63	82623	9.55	ppbv	95
30) Bromodichloromethane	11.588	83	162066	8.76	ppbv	98
31) Dibromomethane	11.632	93	83896	9.47	ppbv	93
32) c-1,3-Dichloropropene	12.366	75	96844	9.32	ppbv	90
33) 4-Methyl-2-Pentanone	12.092	43	197816	9.66	ppbv	89
35) Toluene	12.920	91	247184	9.43	ppbv	98
37) t-1,3-Dichloropropene	13.082	75	83507	9.40	ppbv	92
38) 1,1,2-Trichloroethane	13.325	97	93072	9.17	ppbv	94
39) 1,3-Dichloropropane	13.698	76	109620	9.48	ppbv #	91
40) Tetrachloroethene	13.953	166	137311	9.75	ppbv	96
41) 2-Hexanone	13.368	58	87962	10.53	ppbv	85
42) Dibromochloromethane	14.115	129	139329	8.86	ppbv	97

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY002.D
Acq On : 15 May 2014 7:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML, AW1201213
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 07:56:41 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

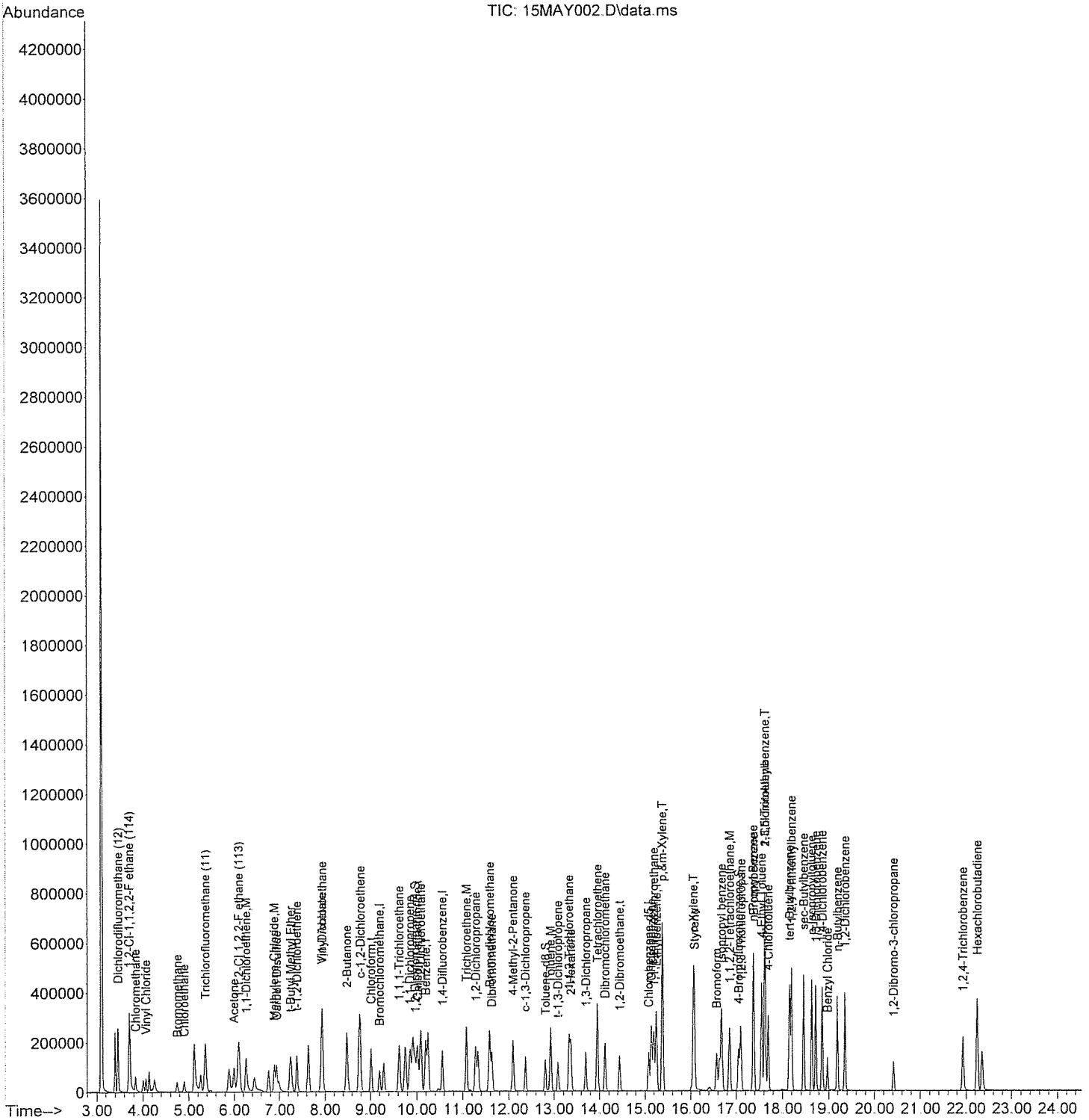
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
43) 1,2-Dibromoethane	14.439	107	130170	9.40 ppbv	98
44) Chlorobenzene	15.136	112	193059	9.60 ppbv	91
45) 1,1,1,2-Tetrachloroethane	15.192	131	92403	9.19 ppbv	96
46) Ethylbenzene	15.248	91	321057	10.09 ppbv	97
47) p,&m-Xylene	15.373	91	560802	20.66 ppbv	100
48) o-Xylene	16.057	91	311184	10.36 ppbv	97
49) Styrene	16.082	104	179988	10.48 ppbv	93
50) Bromoform	16.568	173	102585	9.64 ppbv	97
51) Isopropyl benzene	16.680	105	360200	8.73 ppbv	96
52) 1,1,2,2-Tetrachloroethane	16.854	83	174522	9.94 ppbv	96
54) Benzyl Chloride	18.970	91	114015	10.82 ppbv	92
55) 1,2,3-Trichloropropane	17.103	110	63123	8.21 ppbv #	75
56) n-Propyl Benzene	17.364	91	378290	8.69 ppbv	99
57) Bromobenzene	17.377	77	157381	8.44 ppbv	83
58) 4-Ethyl Toluene	17.545	105	387874	11.10 ppbv	97
59) 1,3,5-Trimethylbenzene	17.620	105	361539	10.29 ppbv	95
60) 2-Chlorotoluene	17.620	91	295785	8.47 ppbv	88
61) 4-Chlorotoluene	17.694	91	230583	8.51 ppbv	88
62) tert-Butylbenzene	18.155	119	321075	9.12 ppbv	90
63) 1,2,4-Trimethylbenzene	18.198	105	352633	10.67 ppbv	93
64) sec-Butylbenzene	18.460	105	408076	8.29 ppbv	96
65) p-Isopropyltoluene	18.640	119	311532	8.06 ppbv	91
66) 1,3-Dichlorobenzene	18.734	146	200112	11.09 ppbv	87
67) 1,4-Dichlorobenzene	18.858	146	196885	11.44 ppbv	93
68) n-Butylbenzene	19.188	91	255463	8.14 ppbv	98
69) 1,2-Dichlorobenzene	19.356	146	194969	11.23 ppbv	92
70) 1,2-Dibromo-3-chloropr...	20.414	157	41266	10.96 ppbv #	85
71) 1,2,4-Trichlorobenzene	21.927	180	107507	17.05 ppbv	92
72) Hexachlorobutadiene	22.244	225	110544	12.21 ppbv	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY002.D
Acq On : 15 May 2014 7:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML, AW1201213
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 07:56:41 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



5. Tune Summaries

a. ICAL Summary
b. CCAL Tune Summary

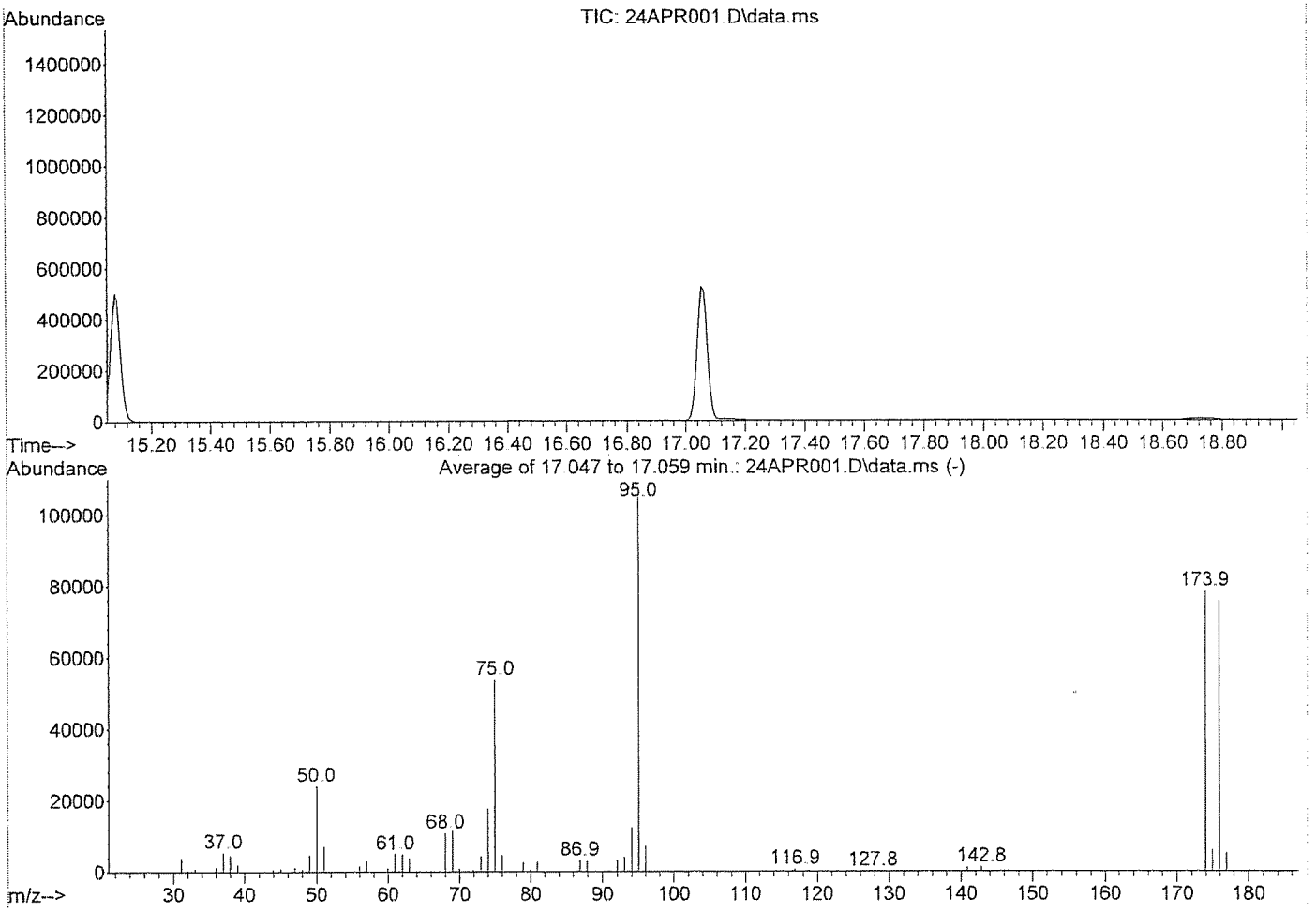
Criteria as listed in report

BFB (TO-14/15 Criteria)

Data Path : C:\msdchem\1\data\140421\
Data File : 24APR001.D
Acq On : 24 Apr 2014 1:47 pm
Operator : DT
Sample : BFB
Misc : 150ML
ALS Vial : 11 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\TO140424.M
Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
Last Update : Fri Apr 25 11:30:04 2014



AutoFind: Scans 2292, 2293, 2294; Background Corrected with Scan 2284

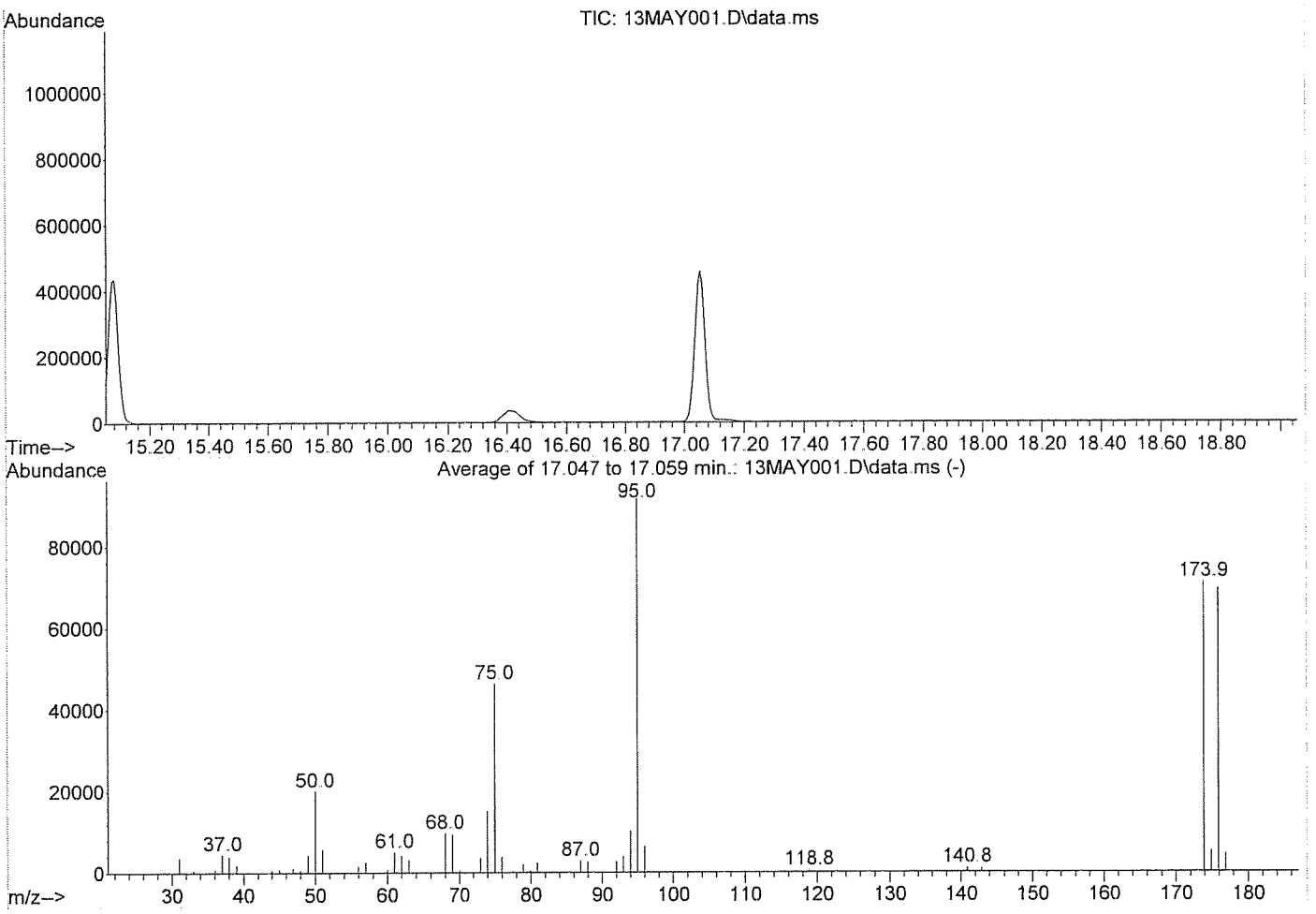
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.0	24139	PASS
75	95	30	60	51.3	53795	PASS
95	95	100	100	100.0	104773	PASS
96	95	5	9	6.9	7238	PASS
173	174	0.00	2	0.5	413	PASS
174	95	50	100	74.8	78419	PASS
175	174	5	9	7.7	6019	PASS
176	174	95	101	96.4	75603	PASS
177	176	5	9	6.6	5018	PASS

BFB (TO-14/15 Criteria)

Data Path : C:\msdchem\1\data\140512\
Data File : 13MAY001.D
Acq On : 13 May 2014 7:29 am
Operator : MJ
Sample : BFB
Misc : 150 ML
ALS Vial : 3 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\TO140424.M
Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
Last Update : Fri Apr 25 11:30:04 2014



AutoFind: Scans 2292, 2293, 2294; Background Corrected with Scan 2283

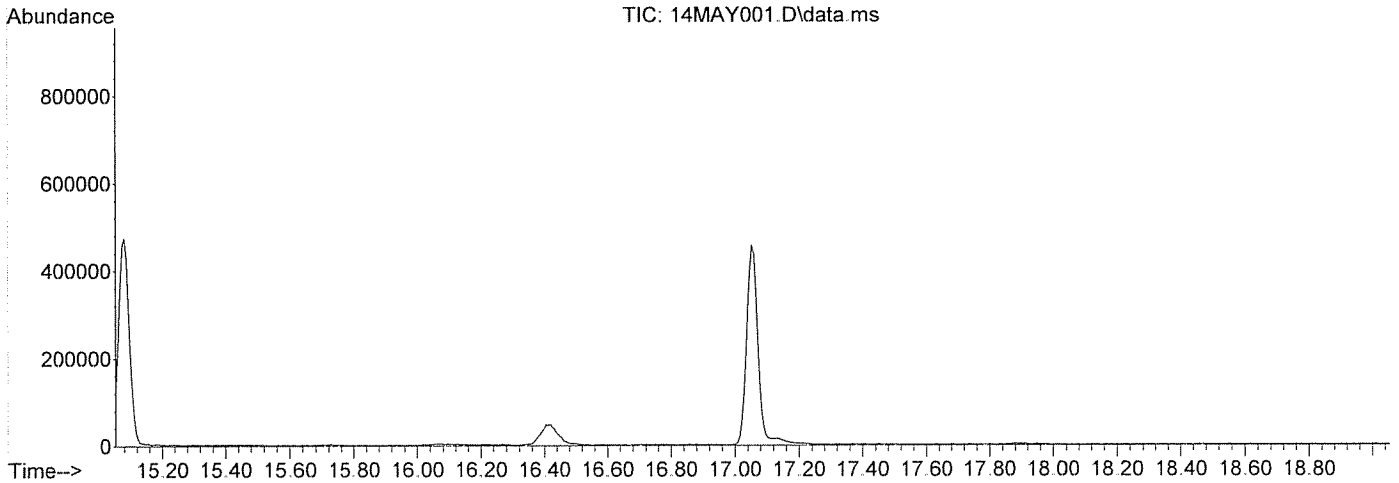
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.8	20013	PASS
75	95	30	60	50.5	46269	PASS
95	95	100	100	100.0	91629	PASS
96	95	5	9	6.9	6319	PASS
173	174	0.00	2	0.6	401	PASS
174	95	50	100	77.5	70981	PASS
175	174	5	9	7.2	5113	PASS
176	174	95	101	97.8	69427	PASS
177	176	5	9	6.3	4367	PASS

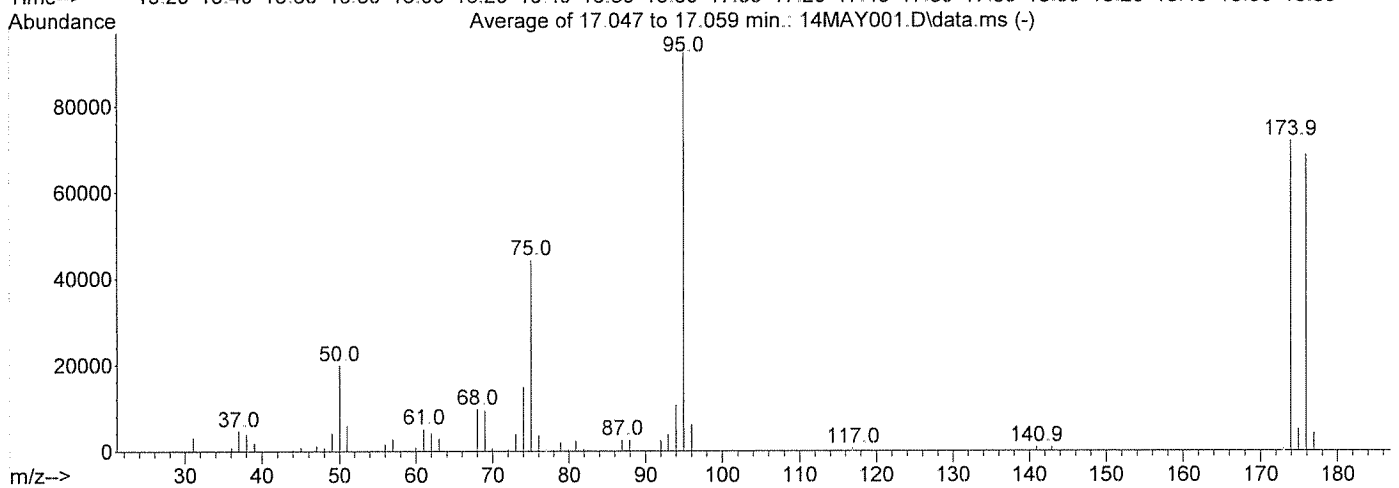
BFB (TO-14/15 Criteria)

Data Path : C:\msdchem\1\data\140512\
Data File : 14MAY001.D
Acq On : 14 May 2014 8:39 am
Operator : MJ
Sample : BFB
Misc : 150 ML
ALS Vial : 3 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\TO140424.M
Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
Last Update : Fri Apr 25 11:30:04 2014





AutoFind: Scans 2292, 2293, 2294; Background Corrected with Scan 2283

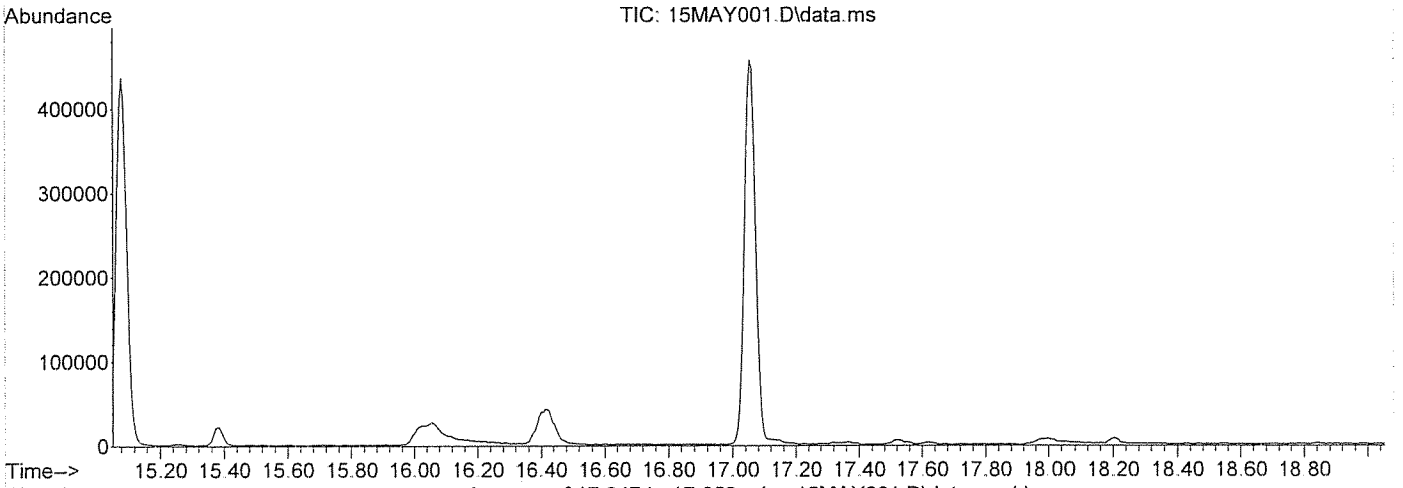
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.5	19901	PASS
75	95	30	60	47.9	44277	PASS
95	95	100	100	100.0	92384	PASS
96	95	5	9	6.6	6113	PASS
173	174	0.00	2	0.8	561	PASS
174	95	50	100	77.7	71819	PASS
175	174	5	9	7.1	5067	PASS
176	174	95	101	95.4	68523	PASS
177	176	5	9	5.9	4055	PASS

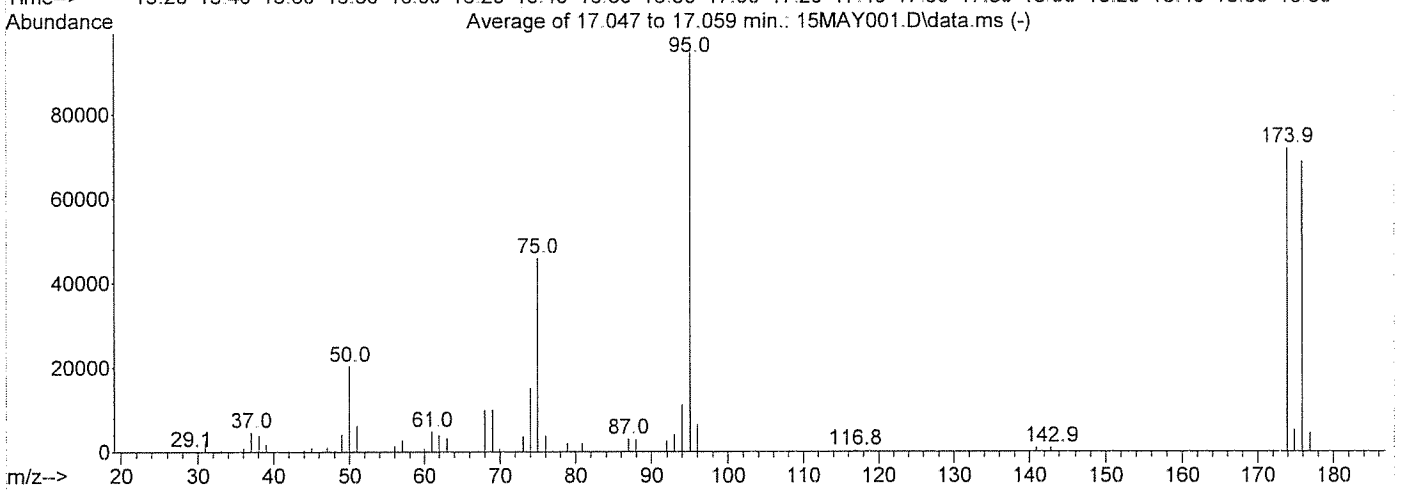
BFB (TO-14/15 Criteria)

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY001.D
Acq On : 15 May 2014 6:54 am
Operator : MJ
Sample : BFB
Misc : 150 ML
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\TO140424.M
Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
Last Update : Fri Apr 25 11:30:04 2014





AutoFind: Scans 2292, 2293, 2294; Background Corrected with Scan 2283

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.5	20325	PASS
75	95	30	60	48.6	45907	PASS
95	95	100	100	100.0	94453	PASS
96	95	5	9	6.9	6479	PASS
173	174	0.00	2	0.5	358	PASS
174	95	50	100	76.1	71861	PASS
175	174	5	9	7.1	5092	PASS
176	174	95	101	95.7	68736	PASS
177	176	5	9	6.4	4429	PASS

6. Method Blank

a. Results/Chromatograms

Method Blank Criteria:

All compounds < Reporting Limit

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY006.D
Acq On : 14 May 2014 12:51 pm
Operator : VM
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 2 Sample Multiplier: 0.2

Quant Time: May 14 13:16:31 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

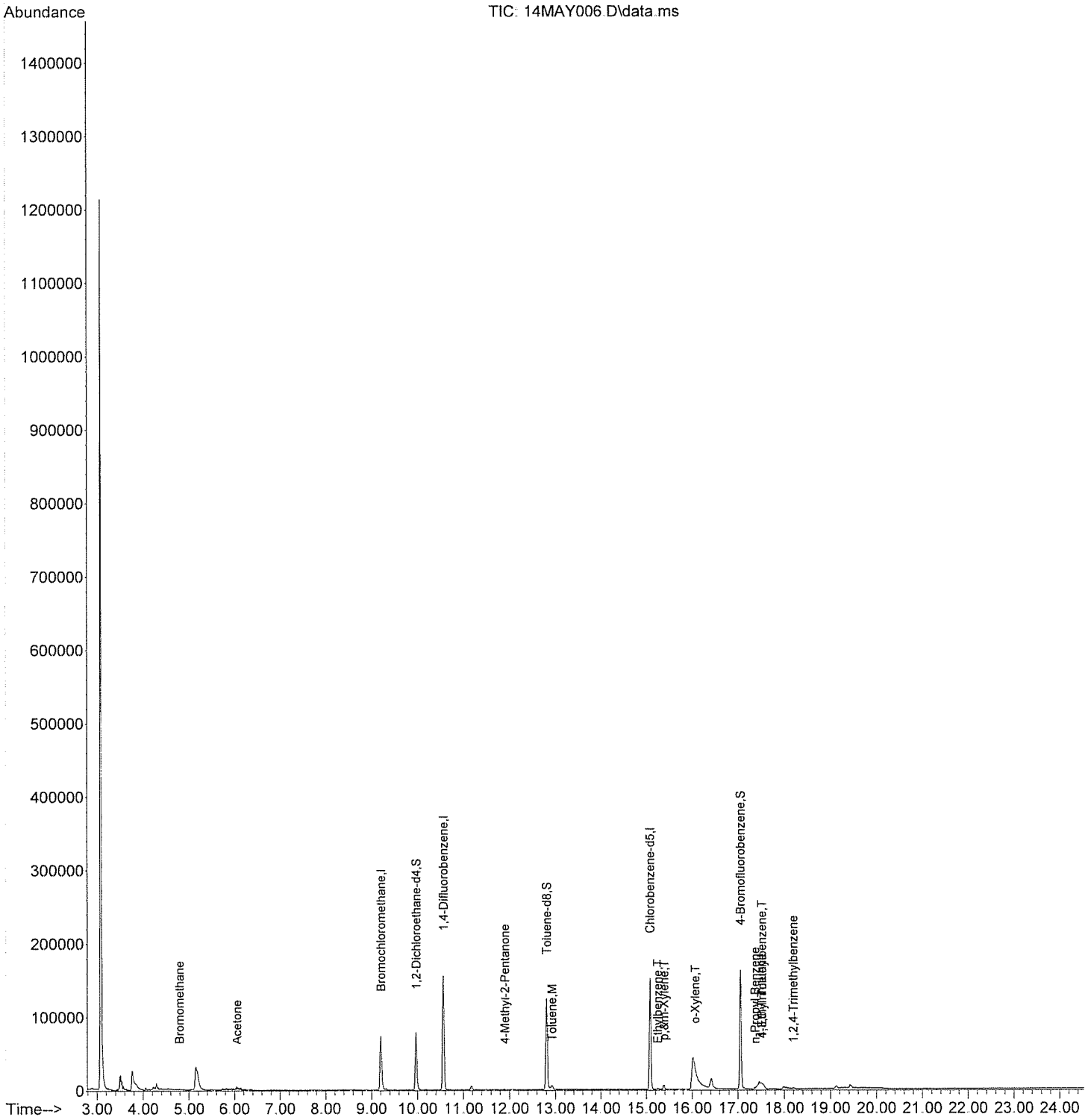
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.204	130	37441	10.00	ppbv	0.01
24) 1,4-Difluorobenzene	10.561	114	172421	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	122796	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.970	65	67359	8.76	ppbv	0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 87.60%			
34) Toluene-d8	12.808	98	116203	10.05	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.50%			
53) 4-Bromofluorobenzene	17.053	174	65888	10.39	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 103.90%			
Target Compounds						Qvalue
6) Bromomethane	4.791	94	893	0.28	ppbv	85
12) Acetone	6.055	43	4142	0.25	ppbv #	45
33) 4-Methyl-2-Pentanone	11.899	43	430	0.02	ppbv	44
35) Toluene	12.926	91	7582	0.29	ppbv	83
46) Ethylbenzene	15.242	91	2300	0.07	ppbv	45
47) p,&m-Xylene	15.385	91	7722	0.28	ppbv	95
48) o-Xylene	16.063	91	2737	0.09	ppbv	40
56) n-Propyl Benzene	17.371	91	1150	0.03	ppbv #	53
58) 4-Ethyl Toluene	17.514	105	2434	0.07	ppbv	52
59) 1,3,5-Trimethylbenzene	17.514	105	2434	0.07	ppbv	39
63) 1,2,4-Trimethylbenzene	18.192	105	2179	0.06	ppbv	42

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY006.D
Acq On : 14 May 2014 12:51 pm
Operator : VM
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 2 Sample Multiplier: 0.2

Quant Time: May 14 13:16:31 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY011.D
Acq On : 13 May 2014 4:47 pm
Operator : vm
Sample : METHOD BLANK
Misc : 250ML
ALS Vial : 1 Sample Multiplier: 0.2

Quant Time: May 13 17:11:45 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

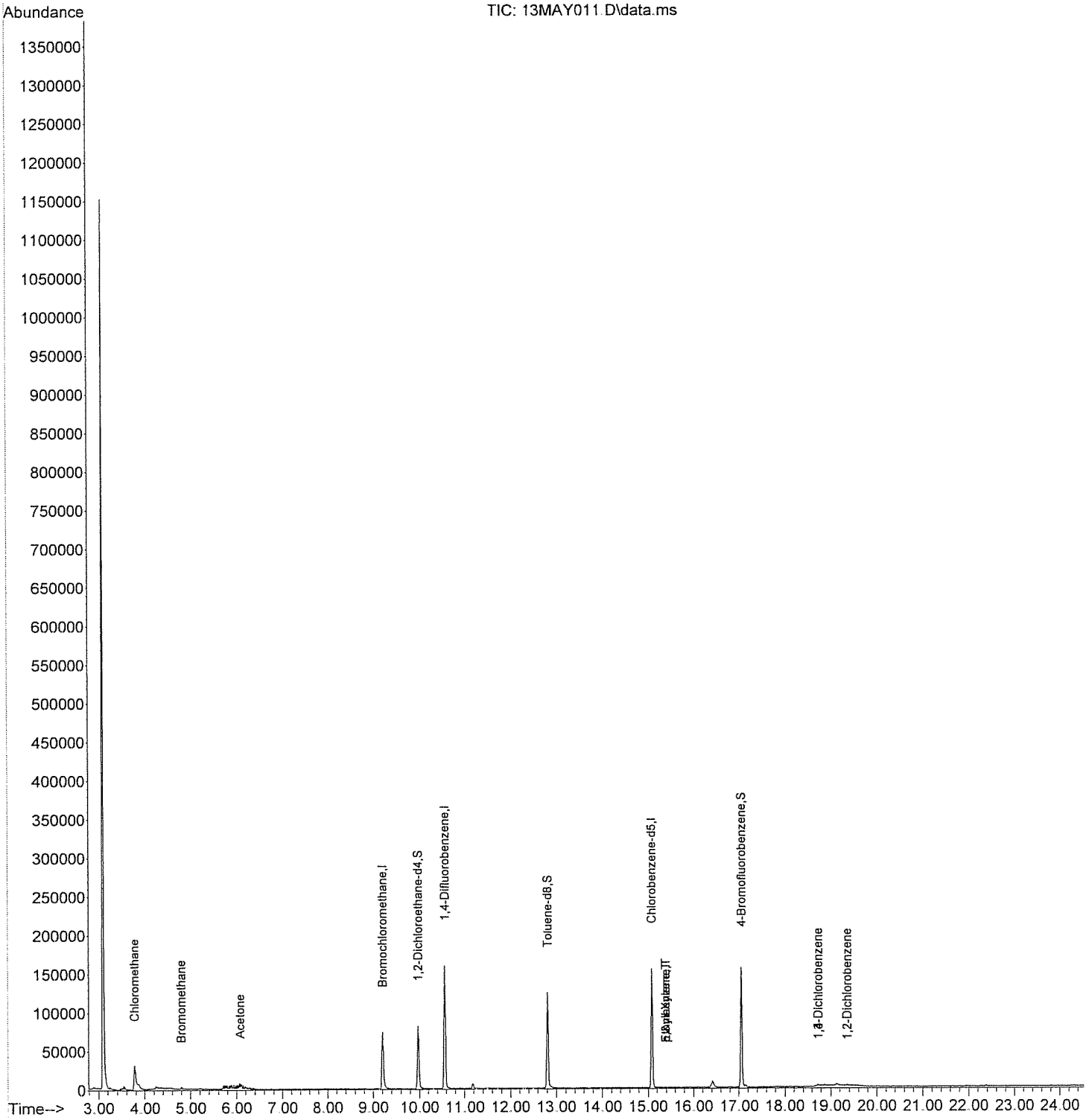
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	9.204	130	38072	10.00 ppbv	0.01
24) 1,4-Difluorobenzene	10.561	114	175673	10.00 ppbv	0.00
36) Chlorobenzene-d5	15.080	117	124385	10.00 ppbv	0.00
System Monitoring Compounds					
26) 1,2-Dichloroethane-d4	9.970	65	69719	8.90 ppbv	0.01
Spiked Amount 10.000	Range 70 - 130		Recovery	= 89.00%	
34) Toluene-d8	12.808	98	113509	9.64 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery	= 96.40%	
53) 4-Bromofluorobenzene	17.059	174	61846	9.63 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery	= 96.30%	
Target Compounds					Qvalue
3) Chloromethane	3.770	50	775	0.12 ppbv #	44
6) Bromomethane	4.791	94	1770	0.54 ppbv	76
12) Acetone	6.073	43	4414	0.26 ppbv	91
46) Ethylbenzene	15.385	91	1275	0.04 ppbv	45
47) p,&m-Xylene	15.385	91	1275	0.05 ppbv	38
66) 1,3-Dichlorobenzene	18.734	146	1154	0.06 ppbv #	52
67) 1,4-Dichlorobenzene	18.734	146	1154	0.07 ppbv	58
69) 1,2-Dichlorobenzene	19.350	146	1107	0.06 ppbv #	26

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY011.D
Acq On : 13 May 2014 4:47 pm
Operator : vm
Sample : METHOD BLANK
Misc : 250ML
ALS Vial : 1 Sample Multiplier: 0.2

Quant Time: May 13 17:11:45 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 15MAY005.D
Acq On : 15 May 2014 9:32 am
Operator : MJ
Sample : Method Blank
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 0.2

Quant Time: May 15 09:57:01 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

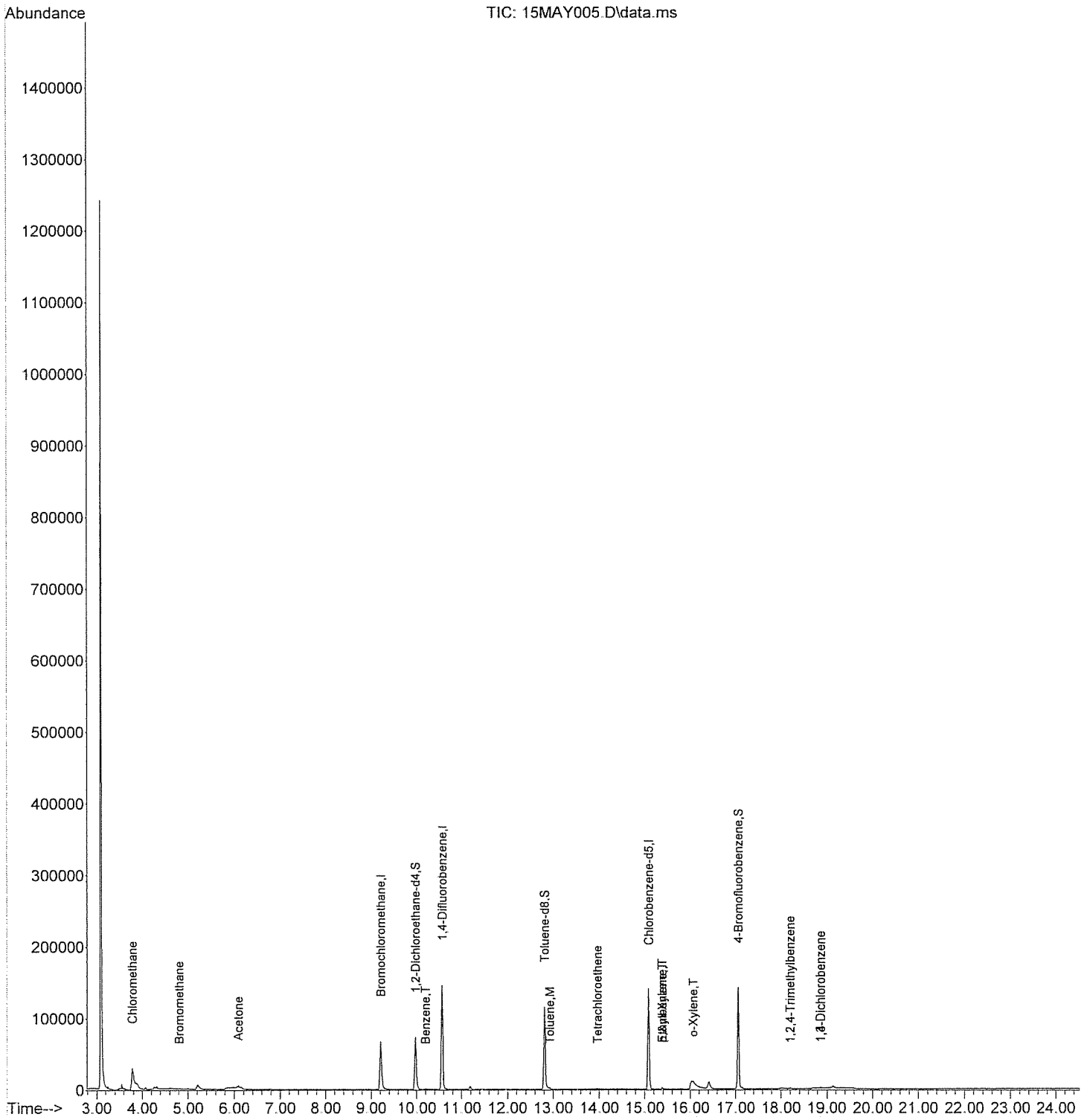
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.210	130	34142	10.00	ppbv	0.02
24) 1,4-Difluorobenzene	10.567	114	161651	10.00	ppbv	0.01
36) Chlorobenzene-d5	15.086	117	113993	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.976	65	64496	8.95	ppbv	0.02
Spiked Amount 10.000	Range 70 - 130		Recovery	=	89.50%	
34) Toluene-d8	12.808	98	103307	9.53	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery	=	95.30%	
53) 4-Bromofluorobenzene	17.059	174	58335	9.91	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery	=	99.10%	
Target Compounds						Qvalue
3) Chloromethane	3.776	50	592	0.10	ppbv #	44
6) Bromomethane	4.810	94	616	0.21	ppbv #	10
12) Acetone	6.086	43	4319	0.29	ppbv	92
25) Benzene	10.194	78	1801	0.08	ppbv	59
35) Toluene	12.926	91	1973	0.08	ppbv	84
40) Tetrachloroethene	13.960	166	435	0.03	ppbv #	31
46) Ethylbenzene	15.379	91	2586	0.09	ppbv	61
47) p,&m-Xylene	15.379	91	2586	0.10	ppbv	82
48) o-Xylene	16.063	91	1221	0.04	ppbv	40
63) 1,2,4-Trimethylbenzene	18.198	105	2049	0.07	ppbv	74
66) 1,3-Dichlorobenzene	18.858	146	614	0.04	ppbv #	34
67) 1,4-Dichlorobenzene	18.858	146	614	0.04	ppbv #	31

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 15MAY005.D
Acq On : 15 May 2014 9:32 am
Operator : MJ
Sample : Method Blank
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 0.2

Quant Time: May 15 09:57:01 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



7. LCS/LCSD

a. Results/Chromatograms

Criteria as listed on report

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY003.D
Acq On : 14 May 2014 10:20 am
Operator : VM
Sample : LCS
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 14 10:45:31 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.192	130	36307	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.555	114	168014	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	120424	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.964	65	68357	9.13	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 91.30%			
34) Toluene-d8	12.808	98	110586	9.82	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.20%			
53) 4-Bromofluorobenzene	17.053	174	64292	10.34	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 103.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.459	85	216991	8.95	ppbv	98
3) Chloromethane	3.833	50	61009	9.80	ppbv	96
4) 1,2-Cl-1,1,2,2-F ethan...	3.696	85	205882	9.30	ppbv	86
5) Vinyl Chloride	4.057	62	56246	9.79	ppbv	96
6) Bromomethane	4.735	94	28559	9.20	ppbv	92
7) Chloroethane	4.891	66	9931	11.17	ppbv	96
8) Trichlorofluoromethane...	5.358	101	239032	8.85	ppbv	97
9) 1,1-Dichloroethene	6.254	61	124555	9.45	ppbv	97
10) Carbon Disulfide	6.932	76	154894	8.32	ppbv	99
11) 1,1,2-Cl 1,2,2-F ethan...	6.092	151	121752	9.78	ppbv	87
12) Acetone	5.992	43	157594	9.80	ppbv	92
13) Methylene Chloride	6.883	84	56169	9.62	ppbv	86
14) t-1,2-Dichloroethene	7.374	96	64445	9.22	ppbv	96
15) 1,1-Dichloroethane	7.934	63	137909	9.79	ppbv	98
16) Vinyl Acetate	7.928	43	224621	7.97	ppbv	96
17) c-1,2-Dichloroethene	8.775	96	75184	9.60	ppbv	93
18) 2-Butanone	8.482	72	32577	10.02	ppbv	72
19) t-Butyl Methyl Ether	7.244	73	191461	9.61	ppbv	88
20) Chloroform	9.011	83	163775	9.23	ppbv	98
21) 1,1,1-Trichloroethane	9.621	97	172708	9.01	ppbv	98
22) 1,1-Dichloropropene	9.852	75	98702	8.97	ppbv	92
23) Carbon Tetrachloride	10.007	117	154759	8.80	ppbv	97
25) Benzene	10.188	78	218169	9.22	ppbv	95
27) 1,2-Dichloroethane	10.088	62	129323	8.70	ppbv	97
28) Trichloroethene	11.078	130	108978	9.44	ppbv	85
29) 1,2-Dichloropropane	11.277	63	81057	9.60	ppbv	98
30) Bromodichloromethane	11.588	83	156361	8.65	ppbv	98
31) Dibromomethane	11.632	93	82041	9.48	ppbv	90
32) c-1,3-Dichloropropene	12.366	75	95502	9.41	ppbv	89
33) 4-Methyl-2-Pentanone	12.092	43	186412	9.32	ppbv	88
35) Toluene	12.920	91	239574	9.36	ppbv	98
37) t-1,3-Dichloropropene	13.082	75	71454	8.06	ppbv	94
38) 1,1,2-Trichloroethane	13.325	97	93142	9.20	ppbv	97
39) 1,3-Dichloropropane	13.698	76	109059	9.45	ppbv #	92
40) Tetrachloroethene	13.947	166	131661	9.37	ppbv	95
41) 2-Hexanone	13.368	58	83115	9.97	ppbv	96
42) Dibromochloromethane	14.115	129	140007	8.93	ppbv	92

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY003.D
Acq On : 14 May 2014 10:20 am
Operator : VM
Sample : LCS
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 14 10:45:31 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

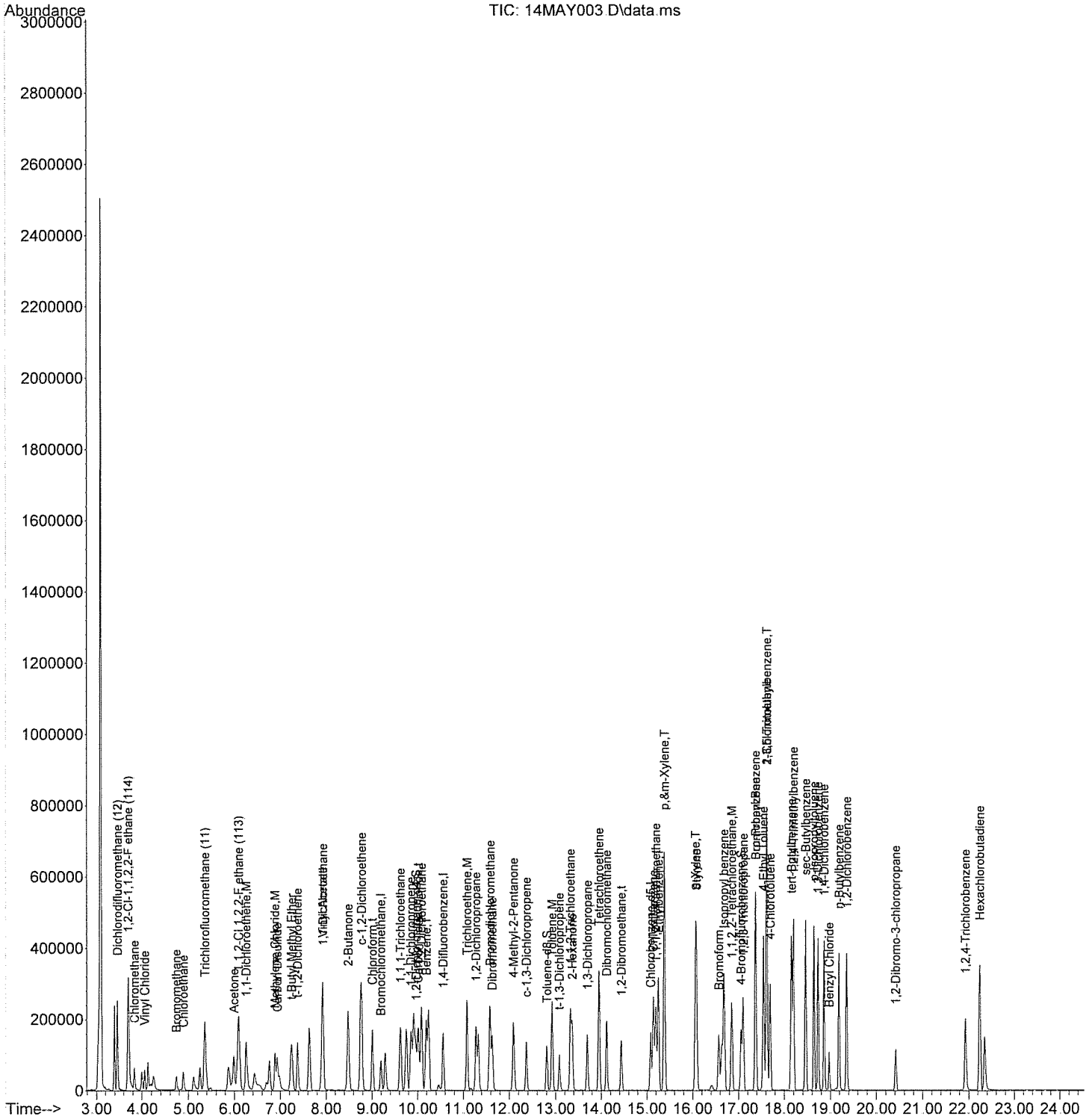
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,2-Dibromoethane	14.439	107	129480	9.37	ppbv	99
44) Chlorobenzene	15.136	112	191401	9.54	ppbv	92
45) 1,1,1,2-Tetrachloroethane	15.192	131	90567	9.02	ppbv	94
46) Ethylbenzene	15.248	91	317284	9.99	ppbv	96
47) p,&m-Xylene	15.379	91	551301	20.35	ppbv	98
48) o-Xylene	16.057	91	300450	10.03	ppbv	98
49) Styrene	16.076	104	177826	10.38	ppbv	96
50) Bromoform	16.568	173	106222	10.01	ppbv	96
51) Isopropyl benzene	16.680	105	353748	8.59	ppbv	96
52) 1,1,2,2-Tetrachloroethane	16.848	83	172843	9.87	ppbv	98
54) Benzyl Chloride	18.970	91	89442	8.50	ppbv	93
55) 1,2,3-Trichloropropane	17.103	110	61543	8.03	ppbv #	85
56) n-Propyl Benzene	17.371	91	381410	8.78	ppbv	98
57) Bromobenzene	17.377	77	158932	8.54	ppbv	80
58) 4-Ethyl Toluene	17.545	105	383777	11.00	ppbv	95
59) 1,3,5-Trimethylbenzene	17.620	105	354186	10.10	ppbv	94
60) 2-Chlorotoluene	17.620	91	294632	8.45	ppbv	85
61) 4-Chlorotoluene	17.694	91	230118	8.51	ppbv	88
62) tert-Butylbenzene	18.155	119	320604	9.13	ppbv	89
63) 1,2,4-Trimethylbenzene	18.198	105	344255	10.44	ppbv	94
64) sec-Butylbenzene	18.460	105	406842	8.29	ppbv	95
65) p-Isopropyltoluene	18.640	119	319811	8.30	ppbv	92
66) 1,3-Dichlorobenzene	18.728	146	203051	11.28	ppbv	87
67) 1,4-Dichlorobenzene	18.858	146	195585	11.39	ppbv	94
68) n-Butylbenzene	19.188	91	260886	8.33	ppbv	98
69) 1,2-Dichlorobenzene	19.356	146	195664	11.30	ppbv	92
70) 1,2-Dibromo-3-chloropr...	20.414	157	41032	10.93	ppbv #	80
71) 1,2,4-Trichlorobenzene	21.927	180	103926	16.52	ppbv	91
72) Hexachlorobutadiene	22.244	225	106687	11.81	ppbv	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY003.D
Acq On : 14 May 2014 10:20 am
Operator : VM
Sample : LCS
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 14 10:45:31 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY004.D
Acq On : 14 May 2014 11:05 am
Operator : VM
Sample : LCSD
Misc : 50 ML
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 14 11:30:10 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.198	130	35903	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.555	114	170133	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	119059	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.957	65	68707	9.06	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 90.60%			
34) Toluene-d8	12.808	98	110315	9.67	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.70%			
53) 4-Bromofluorobenzene	17.053	174	64122	10.43	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.465	85	214658	8.96	ppbv	98
3) Chloromethane	3.839	50	60568	9.84	ppbv	99
4) 1,2-Cl-1,1,2,2-F ethan...	3.702	85	204204	9.33	ppbv	87
5) Vinyl Chloride	4.063	62	56033	9.86	ppbv	96
6) Bromomethane	4.747	94	28981	9.44	ppbv	88
7) Chloroethane	4.891	66	10754	12.23	ppbv	82
8) Trichlorofluoromethane...	5.364	101	239269	8.96	ppbv	98
9) 1,1-Dichloroethene	6.260	61	124796	9.57	ppbv	96
10) Carbon Disulfide	6.938	76	154023	8.37	ppbv	99
11) 1,1,2-Cl 1,2,2-F ethan...	6.098	151	122223	9.93	ppbv	83
12) Acetone	5.999	43	157260	9.89	ppbv	88
13) Methylene Chloride	6.889	84	53648	9.29	ppbv	86
14) t-1,2-Dichloroethene	7.380	96	64903	9.39	ppbv	93
15) 1,1-Dichloroethane	7.941	63	137805	9.89	ppbv	97
16) Vinyl Acetate	7.928	43	222923	8.00	ppbv	96
17) c-1,2-Dichloroethene	8.781	96	73350	9.47	ppbv	98
18) 2-Butanone	8.482	72	30901	9.61	ppbv	69
19) t-Butyl Methyl Ether	7.250	73	187957	9.54	ppbv	91
20) Chloroform	9.011	83	165919	9.45	ppbv	99
21) 1,1,1-Trichloroethane	9.621	97	173666	9.16	ppbv	98
22) 1,1-Dichloropropene	9.858	75	98798	9.08	ppbv	93
23) Carbon Tetrachloride	10.007	117	154525	8.89	ppbv	96
25) Benzene	10.188	78	212873	8.88	ppbv	93
27) 1,2-Dichloroethane	10.088	62	131937	8.76	ppbv	94
28) Trichloroethene	11.078	130	111650	9.55	ppbv	79
29) 1,2-Dichloropropane	11.283	63	79123	9.25	ppbv	94
30) Bromodichloromethane	11.588	83	157454	8.60	ppbv	99
31) Dibromomethane	11.632	93	81731	9.33	ppbv	92
32) c-1,3-Dichloropropene	12.366	75	95761	9.32	ppbv	91
33) 4-Methyl-2-Pentanone	12.092	43	184022	9.09	ppbv	91
35) Toluene	12.920	91	237565	9.17	ppbv	100
37) t-1,3-Dichloropropene	13.082	75	72965	8.33	ppbv	94
38) 1,1,2-Trichloroethane	13.325	97	91686	9.16	ppbv	94
39) 1,3-Dichloropropane	13.698	76	107774	9.45	ppbv #	94
40) Tetrachloroethene	13.947	166	132210	9.52	ppbv	96
41) 2-Hexanone	13.362	58	83306	10.11	ppbv	94
42) Dibromochloromethane	14.115	129	144133	9.30	ppbv	99

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY004.D
Acq On : 14 May 2014 11:05 am
Operator : VM
Sample : LCSD
Misc : 50 ML
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 14 11:30:10 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

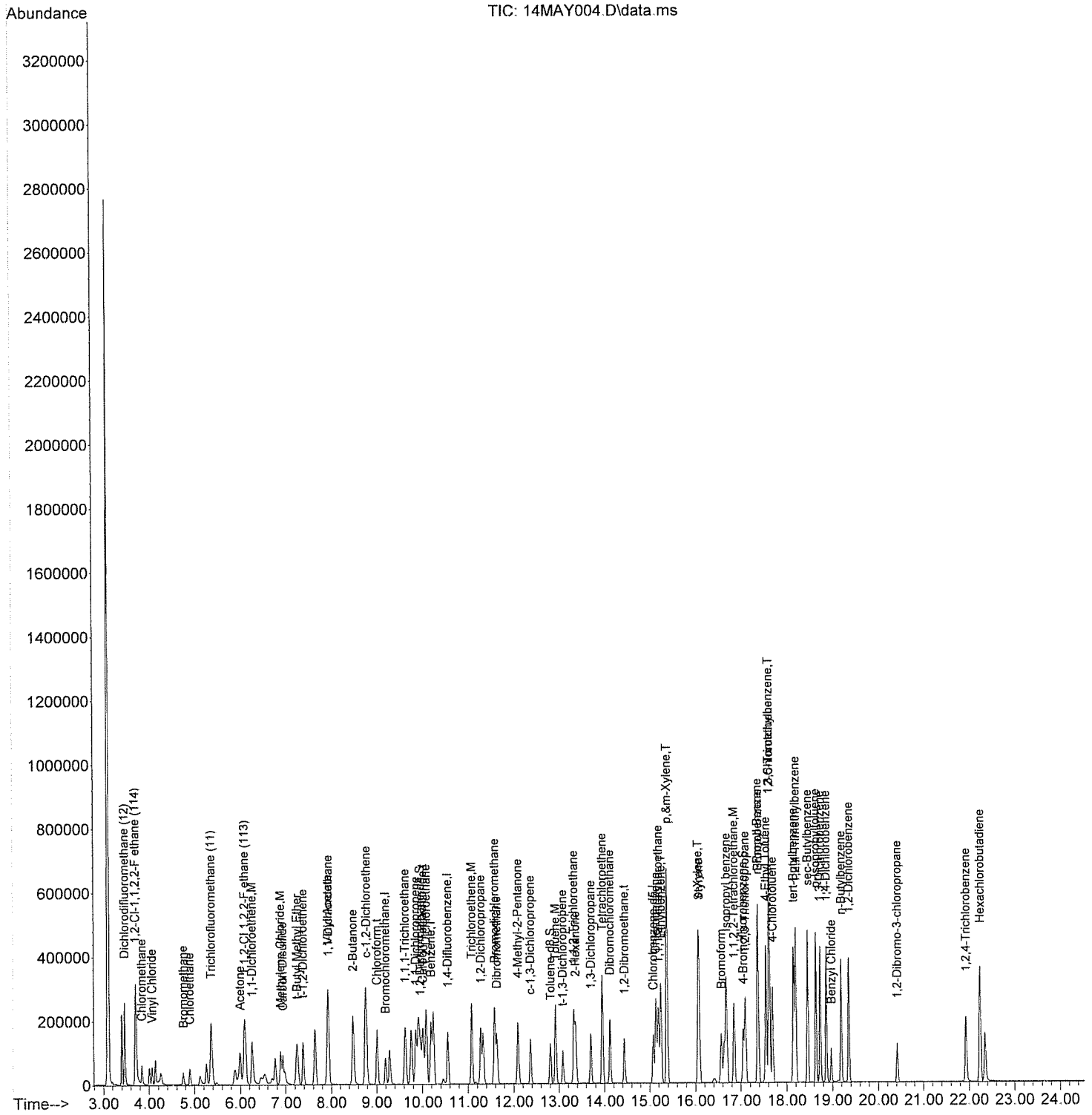
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
43) 1,2-Dibromoethane	14.439	107	129334	9.47	ppbv		99
44) Chlorobenzene	15.136	112	192850	9.72	ppbv		87
45) 1,1,1,2-Tetrachloroethane	15.192	131	91623	9.23	ppbv		94
46) Ethylbenzene	15.248	91	314175	10.01	ppbv		98
47) p,&m-Xylene	15.379	91	550549	20.56	ppbv		99
48) o-Xylene	16.057	91	299655	10.12	ppbv		100
49) Styrene	16.076	104	177204	10.46	ppbv		95
50) Bromoform	16.568	173	109912	10.47	ppbv		98
51) Isopropyl benzene	16.680	105	354503	8.71	ppbv		96
52) 1,1,2,2-Tetrachloroethane	16.848	83	173228	10.00	ppbv		95
54) Benzyl Chloride	18.970	91	92199	8.87	ppbv		93
55) 1,2,3-Trichloropropane	17.097	110	62529	8.25	ppbv	#	86
56) n-Propyl Benzene	17.364	91	375005	8.73	ppbv		99
57) Bromobenzene	17.377	77	159560	8.67	ppbv		79
58) 4-Ethyl Toluene	17.545	105	379655	11.01	ppbv		97
59) 1,3,5-Trimethylbenzene	17.613	105	353141	10.18	ppbv		96
60) 2-Chlorotoluene	17.619	91	296859	8.62	ppbv		88
61) 4-Chlorotoluene	17.694	91	232182	8.68	ppbv		85
62) tert-Butylbenzene	18.149	119	319599	9.21	ppbv		90
63) 1,2,4-Trimethylbenzene	18.198	105	347180	10.65	ppbv		92
64) sec-Butylbenzene	18.460	105	405648	8.36	ppbv		97
65) p-Isopropyltoluene	18.640	119	321953	8.45	ppbv		90
66) 1,3-Dichlorobenzene	18.727	146	201738	11.33	ppbv		88
67) 1,4-Dichlorobenzene	18.858	146	194505	11.46	ppbv		93
68) n-Butylbenzene	19.188	91	262545	8.48	ppbv		98
69) 1,2-Dichlorobenzene	19.356	146	193995	11.33	ppbv		92
70) 1,2-Dibromo-3-chloropr...	20.414	157	42498	11.45	ppbv	#	83
71) 1,2,4-Trichlorobenzene	21.927	180	106400	17.11	ppbv		94
72) Hexachlorobutadiene	22.244	225	108064	12.10	ppbv		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 14MAY004.D
Acq On : 14 May 2014 11:05 am
Operator : VM
Sample : LCSD
Misc : 50 ML
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 14 11:30:10 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY007.D
Acq On : 13 May 2014 1:24 pm
Operator : vm
Sample : LCS
Misc : 50ML, AW1201212
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 13 13:48:38 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	9.198	130	37932	10.00 ppbv	0.00
24) 1,4-Difluorobenzene	10.555	114	177491	10.00 ppbv	0.00
36) Chlorobenzene-d5	15.080	117	121464	10.00 ppbv	0.00
System Monitoring Compounds					
26) 1,2-Dichloroethane-d4	9.963	65	71017	8.97 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 89.70%		
34) Toluene-d8	12.802	98	114634	9.63 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.30%		
53) 4-Bromofluorobenzene	17.059	174	67136	10.71 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 107.10%		
Target Compounds					Qvalue
2) Dichlorodifluoromethan...	3.459	85	219128	8.65 ppbv	97
3) Chloromethane	3.839	50	60265	9.26 ppbv	96
4) 1,2-Cl-1,1,2,2-F ethan...	3.702	85	207012	8.95 ppbv	84
5) Vinyl Chloride	4.063	62	56117	9.35 ppbv	97
6) Bromomethane	4.741	94	30852	9.51 ppbv	96
7) Chloroethane	4.897	66	10471	11.27 ppbv	88
8) Trichlorofluoromethane...	5.357	101	242572	8.60 ppbv	97
9) 1,1-Dichloroethene	6.254	61	128390	9.32 ppbv	96
10) Carbon Disulfide	6.938	76	155709	8.01 ppbv	99
11) 1,1,2-Cl 1,2,2-F ethan...	6.098	151	125283	9.64 ppbv	83
12) Acetone	5.992	43	146747	8.74 ppbv	94
13) Methylene Chloride	6.889	84	55856	9.15 ppbv	85
14) t-1,2-Dichloroethene	7.380	96	65399	8.96 ppbv	94
15) 1,1-Dichloroethane	7.941	63	138377	9.40 ppbv	99
16) Vinyl Acetate	7.928	43	222709	7.56 ppbv	96
17) c-1,2-Dichloroethene	8.781	96	76425	9.34 ppbv	98
18) 2-Butanone	8.482	72	30541	8.99 ppbv	71
19) t-Butyl Methyl Ether	7.243	73	191842	9.22 ppbv	90
20) Chloroform	9.011	83	167355	9.03 ppbv	95
21) 1,1,1-Trichloroethane	9.627	97	180993	9.04 ppbv	98
22) 1,1-Dichloropropene	9.851	75	100533	8.74 ppbv	94
23) Carbon Tetrachloride	10.013	117	160079	8.71 ppbv	97
25) Benzene	10.188	78	217249	8.69 ppbv	93
27) 1,2-Dichloroethane	10.088	62	131342	8.36 ppbv	95
28) Trichloroethene	11.078	130	109919	9.01 ppbv	83
29) 1,2-Dichloropropane	11.283	63	80607	9.03 ppbv	99
30) Bromodichloromethane	11.588	83	161683	8.47 ppbv	97
31) Dibromomethane	11.638	93	82744	9.05 ppbv	91
32) c-1,3-Dichloropropene	12.366	75	96356	8.99 ppbv	92
33) 4-Methyl-2-Pentanone	12.092	43	186327	8.82 ppbv	88
35) Toluene	12.920	91	240969	8.91 ppbv	99
37) t-1,3-Dichloropropene	13.082	75	72478	8.11 ppbv	89
38) 1,1,2-Trichloroethane	13.325	97	92490	9.06 ppbv	96
39) 1,3-Dichloropropane	13.698	76	108506	9.32 ppbv #	89
40) Tetrachloroethene	13.947	166	134761	9.51 ppbv	97
41) 2-Hexanone	13.362	58	82951	9.87 ppbv	92
42) Dibromochloromethane	14.115	129	149097	9.43 ppbv	95

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY007.D
Acq On : 13 May 2014 1:24 pm
Operator : vm
Sample : LCS
Misc : 50ML, AW1201212
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 13 13:48:38 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

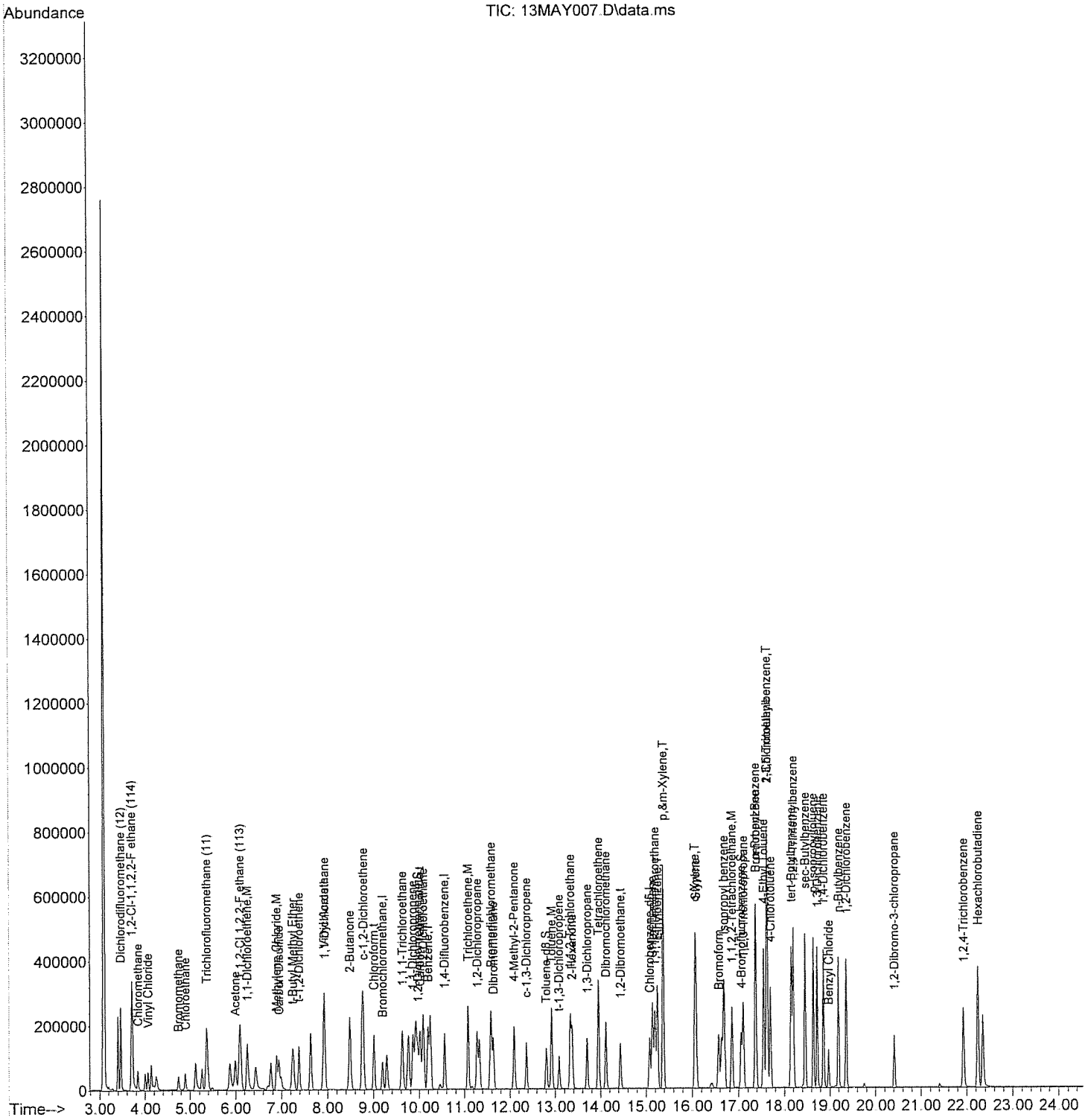
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
43) 1,2-Dibromoethane	14.439	107	129709	9.30 ppbv	99
44) Chlorobenzene	15.136	112	194770	9.63 ppbv	91
45) 1,1,1,2-Tetrachloroethane	15.192	131	95201	9.40 ppbv	95
46) Ethylbenzene	15.248	91	321880	10.05 ppbv	96
47) p,&m-Xylene	15.379	91	561357	20.55 ppbv	100
48) o-Xylene	16.057	91	303862	10.05 ppbv	98
49) Styrene	16.076	104	182192	10.55 ppbv	94
50) Bromoform	16.568	173	114857	10.73 ppbv	97
51) Isopropyl benzene	16.680	105	363511	8.75 ppbv	95
52) 1,1,2,2-Tetrachloroethane	16.848	83	174912	9.90 ppbv	98
54) Benzyl Chloride	18.970	91	100600	9.48 ppbv	92
55) 1,2,3-Trichloropropane	17.103	110	63783	8.25 ppbv #	83
56) n-Propyl Benzene	17.370	91	383068	8.74 ppbv	97
57) Bromobenzene	17.377	77	162063	8.63 ppbv	80
58) 4-Ethyl Toluene	17.545	105	385108	10.95 ppbv	97
59) 1,3,5-Trimethylbenzene	17.619	105	355227	10.04 ppbv	94
60) 2-Chlorotoluene	17.619	91	300811	8.56 ppbv	84
61) 4-Chlorotoluene	17.694	91	237748	8.72 ppbv	86
62) tert-Butylbenzene	18.155	119	327269	9.24 ppbv	90
63) 1,2,4-Trimethylbenzene	18.198	105	350924	10.55 ppbv	94
64) sec-Butylbenzene	18.460	105	415982	8.40 ppbv	96
65) p-Isopropyltoluene	18.640	119	331315	8.52 ppbv	91
66) 1,3-Dichlorobenzene	18.734	146	206328	11.36 ppbv	87
67) 1,4-Dichlorobenzene	18.858	146	196194	11.33 ppbv	95
68) n-Butylbenzene	19.188	91	274021	8.67 ppbv	97
69) 1,2-Dichlorobenzene	19.356	146	199444	11.42 ppbv	92
70) 1,2-Dibromo-3-chloropr...	20.414	157	57804	15.26 ppbv #	79
71) 1,2,4-Trichlorobenzene	21.927	180	122350	19.28 ppbv	90
72) Hexachlorobutadiene	22.244	225	111359	12.22 ppbv	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY007.D
Acq On : 13 May 2014 1:24 pm
Operator : vm
Sample : LCS
Misc : 50ML, AW1201212
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 13 13:48:38 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY008.D
Acq On : 13 May 2014 2:03 pm
Operator : vm
Sample : LCSD
Misc : 50ML, AW1201212
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 13 14:28:29 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.198	130	38627	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.555	114	174739	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	122720	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.957	65	72204	9.27	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 92.70%			
34) Toluene-d8	12.802	98	115945	9.90	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.00%			
53) 4-Bromofluorobenzene	17.053	174	65418	10.32	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 103.20%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.453	85	224107	8.69	ppbv	98
3) Chloromethane	3.832	50	60696	9.16	ppbv	95
4) 1,2-Cl-1,1,2,2-F ethan...	3.695	85	211054	8.96	ppbv	86
5) Vinyl Chloride	4.056	62	56983	9.32	ppbv	96
6) Bromomethane	4.741	94	30835	9.34	ppbv	90
7) Chloroethane	4.884	66	10804	11.42	ppbv	84
8) Trichlorofluoromethane...	5.357	101	249843	8.70	ppbv	98
9) 1,1-Dichloroethene	6.254	61	126377	9.01	ppbv	98
10) Carbon Disulfide	6.932	76	154747	7.81	ppbv	100
11) 1,1,2-Cl 1,2,2-F ethan...	6.092	151	124195	9.38	ppbv	80
12) Acetone	5.992	43	147154	8.60	ppbv	95
13) Methylene Chloride	6.882	84	57707	9.29	ppbv	83
14) t-1,2-Dichloroethene	7.380	96	67663	9.10	ppbv	94
15) 1,1-Dichloroethane	7.940	63	140119	9.35	ppbv	96
16) Vinyl Acetate	7.922	43	225444	7.52	ppbv	95
17) c-1,2-Dichloroethene	8.775	96	77927	9.35	ppbv	98
18) 2-Butanone	8.482	72	32084	9.28	ppbv	76
19) t-Butyl Methyl Ether	7.243	73	191123	9.02	ppbv	92
20) Chloroform	9.011	83	170134	9.01	ppbv	95
21) 1,1,1-Trichloroethane	9.627	97	185768	9.11	ppbv	97
22) 1,1-Dichloropropene	9.851	75	102202	8.73	ppbv	91
23) Carbon Tetrachloride	10.007	117	166913	8.92	ppbv	97
25) Benzene	10.187	78	221463	9.00	ppbv	95
27) 1,2-Dichloroethane	10.088	62	134186	8.68	ppbv	93
28) Trichloroethene	11.078	130	113043	9.41	ppbv	84
29) 1,2-Dichloropropane	11.277	63	81680	9.30	ppbv	95
30) Bromodichloromethane	11.588	83	166479	8.86	ppbv	98
31) Dibromomethane	11.632	93	83542	9.28	ppbv	91
32) c-1,3-Dichloropropene	12.366	75	100537	9.53	ppbv	88
33) 4-Methyl-2-Pentanone	12.092	43	190033	9.14	ppbv	90
35) Toluene	12.920	91	245579	9.23	ppbv	99
37) t-1,3-Dichloropropene	13.082	75	75233	8.33	ppbv	94
38) 1,1,2-Trichloroethane	13.325	97	94495	9.16	ppbv	94
39) 1,3-Dichloropropane	13.698	76	112054	9.53	ppbv #	93
40) Tetrachloroethene	13.947	166	137610	9.61	ppbv	96
41) 2-Hexanone	13.362	58	82339	9.69	ppbv	87
42) Dibromochloromethane	14.115	129	154765	9.68	ppbv	97

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY008.D
Acq On : 13 May 2014 2:03 pm
Operator : vm
Sample : LCSD
Misc : 50ML, AW1201212
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 13 14:28:29 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

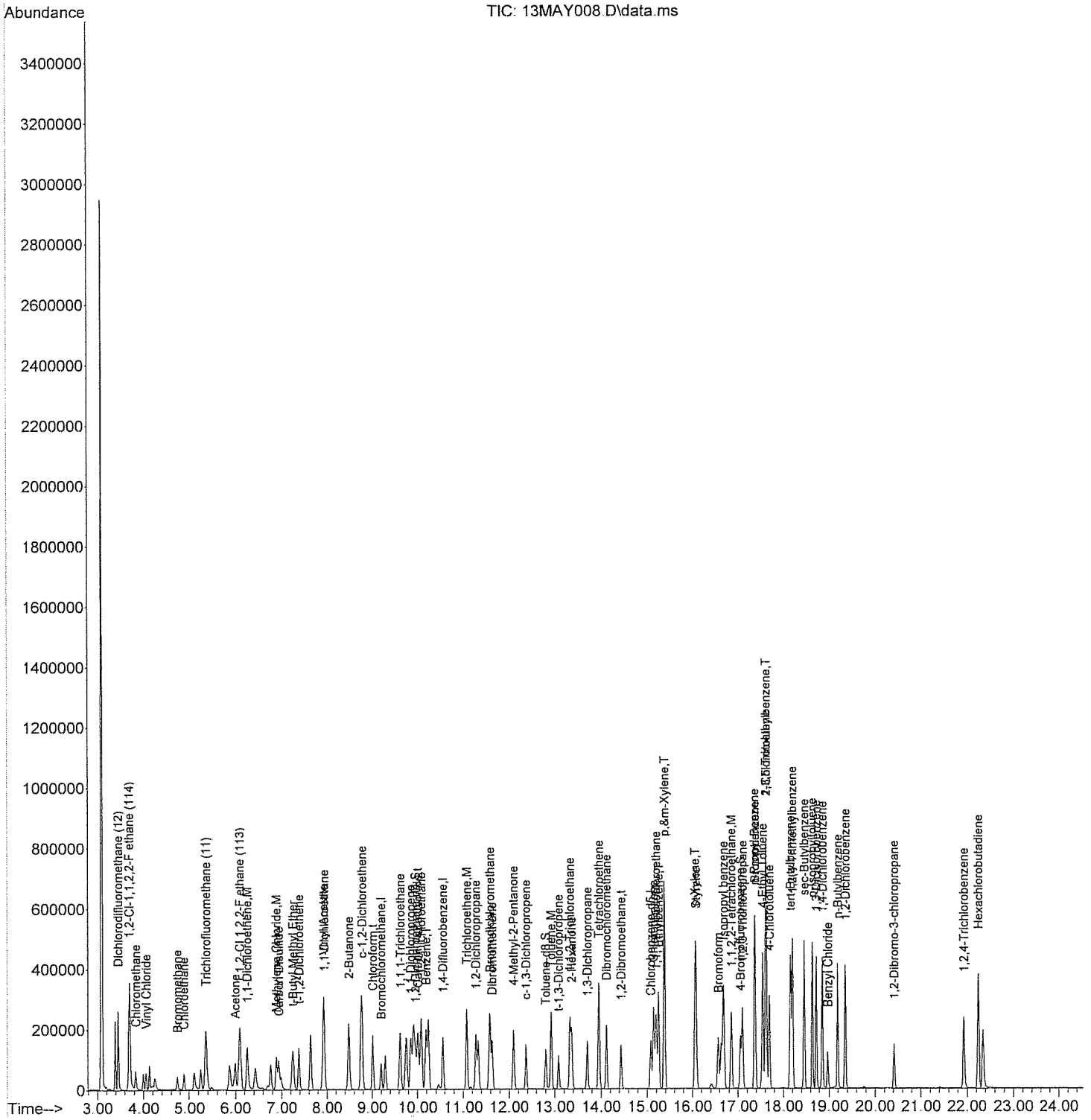
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,2-Dibromoethane	14.439	107	133765	9.50	ppbv	99
44) Chlorobenzene	15.136	112	196473	9.61	ppbv	91
45) 1,1,1,2-Tetrachloroethane	15.192	131	97267	9.51	ppbv	95
46) Ethylbenzene	15.248	91	320079	9.89	ppbv	96
47) p,&m-Xylene	15.379	91	564493	20.45	ppbv	98
48) o-Xylene	16.057	91	309037	10.12	ppbv	99
49) Styrene	16.076	104	183482	10.51	ppbv	94
50) Bromoform	16.567	173	117774	10.89	ppbv	96
51) Isopropyl benzene	16.679	105	363794	8.67	ppbv	95
52) 1,1,2,2-Tetrachloroethane	16.848	83	180006	10.09	ppbv	99
54) Benzyl Chloride	18.970	91	105068	9.80	ppbv	93
55) 1,2,3-Trichloropropane	17.103	110	64452	8.25	ppbv #	82
56) n-Propyl Benzene	17.364	91	392872	8.88	ppbv	100
57) Bromobenzene	17.377	77	162911	8.59	ppbv	80
58) 4-Ethyl Toluene	17.545	105	393430	11.07	ppbv	96
59) 1,3,5-Trimethylbenzene	17.619	105	367993	10.30	ppbv	95
60) 2-Chlorotoluene	17.619	91	305205	8.59	ppbv	90
61) 4-Chlorotoluene	17.694	91	236366	8.58	ppbv	85
62) tert-Butylbenzene	18.155	119	329352	9.20	ppbv	89
63) 1,2,4-Trimethylbenzene	18.198	105	363933	10.83	ppbv	95
64) sec-Butylbenzene	18.460	105	422785	8.45	ppbv	96
65) p-Isopropyltoluene	18.640	119	334940	8.53	ppbv	91
66) 1,3-Dichlorobenzene	18.727	146	209987	11.44	ppbv	87
67) 1,4-Dichlorobenzene	18.858	146	200318	11.45	ppbv	94
68) n-Butylbenzene	19.188	91	272053	8.52	ppbv	98
69) 1,2-Dichlorobenzene	19.356	146	204435	11.58	ppbv	92
70) 1,2-Dibromo-3-chloropr...	20.414	157	51182	13.38	ppbv #	81
71) 1,2,4-Trichlorobenzene	21.927	180	117950	18.40	ppbv	86
72) Hexachlorobutadiene	22.244	225	115946	12.59	ppbv	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 13MAY008.D
Acq On : 13 May 2014 2:03 pm
Operator : vm
Sample : LCSD
Misc : 50ML, AW1201212
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 13 14:28:29 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY003.D
Acq On : 15 May 2014 8:08 am
Operator : MJ
Sample : LCS
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 08:33:29 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.204	130	35204	10.00	ppbv	0.01
24) 1,4-Difluorobenzene	10.561	114	165101	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	116952	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.970	65	68071	9.25	ppbv	0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 92.50%			
34) Toluene-d8	12.808	98	108066	9.76	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 97.60%			
53) 4-Bromofluorobenzene	17.053	174	63248	10.47	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.70%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.478	85	216294	9.20	ppbv	98
3) Chloromethane	3.851	50	58758	9.73	ppbv	95
4) 1,2-Cl-1,1,2,2-F ethan...	3.714	85	203084	9.46	ppbv	87
5) Vinyl Chloride	4.075	62	55050	9.88	ppbv	97
6) Bromomethane	4.754	94	30186	10.03	ppbv	90
7) Chloroethane	4.903	66	8861	10.28	ppbv	87
8) Trichlorofluoromethane...	5.370	101	241488	9.23	ppbv	95
9) 1,1-Dichloroethene	6.266	61	124571	9.74	ppbv	97
10) Carbon Disulfide	6.945	76	157231	8.71	ppbv	96
11) 1,1,2-Cl 1,2,2-F ethan...	6.111	151	120180	9.96	ppbv	85
12) Acetone	6.005	43	149749	9.61	ppbv	94
13) Methylene Chloride	6.895	84	56240	9.93	ppbv	85
14) t-1,2-Dichloroethene	7.387	96	66360	9.79	ppbv	91
15) 1,1-Dichloroethane	7.941	63	138418	10.13	ppbv	97
16) Vinyl Acetate	7.941	43	227958	8.34	ppbv	96
17) c-1,2-Dichloroethene	8.781	96	77216	10.17	ppbv	99
18) 2-Butanone	8.488	72	31622	10.03	ppbv	64
19) t-Butyl Methyl Ether	7.250	73	196459	10.17	ppbv	92
20) Chloroform	9.017	83	165645	9.63	ppbv	97
21) 1,1,1-Trichloroethane	9.627	97	178152	9.59	ppbv	97
22) 1,1-Dichloropropene	9.858	75	99160	9.29	ppbv	90
23) Carbon Tetrachloride	10.013	117	159164	9.33	ppbv	95
25) Benzene	10.194	78	218342	9.39	ppbv	94
27) 1,2-Dichloroethane	10.094	62	131278	8.98	ppbv	97
28) Trichloroethene	11.084	130	109359	9.64	ppbv	84
29) 1,2-Dichloropropane	11.283	63	81678	9.84	ppbv	98
30) Bromodichloromethane	11.588	83	156238	8.80	ppbv	99
31) Dibromomethane	11.638	93	80513	9.47	ppbv	89
32) c-1,3-Dichloropropene	12.372	75	97665	9.80	ppbv	89
33) 4-Methyl-2-Pentanone	12.092	43	191478	9.74	ppbv	87
35) Toluene	12.926	91	237394	9.44	ppbv	98
37) t-1,3-Dichloropropene	13.088	75	73859	8.58	ppbv	91
38) 1,1,2-Trichloroethane	13.331	97	91080	9.26	ppbv	94
39) 1,3-Dichloropropane	13.698	76	108305	9.66	ppbv #	90
40) Tetrachloroethene	13.953	166	130046	9.53	ppbv	96
41) 2-Hexanone	13.368	58	83905	10.36	ppbv	89
42) Dibromochloromethane	14.121	129	139468	9.16	ppbv	97

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY003.D
Acq On : 15 May 2014 8:08 am
Operator : MJ
Sample : LCS
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 08:33:29 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

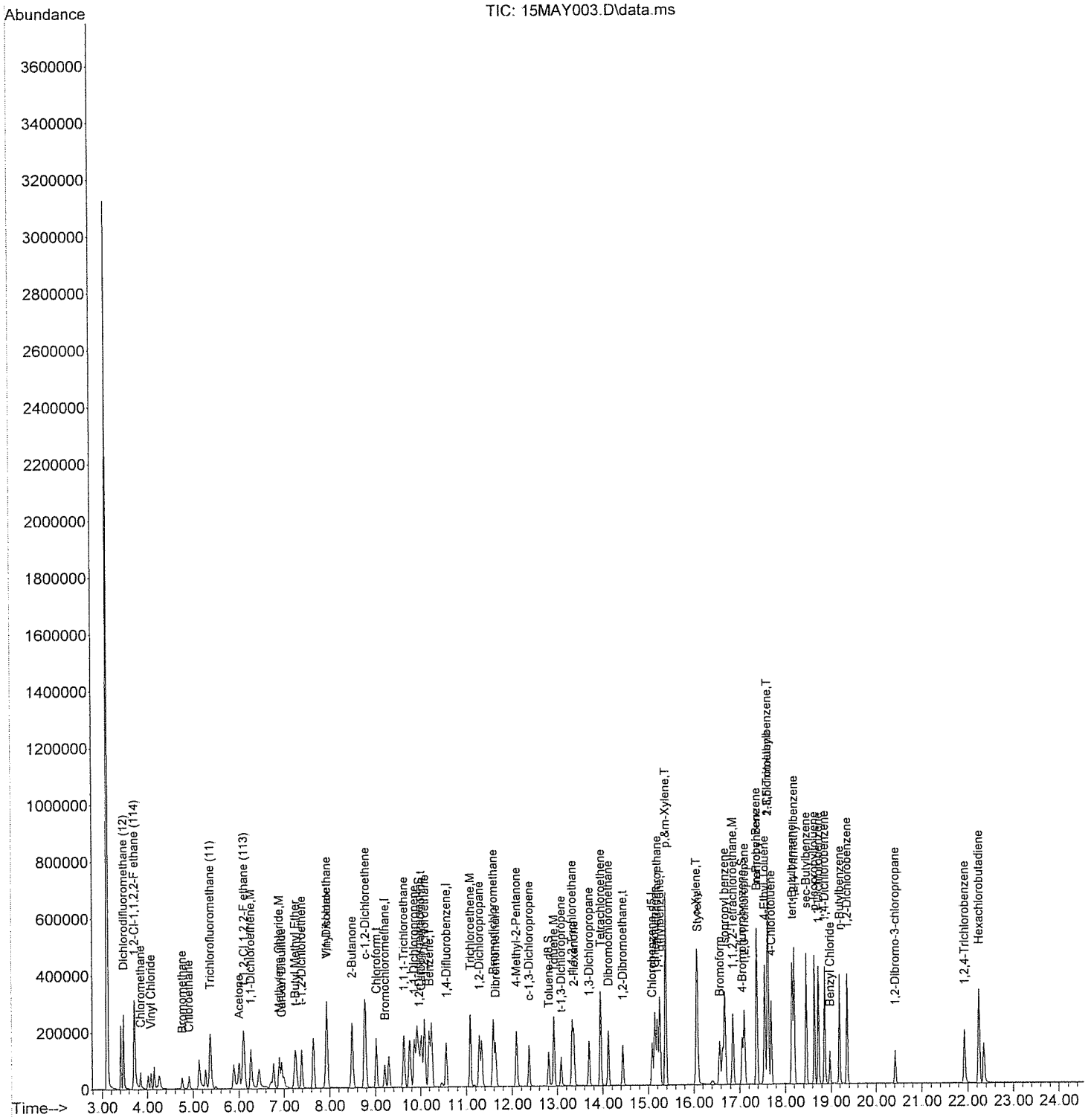
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,2-Dibromoethane	14.439	107	127744	9.52	ppbv	98
44) Chlorobenzene	15.142	112	189292	9.72	ppbv	90
45) 1,1,1,2-Tetrachloroethane	15.192	131	92144	9.45	ppbv	96
46) Ethylbenzene	15.248	91	312179	10.12	ppbv	96
47) p,&m-Xylene	15.379	91	544657	20.70	ppbv	97
48) o-Xylene	16.057	91	299591	10.30	ppbv	97
49) Styrene	16.082	104	177598	10.68	ppbv	95
50) Bromoform	16.567	173	105377	10.22	ppbv	96
51) Isopropyl benzene	16.680	105	354892	8.88	ppbv	95
52) 1,1,2,2-Tetrachloroethane	16.848	83	174110	10.24	ppbv	97
54) Benzyl Chloride	18.970	91	95809	9.38	ppbv	91
55) 1,2,3-Trichloropropane	17.103	110	62048	8.33	ppbv #	90
56) n-Propyl Benzene	17.370	91	375186	8.89	ppbv	98
57) Bromobenzene	17.377	77	158917	8.79	ppbv	83
58) 4-Ethyl Toluene	17.545	105	381340	11.26	ppbv	96
59) 1,3,5-Trimethylbenzene	17.619	105	351063	10.31	ppbv	95
60) 2-Chlorotoluene	17.619	91	291124	8.60	ppbv	91
61) 4-Chlorotoluene	17.694	91	230666	8.78	ppbv	87
62) tert-Butylbenzene	18.155	119	321124	9.42	ppbv	89
63) 1,2,4-Trimethylbenzene	18.198	105	345985	10.80	ppbv	93
64) sec-Butylbenzene	18.460	105	400377	8.40	ppbv	97
65) p-Isopropyltoluene	18.640	119	309334	8.26	ppbv	92
66) 1,3-Dichlorobenzene	18.734	146	199709	11.42	ppbv	88
67) 1,4-Dichlorobenzene	18.858	146	192175	11.52	ppbv	95
68) n-Butylbenzene	19.188	91	254318	8.36	ppbv	98
69) 1,2-Dichlorobenzene	19.356	146	193019	11.48	ppbv	92
70) 1,2-Dibromo-3-chloropr...	20.414	157	41123	11.28	ppbv #	81
71) 1,2,4-Trichlorobenzene	21.927	180	97845	16.02	ppbv	91
72) Hexachlorobutadiene	22.238	225	101159	11.53	ppbv	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\140512\
Data File : 15MAY003.D
Acq On : 15 May 2014 8:08 am
Operator : MJ
Sample : LCS
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 08:33:29 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 15MAY004.D
Acq On : 15 May 2014 8:45 am
Operator : MJ
Sample : LCSD
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 09:10:03 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.198	130	35786	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.561	114	165616	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.080	117	113334	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	9.963	65	67417	9.13	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 91.30%			
34) Toluene-d8	12.808	98	107793	9.71	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 97.10%			
53) 4-Bromofluorobenzene	17.053	174	62051	10.60	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.471	85	216700	9.07	ppbv	98
3) Chloromethane	3.851	50	59567	9.70	ppbv	94
4) 1,2-Cl-1,1,2,2-F ethan...	3.714	85	202035	9.26	ppbv	86
5) Vinyl Chloride	4.075	62	54167	9.57	ppbv	93
6) Bromomethane	4.754	94	29567	9.66	ppbv	94
7) Chloroethane	4.903	66	8472	9.67	ppbv	89
8) Trichlorofluoromethane...	5.370	101	243335	9.15	ppbv	96
9) 1,1-Dichloroethene	6.260	61	123814	9.53	ppbv	97
10) Carbon Disulfide	6.945	76	156488	8.53	ppbv	100
11) 1,1,2-Cl 1,2,2-F ethan...	6.111	151	120291	9.81	ppbv	83
12) Acetone	6.005	43	144644	9.13	ppbv	88
13) Methylene Chloride	6.895	84	55792	9.69	ppbv	86
14) t-1,2-Dichloroethene	7.387	96	65927	9.57	ppbv	94
15) 1,1-Dichloroethane	7.941	63	137477	9.90	ppbv	97
16) Vinyl Acetate	7.934	43	229171	8.25	ppbv	97
17) c-1,2-Dichloroethene	8.781	96	75274	9.75	ppbv	94
18) 2-Butanone	8.482	72	31142	9.72	ppbv	61
19) t-Butyl Methyl Ether	7.256	73	195792	9.97	ppbv	91
20) Chloroform	9.017	83	166088	9.49	ppbv	96
21) 1,1,1-Trichloroethane	9.627	97	178514	9.45	ppbv	97
22) 1,1-Dichloropropene	9.851	75	99634	9.19	ppbv	92
23) Carbon Tetrachloride	10.013	117	159783	9.22	ppbv	95
25) Benzene	10.188	78	215566	9.24	ppbv	94
27) 1,2-Dichloroethane	10.094	62	132938	9.07	ppbv	97
28) Trichloroethene	11.078	130	105626	9.28	ppbv	88
29) 1,2-Dichloropropane	11.283	63	79569	9.56	ppbv	96
30) Bromodichloromethane	11.588	83	156560	8.79	ppbv	97
31) Dibromomethane	11.638	93	81006	9.50	ppbv	90
32) c-1,3-Dichloropropene	12.372	75	97840	9.78	ppbv	89
33) 4-Methyl-2-Pentanone	12.098	43	188621	9.57	ppbv	89
35) Toluene	12.926	91	232628	9.22	ppbv	99
37) t-1,3-Dichloropropene	13.088	75	74091	8.88	ppbv	91
38) 1,1,2-Trichloroethane	13.325	97	91971	9.65	ppbv	94
39) 1,3-Dichloropropane	13.698	76	106847	9.84	ppbv #	90
40) Tetrachloroethene	13.947	166	128270	9.70	ppbv	96
41) 2-Hexanone	13.368	58	83425	10.63	ppbv	89
42) Dibromochloromethane	14.115	129	140705	9.53	ppbv	96

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 15MAY004.D
Acq On : 15 May 2014 8:45 am
Operator : MJ
Sample : LCSD
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 09:10:03 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration

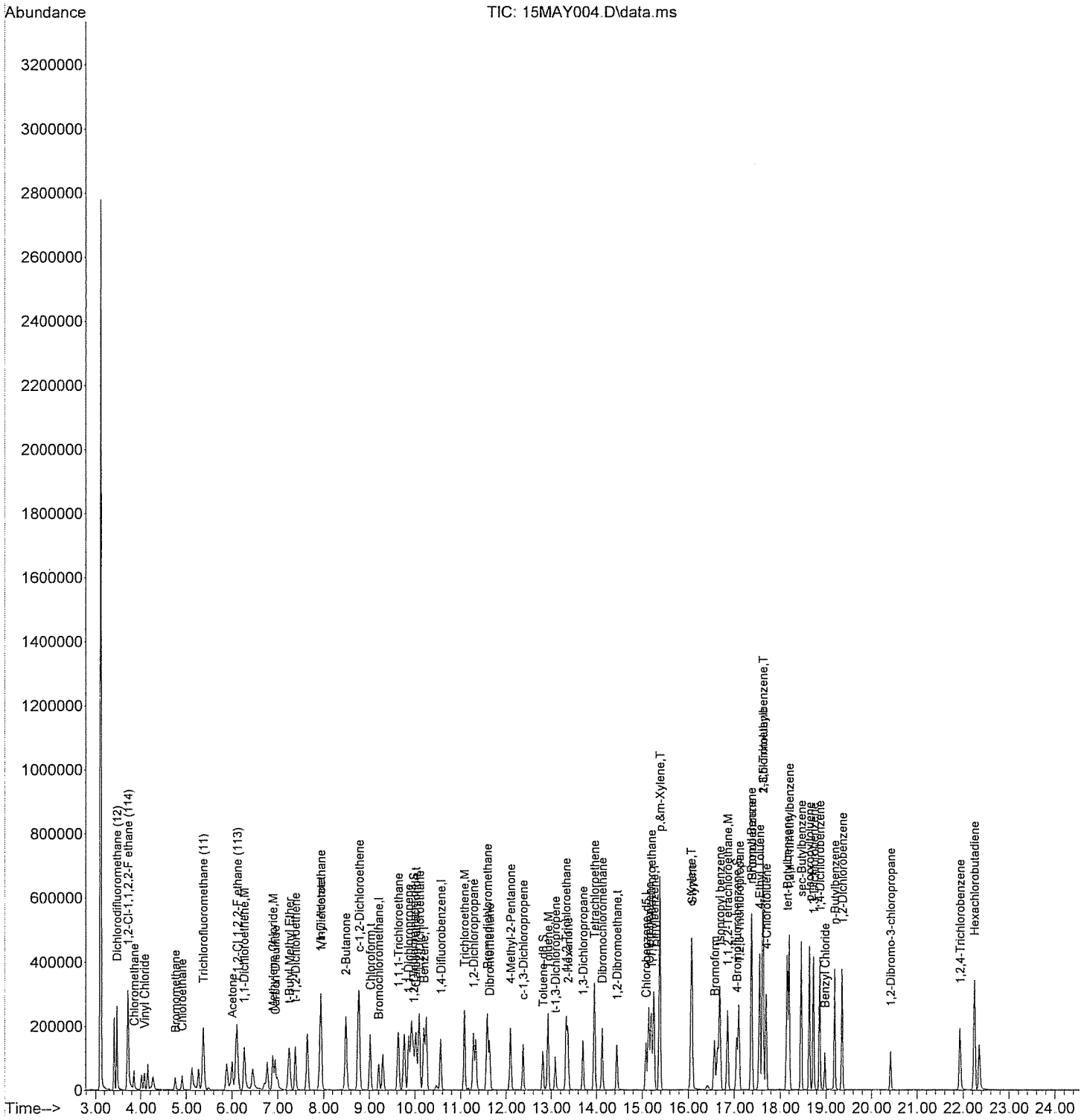
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
43) 1,2-Dibromoethane	14.439	107	127486	9.80 ppbv	96
44) Chlorobenzene	15.142	112	185574	9.83 ppbv	92
45) 1,1,1,2-Tetrachloroethane	15.192	131	89967	9.52 ppbv	94
46) Ethylbenzene	15.248	91	311466	10.42 ppbv	94
47) p,&m-Xylene	15.379	91	544926	21.38 ppbv	97
48) o-Xylene	16.057	91	298329	10.58 ppbv	96
49) Styrene	16.076	104	176504	10.95 ppbv	94
50) Bromoform	16.568	173	104899	10.50 ppbv	96
51) Isopropyl benzene	16.686	105	351186	9.06 ppbv	98
52) 1,1,2,2-Tetrachloroethane	16.848	83	173703	10.54 ppbv	96
54) Benzyl Chloride	18.970	91	101452	10.25 ppbv	92
55) 1,2,3-Trichloropropane	17.103	110	61646	8.54 ppbv #	82
56) n-Propyl Benzene	17.364	91	375708	9.19 ppbv	97
57) Bromobenzene	17.377	77	156155	8.91 ppbv	82
58) 4-Ethyl Toluene	17.545	105	379388	11.56 ppbv	96
59) 1,3,5-Trimethylbenzene	17.619	105	350845	10.63 ppbv	97
60) 2-Chlorotoluene	17.619	91	288521	8.80 ppbv	86
61) 4-Chlorotoluene	17.694	91	228819	8.99 ppbv	87
62) tert-Butylbenzene	18.155	119	313976	9.50 ppbv	91
63) 1,2,4-Trimethylbenzene	18.198	105	342788	11.04 ppbv	93
64) sec-Butylbenzene	18.460	105	405879	8.78 ppbv	96
65) p-Isopropyltoluene	18.640	119	309971	8.55 ppbv	91
66) 1,3-Dichlorobenzene	18.734	146	199712	11.78 ppbv	89
67) 1,4-Dichlorobenzene	18.858	146	188495	11.66 ppbv	94
68) n-Butylbenzene	19.188	91	254213	8.62 ppbv	98
69) 1,2-Dichlorobenzene	19.356	146	190432	11.68 ppbv	92
70) 1,2-Dibromo-3-chloropr...	20.414	157	40518	11.47 ppbv #	84
71) 1,2,4-Trichlorobenzene	21.927	180	98657	16.67 ppbv	96
72) Hexachlorobutadiene	22.238	225	101302	11.91 ppbv	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\140512\
Data File : 15MAY004.D
Acq On : 15 May 2014 8:45 am
Operator : MJ
Sample : LCSD
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 09:10:03 2014
Quant Method : C:\MSDCHEM\1\METHODS\TO140424.M
Quant Title : EPA TO-14/TO-15 (09/27/05) RTxVolatiles 0.32mm
QLast Update : Fri Apr 25 08:32:40 2014
Response via : Initial Calibration



Data Validation Report for Vapor Samples

Wix Filtration Corp LLC Facility
Dillon, South Carolina

April 30, 2014

Data Validation Report

Introduction

This Data Validation Report includes four sub-slab vapor samples and a trip blank collected at the Wix Filtration Corp LLC facility in Dillon, South Carolina (Site) on April 30, 2014. The samples were analyzed by Air Technology Laboratories, Inc. under contract with Pace Analytical Services, Inc. of Huntersville, North Carolina, for volatile organic compounds (VOCs), by U.S. Environmental Protection Agency (EPA) Method TO-15. The data were reviewed in accordance with the method and chain-of-custody criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (July 2007).

SDG#	F050702
Report Date	May 15, 2014
Guidance	National Functional Guidelines of Organic (July 2007) Data Review
Client Name	WSP
Project Name	Wix-Dillon, SC
Laboratory	Pace Analytical
Method Utilized	TO-15
Analytical Fraction	Volatile Organic Compounds

Date Sampled	Sample ID	Laboratory ID	Parameter	Matrix
4/30/2014	SSV-1	F050702-01	VOCs	Vapor
4/30/2014	**SSV-2**	**F050702-02**	**VOCs**	**Vapor**
4/30/2014	SSV-3	F050702-03	VOCs	Vapor
4/30/2014	**SSV-4**	**F050702-04**	**VOCs**	**Vapor**

Volatile Organic Compounds

Four vapor samples and a trip blank were analyzed for VOCs by EPA Method TO-15. The sample IDs in bold were reviewed for surrogate recovery, laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery, blank contamination, instrument performance, calibration, and calculation criteria.

Reviewed	Achieved Criteria	
■	■	Data Completeness
■	■	Holding Times
■		Calibration
■	■	Blanks
		System Monitoring
■	■	Compounds
■	■	Laboratory Control Sample
■		Matrix Spike/ Matrix Spike Duplicate
■	■	Internal Standards
		Target Compound
■	■	Identification
■	■	Compound Quantification and Reported Quantitation Limits
■	■	System Performance

Calibration

1,2,4-Trichlorobenzene exceeded the criteria for the continuing calibrations on May 13, 14 and 15, 2014. The 1,2,4-trichlorobenzene results were qualified, ”J”, as estimated, for several samples.

Blanks

No analytes were detected in any method blank or the trip blank.

Field duplicate

Sample SSV-4 is a duplicate of SSV-3. There was good agreement between SSV-3 and its duplicate results. Chlorobenzene was not detected in SSV-3 but was nominally detected in its duplicate. It was not necessary to qualify any of the results.

Matrix Spike/Matrix Spike Duplicates

There is no matrix spike/matrix spike duplicate associated with these samples.

Laboratory Control Sample/Laboratory Control Sample Duplicates

The spike recoveries in the LCS/LCSD were within acceptable limits.

Compound Quantification

The samples listed below were diluted as indicated to bring the acetone and tetrachloroethene into the instrument calibration range. It was not necessary to further qualify any of the results.

Sample ID	Dilution Factor
SSV-1	4x

Overall Assessment of the Data

The data presented are acceptable as qualified for site characterization activities

Annotated Form 1's

Client:	Pace Analytical
Attn:	Kevin Godwin
Project Name:	31999-5 WIX FILTRATION PLANT
Project No.:	92199714
Date Received:	05/07/14
Matrix:	Air
Reporting Units:	ug/m3

JKJ 8/13/14

EPA Method TO15

Lab No.:	F050702-01		F050702-02		F050702-03		F050702-04	
Client Sample I.D.:	SSV-1 / 92199714001		SSV-2 / 92199714002		SSV-3 / 92199714003		SSV-4 / 92199714004	
Date Sampled:	04/30/14		04/30/14		04/30/14		04/30/14	
Date Analyzed:	05/15/14		05/13/14		05/13/14		05/13/14	
QC Batch No.:	140515MS2A1		140513MS2A1		140513MS2A1		140513MS2A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	0.80		0.20		0.20		0.20	
ANALYTE	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3
Dichlorodifluoromethane (12)	ND	3.9	3.1	0.99	2.4	0.99	1.9	0.99
Chloromethane	ND	3.3	ND	0.83	ND	0.83	ND	0.83
1,2-Cl-1,1,2,2-F ethane (114)	ND	5.6	ND	1.4	ND	1.4	ND	1.4
Vinyl Chloride	ND	2.0	ND	0.51	ND	0.51	ND	0.51
Bromomethane	ND	3.1	ND	0.78	ND	0.78	0.90	0.78
Chloroethane	ND	2.1	ND	0.53	ND	0.53	ND	0.53
Trichlorofluoromethane (11)	ND	4.5	ND	1.1	1.1	1.1	ND	1.1
1,1-Dichloroethene	ND	3.2	ND	0.79	ND	0.79	ND	0.79
Carbon Disulfide	110	12	46	3.1	220 d1	3.1	44	3.1
1,1,2-Cl 1,2,2-F ethane (113)	ND	6.1	ND	1.5	ND	1.5	ND	1.5
Acetone	4,500 d	9.5	86	2.4	46	2.4	31	2.4
Methylene Chloride	ND	2.8	ND	0.69	ND	0.69	ND	0.69
t-1,2-Dichloroethene	ND	3.2	ND	0.79	ND	0.79	ND	0.79
1,1-Dichloroethane	8.3	3.2	ND	0.81	ND	0.81	ND	0.81
Vinyl Acetate	ND	14	ND	3.5	ND	3.5	ND	3.5
c-1,2-Dichloroethene	ND	3.2	ND	0.79	ND	0.79	ND	0.79
2-Butanone	420	2.4	13	0.59	14	0.59	21	0.59
t-Butyl Methyl Ether (MTBE)	ND	2.9	ND	0.72	ND	0.72	ND	0.72
Chloroform	ND	3.9	ND	0.98	ND	0.98	ND	0.98
1,1,1-Trichloroethane	27	4.4	ND	1.1	ND	1.1	ND	1.1
Carbon Tetrachloride	ND	5.0	ND	1.3	ND	1.3	ND	1.3
Benzene	7.8	2.5	1.2	0.64	2.4	0.64	2.8	0.64
1,2-Dichloroethane	ND	3.2	ND	0.81	ND	0.81	ND	0.81
Trichloroethene	64	4.3	15	1.1	3.0	1.1	4.2	1.1
1,2-Dichloropropane	ND	3.7	ND	0.92	ND	0.92	ND	0.92
Bromodichloromethane	ND	5.3	ND	1.3	ND	1.3	ND	1.3
c-1,3-Dichloropropene	ND	3.6	ND	0.91	ND	0.91	ND	0.91
4-Methyl-2-Pentanone	130	3.3	1.9	0.82	1.8	0.82	7.3	0.82
Toluene	40	3.0	3.2	0.75	3.5	0.75	2.4	0.75
t-1,3-Dichloropropene	ND	3.6	ND	0.91	ND	0.91	ND	0.91

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Pace Analytical**
Attn:	**Kevin Godwin**
Project Name:	**31999-5 WIX FILTRATION PLANT**
Project No.:	**92199714**
Date Received:	**05/07/14**
Matrix:	**Air**
Reporting Units:	**ug/m3**

JKJ 8/13/14

EPA Method TO15

Lab No.:	F050702-01		F050702-02		F050702-03		F050702-04	
Client Sample I.D.:	SSV-1 / 92199714001		SSV-2 / 92199714002		SSV-3 / 92199714003		SSV-4 / 92199714004	
Date Sampled:	04/30/14		04/30/14		04/30/14		04/30/14	
Date Analyzed:	05/15/14		05/13/14		05/13/14		05/13/14	
QC Batch No.:	140515MS2A1		140513MS2A1		140513MS2A1		140513MS2A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	0.80		0.20		0.20		0.20	
ANALYTE	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3	Result ug/m3	RL ug/m3
1,1,2-Trichloroethane	ND	4.4	ND	1.1	ND	1.1	ND	1.1
Tetrachloroethene	1,300	5.4	1,600 d1	1.4	6.6	1.4	7.2	1.4
2-Hexanone	100	3.3	2.5	0.82	1.9	0.82	2.3	0.82
Dibromochloromethane	ND	6.8	ND	1.7	ND	1.7	ND	1.7
1,2-Dibromoethane	ND	6.1	ND	1.5	ND	1.5	ND	1.5
Chlorobenzene	6.2	3.7	1.1	0.92	ND	0.92	0.96	0.92
Ethylbenzene	7.0	3.5	ND	0.87	ND	0.87	ND	0.87
p,&m-Xylene	28	3.5	2.1	0.87	2.4	0.87	2.0	0.87
o-Xylene	10	3.5	0.95	0.87	1.5	0.87	1.1	0.87
Styrene	3.5	3.4	ND	0.85	ND	0.85	ND	0.85
Bromoform	ND	8.2	ND	2.1	ND	2.1	ND	2.1
1,1,2,2-Tetrachloroethane	ND	11	ND	2.7	ND	2.7	ND	2.7
Benzyl Chloride	ND	4.1	ND	1.0	ND	1.0	ND	1.0
4-Ethyl Toluene	7.5	3.9	ND	0.98	1.6	0.98	1.4	0.98
1,3,5-Trimethylbenzene	ND	7.8	ND	2.0	ND	2.0	ND	2.0
1,2,4-Trimethylbenzene	ND	7.8	ND	2.0	ND	2.0	ND	2.0
1,3-Dichlorobenzene	ND	4.8	ND	1.2	ND	1.2	ND	1.2
1,4-Dichlorobenzene	ND	4.8	ND	1.2	ND	1.2	ND	1.2
1,2-Dichlorobenzene	ND	4.8	ND	1.2	ND	1.2	ND	1.2
1,2,4-Trichlorobenzene	ND J	12	ND J	3.0	ND J	3.0	ND J	3.0
Hexachlorobutadiene	ND	8.5	ND	2.1	ND	2.1	ND	2.1

ND = Not Detected (below RL)
RL = Reporting Limit
d = Analyte reported from secondary dilution.
d1 = Analyte reported from secondary dilution. QC Batch #140515MS2A1

Reviewed/Approved By: _____ **Date** 5/15/14
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Appendix E – May 2014 Regional Screening Levels Summary Table

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information													Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
1.8E-02	C	5.1E-06	C	1.5E-01	I					1	0.1		ALAR	1596-84-5	3.0E+01	c*	1.3E+02	c*	5.5E-01	c	2.4E+00	c	4.3E+00	c*		9.5E-04	c*	
8.7E-03	I			4.0E-03	I					1	0.1		Acephate	30560-19-1	2.5E+01	n	2.7E+02	c**					8.0E+00	n		1.8E-03	n	
		2.2E-06	I			9.0E-03	I	V		1		1.1E+05	Acetaldehyde	75-07-0	8.2E+00	n	3.4E+01	n	9.4E-01	n	3.9E+00	n	1.9E+00	n		3.8E-04	n	
				2.0E-02	I					1	0.1		Acetochlor	34256-82-1	1.2E+02	n	1.6E+03	n					3.5E+01	n		2.8E-02	n	
				9.0E-01	I	3.1E+01	A	V		1		1.1E+05	Acetone	67-64-1	6.1E+03	n	6.7E+04	n	3.2E+03	n	1.4E+04	n	1.4E+03	n		2.9E-01	n	
						2.0E-03	X	V		1		1.1E+05	Acetone Cyanohydrin	75-86-5	5.0E+00	n	2.1E+01	n	2.1E-01	n	8.8E-01	n	4.2E-01	n		8.4E-05	n	
						6.0E-02	I	V		1		1.3E+05	Acetonitrile	75-05-8	8.1E+01	n	3.4E+02	n	6.3E+00	n	2.6E+01	n	1.3E+01	n		2.6E-03	n	
				1.0E-01	I			V		1		2.5E+03	Acetophenone	98-86-2	7.8E+02	n	1.2E+04	ns					1.9E+02	n		5.8E-02	n	
3.8E+00	C	1.3E-03	C							1	0.1		Acetylaminofluorene, 2-	53-96-3	1.4E-01	c	6.1E-01	c	2.2E-03	c	9.4E-03	c	1.6E-02	c		7.2E-05	c	
				5.0E-04	I	2.0E-05	I	V		1		2.3E+04	Acrolein	107-02-8	1.4E-02	n	6.0E-02	n	2.1E-03	n	8.8E-03	n	4.2E-03	n		8.4E-07	n	
5.0E-01	I	1.0E-04	I	2.0E-03	I	6.0E-03	I		M	1	0.1		Acrylamide	79-06-1	2.4E-01	c*	4.6E+00	c*	1.0E-02	c*	1.2E-01	c*	5.0E-02	c*		1.1E-05	c*	
				5.0E-01	I	1.0E-03	I			1	0.1		Acrylic Acid	79-10-7	3.0E+03	n	3.9E+04	n	1.0E-01	n	4.4E-01	n	9.9E+02	n		2.0E-01	n	
5.4E-01	I	6.8E-05	I	4.0E-02	A	2.0E-03	I	V		1		1.1E+04	Acrylonitrile	107-13-1	2.5E-01	c**	1.1E+00	c**	4.1E-02	c**	1.8E-01	c**	5.2E-02	c**		1.1E-05	c**	
						6.0E-03	P			1	0.1		Adiponitrile	111-69-3	8.5E+05	nm	3.6E+06	nm	6.3E-01	n	2.6E+00	n						
5.6E-02	C			1.0E-02	I					1	0.1		Alachlor	15972-60-8	9.5E+00	c**	4.1E+01	c*					1.0E+00	c*	2.0E+00	8.6E-04	c*	1.6E-03
				1.0E-03	I					1	0.1		Aldicarb	116-06-3	6.2E+00	n	8.2E+01	n					2.0E+00	n	3.0E+00	4.9E-04	n	7.5E-04
				1.0E-03	I					1	0.1		Aldicarb Sulfone	1646-88-4	6.2E+00	n	8.2E+01	n					2.0E+00	n	2.0E+00	4.4E-04	n	4.4E-04
										1	0.1		Aldicarb sulfoxide	1646-87-3											4.0E+00			8.8E-04
1.7E+01	I	4.9E-03	I	3.0E-05	I					1	0.1		Aldrin	309-00-2	3.1E-02	c**	1.4E-01	c*	5.7E-04	c	2.5E-03	c	4.6E-03	c*		7.5E-04	c*	
				2.5E-01	I					1	0.1		Ally	74223-64-6	1.5E+03	n	2.1E+04	n					4.9E+02	n		1.9E-01	n	
				5.0E-03	I	1.0E-04	X			1	0.1		Allyl Alcohol	107-18-6	3.1E+01	n	4.1E+02	n	1.0E-02	n	4.4E-02	n	1.0E+01	n		2.0E-03	n	
2.1E-02	C	6.0E-06	C			1.0E-03	I	V		1		1.4E+03	Allyl Chloride	107-05-1	1.7E-01	n	6.9E-01	n	1.0E-01	n	4.4E-01	n	2.1E-01	n		6.7E-05	n	
				1.0E+00	P	5.0E-03	P			1			Aluminum	7429-90-5	7.7E+03	n	1.1E+05	nm	5.2E-01	n	2.2E+00	n	2.0E+03	n		3.0E+03	n	
				4.0E-04	I					1			Aluminum Phosphide	20859-73-8	3.1E+00	n	4.7E+01	n					8.0E-01	n			n	
				3.0E-04	I					1	0.1		Amdro	67485-29-4	1.8E+00	n	2.5E+01	n					5.9E-01	n		2.1E+02	n	
				9.0E-03	I					1	0.1		Ametryn	834-12-8	5.5E+01	n	7.4E+02	n					1.5E+01	n		1.6E-02	n	
2.1E+01	C	6.0E-03	C							1	0.1		Aminobiphenyl, 4-	92-67-1	2.5E-02	c	1.1E-01	c	4.7E-04	c	2.0E-03	c	3.0E-03	c		1.5E-05	c	
				8.0E-02	P					1	0.1		Aminophenol, m-	591-27-5	4.9E+02	n	6.6E+03	n					1.6E+02	n		6.1E-02	n	
				2.0E-02	P					1	0.1		Aminophenol, p-	123-30-8	1.2E+02	n	1.6E+03	n					4.0E+01	n		1.5E-02	n	
				2.5E-03	I					1	0.1		Amitraz	33089-61-1	1.5E+01	n	2.1E+02	n					8.2E-01	n		4.2E-01	n	
						1.0E-01	I			1			Ammonia	7664-41-7					1.0E+01	n	4.4E+01	n						
				2.0E-01	I					1			Ammonium Sulfamate	7773-06-0	1.6E+03	n	2.3E+04	n					4.0E+02	n			n	
						3.0E-03	X	V		1		1.4E+04	Amyl Alcohol, tert-	75-85-4	8.2E+00	n	3.4E+01	n	3.1E-01	n	1.3E+00	n	6.3E-01	n		1.3E-04	n	
5.7E-03	I	1.6E-06	C	7.0E-03	P	1.0E-03	I			1	0.1		Aniline	62-53-3	4.3E+01	n	4.1E+02	c**	1.0E-01	n	4.4E-01	n	1.3E+01	c**		4.6E-03	c**	
4.0E-02	P			2.0E-03	X					1	0.1		Anthraquinone, 9,10-	84-65-1	1.2E+01	n	5.8E+01	c**					1.4E+00	c**		1.4E-02	c**	
				4.0E-04	I					0.15			Antimony (metallic)	7440-36-0	3.1E+00	n	4.7E+01	n					7.8E-01	n	6.0E+00	3.5E-02	n	2.7E-01
				5.0E-04	H					0.15			Antimony Pentoxide	1314-60-9	3.9E+00	n	5.8E+01	n					9.7E-01	n			n	
				9.0E-04	H					0.15			Antimony Potassium Tartrate	11071-15-1	7.0E+00	n	1.1E+02	n					1.8E+00	n			n	
				4.0E-04	H					0.15			Antimony Tetroxide	1332-81-6	3.1E+00	n	4.7E+01	n					7.8E-01	n			n	
						2.0E-04	I			0.15			Antimony Trioxide	1309-64-4	2.8E+04	n	1.2E+05	nm	2.1E-02	n	8.8E-02	n						
				1.3E-02	I					1	0.1		Apollo	74115-24-5	8.0E+01	n	1.1E+03	n					2.3E+01	n		1.4E+00	n	
2.5E-02	I	7.1E-06	I	5.0E-02	H					1	0.1		Aramite	140-57-8	2.1E+01	c*	9.2E+01	c*	4.0E-01	c	1.7E+00	c	1.3E+00	c*		1.5E-02	c*	
1.5E+00	I	4.3E-03	I	3.0E-04	I	1.5E-05	C			1	0.03		Arsenic, Inorganic	7440-38-2	6.7E-01	c**R	3.0E+00	c*R	6.5E-04	c**	2.9E-03	c**	5.2E-02	c*	1.0E+01	1.5E-03	c*	2.9E-01
				3.5E-06	C	5.0E-05	I			1			Arsine	7784-42-1	2.7E-02	n	4.1E-01	n	5.2E-03	n	2.2E-02	n	7.0E-03	n			n	
				9.0E-03	I					1	0.1		Assure	76578-14-8	5.5E+01	n	7.4E+02	n					1.2E+01	n		1.9E-01	n	
				5.0E-02	I					1	0.1		Asulam	3337-71-1	3.1E+02	n	4.1E+03	n					1.0E+02	n		2.6E-02	n	
2.3E-01	C			3.5E-02	I					1	0.1		Atrazine	1912-24-9	2.3E+00	c*	1.0E+01	c					3.0E-01	c	3.0E+00	1.9E-04	c	1.9E-03
8.8E-01	C	2.5E-04	C							1	0.1		Auramine	492-80-8	6.1E-01	c	2.6E+00	c	1.1E-02	c	4.9E-02	c	6.6E-02	c		6.0E-04	c	
				4.0E-04	I					1	0.1		Avermectin B1	65195-55-3	2.5E+00	n	3.3E+01	n					8.0E-01	n		1.4E+00	n	
1.1E-01	I	3.1E-05	I					V		1			Azobenzene	103-33-3	5.6E+00	c	2.6E+01	c	9.1E-02	c	4.0E-01	c	1.2E-01	c		9.2E-04	c	
				1.0E+00	P	7.0E-06	P			1	0.1		Azodicarbonamide	123-77-3	8.5E+02	n	4.0E+03	n	7.3E-04	n	3.1E-03	n	2.0E+03	n		6.8E-01	n	
				2.0E-01	I	5.0E-04	H			0.07			Barium	7440-39-3	1.5E+03	n	2.2E+04	n	5.2E-02	n	2.2E-01	n	3.8E+02	n	2.0E+03	1.6E+01	n	8.2E+01
				4.0E-03	I					1	0.1		Baygon	114-26-1	2.5E+01	n	3.3E+02	n					7.8E+00	n		2.5E-03	n	
				3.0E-02	I					1	0.1		Bayleton	43121-43-3	1.8E+02	n	2.5E+03	n					5.5E+01	n		4.4E-02	n	
				2.5E-02	I					1	0.1		Baythroid	68359-37-5	1.5E+02	n	2.1E+03	n					1.2E+01	n		3.1E+00	n	
				3.0E-01	I					1	0.1		Benefin	1861-40-1	1.8E+03	n	2.5E+04	n					1.7E+02	n		5.6E+00	n	
				5.0E-02	I					1	0.1		Benomyl	17804-35-2	3.1E+02	n	4.1E+03	n					9.7E+01	n		8.5E-02	n	
				3.0E-02	I					1	0.1		Bentazon	25057-89-0	1.8E+02	n	2.5E+03	n					5.7E+01	n		1.2E-02	n	
				1.0E-01	I			V		1		1.2E+03	Benzaldehyde	100-52-7	7.8E+02	n	1.2E+04	ns					1.9E+02	n		4.3E-02	n	
5.5E-02	I	7.8E-06	I	4.0E-03	I	3.0E-02	I	V		1		1.8E+03	Benzene	71-43-2	1.2E+00	c**	5.1E+00	c**	3.6E-01	c**	1.6E+00	c**	4.5E-01	c**	5.0E+00	2.3E-04	c**	2.6E-03
1.0E-01	X			3.0E-04	X					1	0.1		Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	1.8E+00	n	2.3E+01	c**					6.0E-01	n		1.7E-04	n	
				1.0E-03	P			V		1		1.3E+03	Benzenethiol	108-98-5	7.8E+00	n	1.2E+02	n					1.7E+00	n		1.1E-03	n	
2.3E+02	I	6.7E-02	I	3.0E-03	I				M	1	0.1		Benzidine	92-87-5	5.2E-04	c	1.0E-02	c	1.5E-05	c	1.8E-04	c	1.1E-04	c		2.7E-07	c	
				4.0E+00	I					1	0.1		Benzoic Acid	65-85-0	2.5E+04	n	3.3E+05	nm					7.5E+03	n		1.8E+00	n	
1.3E+01	I							V		1		3.2E+02	Benzotrichloride	98-07-7	5.3E-02	c	2.5E-01	c					2.9E-03	c		6.5E-06	c	

TR=1E-06
HQ=0.1

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information													Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vo c	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				1.0E-01	P					1	0.1		Benzyl Alcohol	100-51-6	6.2E+02	n	8.2E+03	n					2.0E+02	n		4.8E-02	n	
1.7E-01	I	4.9E-05	C	2.0E-03	P	1.0E-03	P	V		1		1.5E+03	Benzyl Chloride	100-44-7	1.1E+00	c**	4.8E+00	c**	5.7E-02	c**	2.5E-01	c**	8.9E-02	c**		9.7E-05	c**	
		2.4E-03	I	2.0E-03	I	2.0E-05	I			0.007			Beryllium and compounds	7440-41-7	1.6E+01	n	2.3E+02	n	1.2E-03	c**	5.1E-03	c**	2.5E+00	n	4.0E+00	1.9E+00	n	3.2E+00
				1.0E-04	I					1	0.1		Bidrin	141-66-2	6.2E-01	n	8.2E+00	n					2.0E-01	n		4.7E-05	n	
				9.0E-03	P					1	0.1		Bifenox	42576-02-3	5.5E+01	n	7.4E+02	n					1.0E+01	n		7.6E-02	n	
				1.5E-02	I					1	0.1		Biphenthrin	82657-04-3	9.2E+01	n	1.2E+03	n					3.0E+01	n		1.4E+02	n	
8.0E-03	I			5.0E-01	I	4.0E-04	X	V		1			Biphenyl, 1,1'-	92-52-4	4.7E+00	n	2.0E+01	n	4.2E-02	n	1.8E-01	n	8.3E-02	n		8.7E-04	n	
7.0E-02	H	1.0E-05	H	4.0E-02	I			V		1		1.0E+03	Bis(2-chloro-1-methylethyl) ether	108-60-1	4.9E+00	c*	2.2E+01	c	2.8E-01	c	1.2E+00	c	3.6E-01	c		1.3E-04	c	
				3.0E-03	P					1	0.1		Bis(2-chloroethoxy)methane	111-91-1	1.8E+01	n	2.5E+02	n					5.9E+00	n		1.3E-03	n	
1.1E+00	I	3.3E-04	I					V		1		5.1E+03	Bis(2-chloroethyl)ether	111-44-4	2.3E-01	c	1.0E+00	c	8.5E-03	c	3.7E-02	c	1.4E-02	c		3.6E-06	c	
2.2E+02	I	6.2E-02	I					V		1		4.2E+03	Bis(chloromethyl)ether	542-88-1	8.3E-05	c	3.6E-04	c	4.5E-05	c	2.0E-04	c	7.2E-05	c		1.7E-08	c	
				5.0E-02	I					1	0.1		Bisphenol A	80-05-7	3.1E+02	n	4.1E+03	n					7.7E+01	n		5.8E+00	n	
				2.0E-01	I	2.0E-02	H			1			Boron And Borates Only	7440-42-8	1.6E+03	n	2.3E+04	n	2.1E+00	n	8.8E+00	n	4.0E+02	n		1.3E+00	n	
				2.0E+00	P	2.0E-02	P			1			Boron Trichloride	10294-34-5	1.6E+04	n	2.3E+05	nm	2.1E+00	n	8.8E+00	n	4.0E+03	n			n	
				4.0E-02	C	1.3E-02	C			1			Boron Trifluoride	7637-07-2	3.1E+02	n	4.7E+03	n	1.4E+00	n	5.7E+00	n	8.0E+01	n			n	
7.0E-01	I			4.0E-03	I					1			Bromate	15541-45-4	9.9E-01	c*	4.7E+00	c					1.1E-01	c*	1.0E+01	8.5E-04	c*	7.7E-02
2.0E+00	X	6.0E-04	X					V		1		2.4E+03	Bromo-2-chloroethane, 1-	107-04-0	2.6E-02	c	1.1E-01	c	4.7E-03	c	2.0E-02	c	7.4E-03	c		2.1E-06	c	
				8.0E-03	I	6.0E-02	I	V		1		6.8E+02	Bromobenzene	108-86-1	2.9E+01	n	1.8E+02	n	6.3E+00	n	2.6E+01	n	6.2E+00	n		4.2E-03	n	
						4.0E-02	X	V		1		4.0E+03	Bromochloromethane	74-97-5	1.5E+01	n	6.3E+01	n	4.2E+00	n	1.8E+01	n	8.3E+00	n		2.1E-03	n	
6.2E-02	I	3.7E-05	C	2.0E-02	I			V		1		9.3E+02	Bromodichloromethane	75-27-4	2.9E-01	c	1.3E+00	c	7.6E-02	c	3.3E-01	c	1.3E-01	c	8.0E+01(F)	3.6E-05	c	2.2E-02
7.9E-03	I	1.1E-06	I	2.0E-02	I					1	0.1		Bromoform	75-25-2	6.7E+01	c**	2.9E+02	c**	2.6E+00	c	1.1E+01	c	9.2E+00	c**	8.0E+01(F)	2.4E-03	c**	2.1E-02
				1.4E-03	I	5.0E-03	I	V		1		3.6E+03	Bromomethane	74-83-9	6.8E-01	n	3.0E+00	n	5.2E-01	n	2.2E+00	n	7.5E-01	n		1.9E-04	n	
				5.0E-03	H					1	0.1		Bromophos	2104-96-3	3.1E+01	n	4.1E+02	n					3.5E+00	n		1.5E-02	n	
				2.0E-02	I					1	0.1		Bromoxynil	1689-84-5	1.2E+02	n	1.6E+03	n					3.3E+01	n		2.8E-02	n	
				2.0E-02	I					1	0.1		Bromoxynil Octanoate	1689-99-2	1.2E+02	n	1.6E+03	n					1.4E+01	n		1.2E-01	n	
3.4E+00	C	3.0E-05	I			2.0E-03	I	V		1		6.7E+02	Butadiene, 1,3-	106-99-0	5.8E-02	c**	2.6E-01	c**	9.4E-02	c**	4.1E-01	c**	1.8E-02	c*		9.9E-06	c*	
				1.0E-01	I					1	0.1		Butanol, N-	71-36-3	6.2E+02	n	8.2E+03	n					2.0E+02	n		4.1E-02	n	
1.9E-03	P			2.0E-01	I					1	0.1		Butyl Benzyl Phthlate	85-68-7	2.8E+02	c**	1.2E+03	c*					1.6E+01	c*		2.3E-01	c*	
				2.0E+00	P	3.0E+01	P			1	0.1		Butyl alcohol, sec-	78-92-2	1.2E+04	n	1.6E+05	nm	3.1E+03	n	1.3E+04	n	4.0E+03	n		8.1E-01	n	
				5.0E-02	I					1	0.1		Butylate	2008-41-5	3.1E+02	n	4.1E+03	n					4.6E+01	n		4.5E-02	n	
2.0E-04	C	5.7E-08	C							1	0.1		Butylated hydroxyanisole	25013-16-5	2.7E+03	c	1.2E+04	c	4.9E+01	c	2.2E+02	c	2.4E+02	c		4.5E-01	c	
3.6E-03	P			3.0E-01	P					1	0.1		Butylated hydroxytoluene	128-37-0	1.5E+02	c*	6.4E+02	c*					3.3E+00	c*		9.7E-02	c*	
				5.0E-02	P			V		1		1.1E+02	Butylbenzene, n-	104-51-8	3.9E+02	ns	5.8E+03	ns					1.0E+02	n		3.2E-01	n	
				1.0E-01	X			V		1		1.5E+02	Butylbenzene, sec-	135-98-8	7.8E+02	ns	1.2E+04	ns					2.0E+02	n		5.9E-01	n	
				1.0E-01	X			V		1		1.8E+02	Butylbenzene, tert-	98-06-6	7.8E+02	ns	1.2E+04	ns					6.9E+01	n		1.6E-01	n	
				2.0E-02	A					1	0.1		Cacodylic Acid	75-60-5	1.2E+02	n	1.6E+03	n					4.0E+01	n			n	
		1.8E-03	I	1.0E-03	I	1.0E-05	A			0.025	0.001		Cadmium (Diet)	7440-43-9	7.0E+00	n	9.8E+01	n										
		1.8E-03	I	5.0E-04	I	1.0E-05	A			0.05	0.001		Cadmium (Water)	7440-43-9					1.0E-03	n	4.4E-03	n	9.2E-01	n	5.0E+00	6.9E-02	n	3.8E-01
				5.0E-01	I	2.2E-03	C			1	0.1		Caprolactam	105-60-2	3.1E+03	n	4.0E+04	n	2.3E-01	n	9.6E-01	n	9.9E+02	n		2.5E-01	n	
1.5E-01	C	4.3E-05	C	2.0E-03	I					1	0.1		Captafol	2425-06-1	3.6E+00	c**	1.5E+01	c*	6.5E-02	c	2.9E-01	c	4.0E-01	c**		7.1E-04	c**	
2.3E-03	C	6.6E-07	C	1.3E-01	I					1	0.1		Captan	133-06-2	2.3E+02	c**	1.0E+03	c*	4.3E+00	c	1.9E+01	c	3.1E+01	c**		2.2E-02	c**	
				1.0E-01	I					1	0.1		Carbaryl	63-25-2	6.2E+02	n	8.2E+03	n					1.8E+02	n		1.7E-01	n	
				5.0E-03	I					1	0.1		Carbofuran	1563-66-2	3.1E+01	n	4.1E+02	n					9.4E+00	n	4.0E+01	3.7E-03	n	1.6E-02
				1.0E-01	I	7.0E-01	I	V		1		7.4E+02	Carbon Disulfide	75-15-0	7.7E+01	n	3.5E+02	n	7.3E+01	n	3.1E+02	n	8.1E+01	n		2.4E-02	n	
7.0E-02	I	6.0E-06	I	4.0E-03	I	1.0E-01	I	V		1		4.6E+02	Carbon Tetrachloride	56-23-5	6.5E-01	c*	2.9E+00	c*	4.7E-01	c*	2.0E+00	c*	4.5E-01	c*	5.0E+00	1.8E-04	c*	1.9E-03
				1.0E-02	I					1	0.1		Carbosulfan	55285-14-8	6.2E+01	n	8.2E+02	n					5.1E+00	n		1.2E-01	n	
				1.0E-01	I					1	0.1		Carboxin	5234-68-4	6.2E+02	n	8.2E+03	n					1.9E+02	n		1.0E-01	n	
						9.0E-04	I			1			Ceric oxide	1306-38-3	1.3E+05	nm	5.4E+05	nm	9.4E-02	n	3.9E-01	n						
				1.0E-01	I					1	0.1		Chloral Hydrate	302-17-0	6.2E+02	n	8.2E+03	n					2.0E+02	n		4.0E-02	n	
				1.5E-02	I					1	0.1		Chloramben	133-90-4	9.2E+01	n	1.2E+03	n					2.9E+01	n		7.0E-03	n	
4.0E-01	H									1	0.1		Chloranil	118-75-2	1.3E+00	c	5.7E+00	c					1.8E-01	c		1.5E-04	c	
3.5E-01	I	1.0E-04	I	5.0E-04	I	7.0E-04	I			1	0.04		Chlordane	12789-03-6	1.8E+00	c**	8.0E+00	c**	2.8E-02	c**	1.2E-01	c**	2.2E-01	c**	2.0E+00	1.5E-02	c**	1.4E-01
1.0E+01	I	4.6E-03	C	3.0E-04	I					1	0.1		Chlordecone (Kepone)	143-50-0	5.3E-02	c*	2.3E-01	c	6.1E-04	c	2.7E-03	c	3.5E-03	c*		1.2E-04	c*	
				7.0E-04	A					1	0.1		Chlorfenvinphos	470-90-6	4.3E+00	n	5.8E+01	n					1.1E+00	n		3.1E-03	n	
				2.0E-02	I					1	0.1		Chlorimuron, Ethyl-	90982-32-4	1.2E+02	n	1.6E+03	n					3.9E+01	n		1.3E-02	n	
				1.0E-01	I	1.5E-04	A			1			Chlorine	7782-50-5	7.5E+02	n	1.0E+04	n	1.5E-02	n	6.4E-02	n	2.0E+02	n		9.0E-02	n	
				3.0E-02	I	2.0E-04	I			1			Chlorine Dioxide	10049-04-4	2.3E+02	n	3.4E+03	n	2.1E-02	n	8.8E-02	n	6.0E+01	n			n	
				3.0E-02	I					1			Chlorite (Sodium Salt)	7758-19-2	2.3E+02	n	3.5E+03	n					6.0E+01	n	1.0E+03		n	
						5.0E+01	I	V		1		1.2E+03	Chloro-1,1-difluoroethane, 1-	75-68-3	5.4E+03	ns	2.3E+04	ns	5.2E+03	n	2.2E+04	n	1.0E+04	n		5.2E+00	n	
		3.0E-04	I	2.0E-02	H	2.0E-02	I	V		1		7.5E+02	Chloro-1,3-butadiene, 2-	126-99-8	1.0E-02	c	4.4E-02	c	9.4E-03	c	4.1E-02	c	1.9E-02	c		9.8E-06	c	
4.6E-01	H									1	0.1		Chloro-2-methylaniline HCl, 4-	3165-93-3	1.2E+00	c	5.0E+00	c					1.7E-01	c		1.5E-04	c	
1.0E-01	P	7.7E-05	C	3.0E-03	X					1	0.1		Chloro-2-methylaniline, 4-	95-69-2	5.3E+00	c**	2.3E+01	c*	3.6E-02	c	1.6E-01	c	6.9E-01	c**		3.9E-04	c**	
2.7E-01	X							V		1	0.1	2.8E+04	Chloroacetaldehyde, 2-	107-20-0	2.0E+00	c	8.6E+00	c					2.9E-01	c		5.8E-05	c	
				2.0E-03	H					1	0.1		Chloroacetic Acid	79-11-8	1.2E+01	n	1.6E+02	n					4.0E+00	n	6.0E+01	8.1E-04	n	1.2E-02
						3.0E-05	I			1	0.1		Chloroacetophenone, 2-	532-27-4	4.3E+03	n	1.8E+04	n	3.1E-03	n	1.3E-02	n						

TR = 1E-06
HQ = 0.1

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information													Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vo c	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
2.0E-01	P			4.0E-03	I					1	0.1		Chloroaniline, p-	106-47-8	2.7E+00	c**	1.2E+01	c*					3.6E-01	c*		1.6E-04	c*	
				2.0E-02	I	5.0E-02	P	V		1		7.6E+02	Chlorobenzene	108-90-7	2.8E+01	n	1.3E+02	n	5.2E+00	n	2.2E+01	n	7.8E+00	n	1.0E+02	5.3E-03	n	6.8E-02
1.1E-01	C	3.1E-05	C	2.0E-02	I					1	0.1		Chlorobenzilate	510-15-6	4.8E+00	c*	2.1E+01	c*	9.1E-02	c	4.0E-01	c	3.1E-01	c*		1.0E-03	c*	
				3.0E-02	X					1	0.1		Chlorobenzoic Acid, p-	74-11-3	1.8E+02	n	2.5E+03	n					5.1E+01	n		1.3E-02	n	
				3.0E-03	P	3.0E-01	P	V		1		1.2E+02	Chlorobenzotrifluoride, 4-	98-56-6	2.1E+01	n	2.5E+02	ns	3.1E+01	n	1.3E+02	n	3.5E+00	n		1.2E-02	n	
				4.0E-02	P			V		1		7.3E+02	Chlorobutane, 1-	109-69-3	3.1E+02	n	4.7E+03	ns					6.4E+01	n		2.6E-02	n	
						5.0E+01	I	V		1		1.7E+03	Chlorodifluoromethane	75-45-6	4.9E+03	ns	2.1E+04	ns	5.2E+03	n	2.2E+04	n	1.0E+04	n		4.3E+00	n	
				2.0E-02	P					1	0.1		Chloroethanol, 2-	107-07-3	1.2E+02	n	1.6E+03	n					4.0E+01	n		8.1E-03	n	
3.1E-02	C	2.3E-05	I	1.0E-02	I	9.8E-02	A	V		1		2.5E+03	Chloroform	67-66-3	3.2E-01	c*	1.4E+00	c*	1.2E-01	c*	5.3E-01	c*	2.2E-01	c*	8.0E+01(F)	6.1E-05	c*	2.2E-02
						9.0E-02	I	V		1		1.3E+03	Chloromethane	74-87-3	1.1E+01	n	4.6E+01	n	9.4E+00	n	3.9E+01	n	1.9E+01	n		4.9E-03	n	
2.4E+00	C	6.9E-04	C					V		1		2.6E+04	Chloromethyl Methyl Ether	107-30-2	2.0E-02	c	8.9E-02	c	4.1E-03	c	1.8E-02	c	6.5E-03	c		1.4E-06	c	
3.0E-01	P			3.0E-03	P	1.0E-05	X			1	0.1		Chloronitrobenzene, o-	88-73-3	1.8E+00	c*	7.7E+00	c*	1.0E-03	n	4.4E-03	n	2.3E-01	c*		2.2E-04	c*	
6.3E-03	P			1.0E-03	P	6.0E-04	P			1	0.1		Chloronitrobenzene, p-	100-00-5	6.2E+00	n	8.2E+01	n	6.3E-02	n	2.6E-01	n	1.8E+00	n		1.7E-03	n	
				5.0E-03	I			V		1		2.2E+04	Chlorophenol, 2-	95-57-8	3.9E+01	n	5.8E+02	n					9.1E+00	n		7.4E-03	n	
						4.0E-04	C	V		1		6.2E+02	Chloropicrin	76-06-2	2.0E-01	n	8.2E-01	n	4.2E-02	n	1.8E-01	n	8.3E-02	n		2.5E-05	n	
3.1E-03	C	8.9E-07	C	1.5E-02	I					1	0.1		Chlorothalonil	1897-45-6	9.2E+01	n	7.4E+02	c**	3.2E+00	c	1.4E+01	c	2.2E+01	c**		4.9E-02	c**	
				2.0E-02	I			V		1		9.1E+02	Chlorotoluene, o-	95-49-8	1.6E+02	n	2.3E+03	ns					2.4E+01	n		2.3E-02	n	
				2.0E-02	X			V		1		2.5E+02	Chlorotoluene, p-	106-43-4	1.6E+02	n	2.3E+03	ns					2.5E+01	n		2.4E-02	n	
2.4E+02	C	6.9E-02	C							1	0.1		Chlorozotocin	54749-90-5	2.2E-03	c	9.6E-03	c	4.1E-05	c	1.8E-04	c	3.2E-04	c		7.1E-08	c	
				2.0E-01	I					1	0.1		Chlorpropham	101-21-3	1.2E+03	n	1.6E+04	n					2.8E+02	n		2.6E-01	n	
				1.0E-03	A					1	0.1		Chlorpyrifos	2921-88-2	6.2E+00	n	8.2E+01	n					8.4E-01	n		1.2E-02	n	
				1.0E-02	H					1	0.1		Chlorpyrifos Methyl	5598-13-0	6.2E+01	n	8.2E+02	n					1.2E+01	n		5.4E-02	n	
				5.0E-02	I					1	0.1		Chlorsulfuron	64902-72-3	3.1E+02	n	4.1E+03	n					9.9E+01	n		8.3E-02	n	
				8.0E-04	H					1	0.1		Chlorthiophos	60238-56-4	4.9E+00	n	6.6E+01	n					2.8E-01	n		7.3E-03	n	
				1.5E+00	I					0.013			Chromium(III), Insoluble Salts	16065-83-1	1.2E+04	n	1.8E+05	nm					2.2E+03	n		4.0E+06	n	
5.0E-01	J	8.4E-02	S	3.0E-03	I	1.0E-04	I		M	0.025			Chromium(VI)	18540-29-9	3.0E-01	c*	6.3E+00	c*	1.2E-05	c	1.5E-04	c	3.5E-02	c		6.7E-04	c	
										0.013			Chromium, Total	7440-47-3											1.0E+02			1.8E+05
		9.0E-03	P	3.0E-04	P	6.0E-06	P			1			Cobalt	7440-48-4	2.3E+00	n	3.5E+01	n	3.1E-04	c**	1.4E-03	c**	6.0E-01	n		2.7E-02	n	
		6.2E-04	I						M	1	0.1		Coke Oven Emissions	8007-45-2					1.6E-03	c	2.0E-02	c						
				4.0E-02	H					1			Copper	7440-50-8	3.1E+02	n	4.7E+03	n					8.0E+01	n	1.3E+03	2.8E+00	n	4.6E+01
				5.0E-02	I	6.0E-01	C			1	0.1		Cresol, m-	108-39-4	3.1E+02	n	4.1E+03	n	6.3E+01	n	2.6E+02	n	9.3E+01	n		7.4E-02	n	
				5.0E-02	I	6.0E-01	C			1	0.1		Cresol, o-	95-48-7	3.1E+02	n	4.1E+03	n	6.3E+01	n	2.6E+02	n	9.3E+01	n		7.5E-02	n	
				1.0E-01	A	6.0E-01	C			1	0.1		Cresol, p-	106-44-5	6.2E+02	n	8.2E+03	n	6.3E+01	n	2.6E+02	n	1.9E+02	n		1.5E-01	n	
				1.0E-01	A					1	0.1		Cresol, p-chloro-m-	59-50-7	6.2E+02	n	8.2E+03	n					1.4E+02	n		1.7E-01	n	
				1.0E-01	A	6.0E-01	C			1	0.1		Cresols	1319-77-3	6.2E+02	n	8.2E+03	n	6.3E+01	n	2.6E+02	n	1.9E+02	n		1.5E-01	n	
1.9E+00	H			1.0E-03	P			V		1		1.7E+04	Crotonaldehyde, trans-	123-73-9	3.7E-01	c*	1.7E+00	c*					4.0E-02	c*		8.2E-06	c*	
				1.0E-01	I	4.0E-01	I	V		1		2.7E+02	Cumene	98-82-8	1.9E+02	n	9.9E+02	ns	4.2E+01	n	1.8E+02	n	4.5E+01	n		7.4E-02	n	
2.2E-01	C	6.3E-05	C							1	0.1		Cupferron	135-20-6	2.4E+00	c	1.0E+01	c	4.5E-02	c	1.9E-01	c	3.5E-01	c		6.1E-04	c	
8.4E-01	H			2.0E-03	H					1	0.1		Cyanazine	21725-46-2	6.3E-01	c*	2.7E+00	c*					8.7E-02	c*		4.1E-05	c*	
													Cyanides															
				1.0E-03	I					1			~Calcium Cyanide	592-01-8	7.8E+00	n	1.2E+02	n					2.0E+00	n			n	
				5.0E-03	I					1			~Copper Cyanide	544-92-3	3.9E+01	n	5.8E+02	n					1.0E+01	n			n	
				6.0E-04	I	8.0E-04	S	V		1		1.0E+07	~Cyanide (CN-)	57-12-5	2.1E+00	n	1.3E+01	n	8.3E-02	n	3.5E-01	n	1.5E-01	n	2.0E+02	1.5E-03	n	2.0E+00
				1.0E-03	I			V		1			~Cyanogen	460-19-5	7.8E+00	n	1.2E+02	n					2.0E+00	n			n	
				9.0E-02	I			V		1			~Cyanogen Bromide	506-68-3	7.0E+02	n	1.1E+04	n					1.8E+02	n			n	
				5.0E-02	I			V		1			~Cyanogen Chloride	506-77-4	3.9E+02	n	5.8E+03	n					1.0E+02	n			n	
				6.0E-04	I	8.0E-04	I	V		1		1.0E+07	~Hydrogen Cyanide	74-90-8	2.3E+00	n	1.5E+01	n	8.3E-02	n	3.5E-01	n	1.5E-01	n		1.5E-03	n	
				2.0E-03	I					1			~Potassium Cyanide	151-50-8	1.6E+01	n	2.3E+02	n					4.0E+00	n			n	
				5.0E-03	I					0.04			~Potassium Silver Cyanide	506-61-6	3.9E+01	n	5.8E+02	n					8.2E+00	n			n	
				1.0E-01	I					0.04			~Silver Cyanide	506-64-9	7.8E+02	n	1.2E+04	n					1.8E+02	n			n	
				1.0E-03	I					1			~Sodium Cyanide	143-33-9	7.8E+00	n	1.2E+02	n					2.0E+00	n	2.0E+02		n	
				2.0E-04	P					1			~Thiocyanates	NA	1.6E+00	n	2.3E+01	n					4.0E-01	n			n	
				2.0E-04	X					1			~Thiocyanic Acid	463-56-9									4.0E-01	n			n	
				5.0E-02	I					1			~Zinc Cyanide	557-21-1	3.9E+02	n	5.8E+03	n					1.0E+02	n			n	
						6.0E+00	I	V		1		1.2E+02	Cyclohexane	110-82-7	6.5E+02	ns	2.7E+03	ns	6.3E+02	n	2.6E+03	n	1.3E+03	n		1.3E+00	n	
2.3E-02	H									1	0.1		Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	2.3E+01	c	1.0E+02	c					2.4E+00	c		1.4E-02	c	
				5.0E+00	I	7.0E-01	P			1	0.1		Cyclohexanone	108-94-1	3.1E+04	n	4.1E+05	nm	7.3E+01	n	3.1E+02	n	9.9E+03	n		2.3E+00	n	
				5.0E-03	P	1.0E+00	X	V		1		2.8E+02	Cyclohexene	110-83-8	3.1E+01	n	2.9E+02	ns	1.0E+02	n	4.4E+02	n	7.0E+00	n		4.6E-03	n	
				2.0E-01	I					1	0.1		Cyclohexylamine	108-91-8	1.2E+03	n	1.6E+04	n					3.8E+02	n		1.0E-01	n	
				5.0E-03	I					1	0.1		Cyhalothrin/karate	68085-85-8	3.1E+01	n	4.1E+02	n					1.0E+01	n		6.8E+00	n	
				1.0E-02	I					1	0.1		Cypermethrin	52315-07-8	6.2E+01	n	8.2E+02	n					2.0E+01	n		3.2E+00	n	
				7.5E-03	I					1	0.1		Cyromazine	66215-27-8	4.6E+01	n	6.2E+02	n					1.5E+01	n		3.8E-03	n	
2.4E-01	I	6.9E-05	C							1	0.1		DDD	72-54-8	2.2E+00	c	9.6E+00	c	4.1E-02	c	1.8E-01	c	3.1E-02	c		7.2E-03	c	
3.4E-01	I	9.7E-05	C							1	0.1		DDE, p,p'-	72-55-9	1.6E+00	c	6.8E+00	c	2.9E-02	c	1.3E-01	c	2.3E-01	c		5.4E-02	c	
3.4E-01	I	9.7E-05	I	5.0E-04	I					1	0.03		DDT	50-29-3	1.9E+00	c**	8.6E+00	c**	2.9E-02	c	1.3E-01	c	2.3E-01	c**		7.7E-02	c**	

TR=1E-06
HQ=0.1

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information													Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	voc	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				1.0E-02	I					1	0.1		Dacthal	1861-32-1	6.2E+01	n	8.2E+02	n					1.2E+01	n		1.5E-02	n	
				3.0E-02	I					1	0.1		Dalapon	75-99-0	1.8E+02	n	2.5E+03	n					6.0E+01	n	2.0E+02	1.2E-02	n	4.1E-02
7.0E-04	I			7.0E-03	I					1	0.1		Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	4.3E+01	n	5.8E+02	n					1.4E+01	n		7.8E+00	n	
				4.0E-05	I					1	0.1		Demeton	8065-48-3	2.5E-01	n	3.3E+00	n					6.7E-02	n			n	
1.2E-03	I			6.0E-01	I					1	0.1		Di(2-ethylhexyl)adipate	103-23-1	4.4E+02	c**	1.9E+03	c*					6.5E+01	c*	4.0E+02	4.7E+00	c*	2.9E+01
6.1E-02	H									1	0.1		Diallate	2303-16-4	8.7E+00	c	3.8E+01	c					5.2E-01	c		7.8E-04	c	
				7.0E-04	A					1	0.1		Diazinon	333-41-5	4.3E+00	n	5.8E+01	n					1.0E+00	n		6.5E-03	n	
				1.0E-02	X			V		1			Dibenzothiophene	132-65-0	7.8E+01	n	1.2E+03	n					6.5E+00	n		1.2E-01	n	
8.0E-01	P	6.0E-03	P	2.0E-04	P	2.0E-04	I	V	M	1		9.8E+02	Dibromo-3-chloropropane, 1,2-	96-12-8	5.3E-03	c*	6.4E-02	c*	1.7E-04	c	2.0E-03	c*	3.3E-04	c	2.0E-01	1.4E-07	c	8.6E-05
				1.0E-02	I					1	0.1		Dibromobenzene, 1,4-	106-37-6	6.2E+01	n	8.2E+02	n					1.3E+01	n		1.2E-02	n	
8.4E-02	I	2.7E-05	C	2.0E-02	I			V		1	0.1	8.0E+02	Dibromochloromethane	124-48-1	7.3E-01	c	3.2E+00	c	1.0E-01	c	4.5E-01	c	1.7E-01	c	8.0E+01(F)	4.5E-05	c	2.1E-02
2.0E+00	I	6.0E-04	I	9.0E-03	I	9.0E-03	I	V		1		1.3E+03	Dibromoethane, 1,2-	106-93-4	3.6E-02	c	1.6E-01	c	4.7E-03	c	2.0E-02	c	7.5E-03	c	5.0E-02	2.1E-06	c	1.4E-05
				1.0E-02	H	4.0E-03	X	V		1		2.8E+03	Dibromomethane (Methylene Bromide)	74-95-3	2.3E+00	n	9.8E+00	n	4.2E-01	n	1.8E+00	n	8.0E-01	n		2.0E-04	n	
				3.0E-04	P					1	0.1		Dibutyltin Compounds	NA	1.8E+00	n	2.5E+01	n					6.0E-01	n			n	
				3.0E-02	I					1	0.1		Dicamba	1918-00-9	1.8E+02	n	2.5E+03	n					5.7E+01	n		1.5E-02	n	
		4.2E-03	P					V		1		5.2E+02	Dichloro-2-butene, 1,4-	764-41-0	7.4E-03	c	3.2E-02	c	6.7E-04	c	2.9E-03	c	1.3E-03	c		6.2E-07	c	
		4.2E-03	P					V		1	0.1	5.2E+02	Dichloro-2-butene, cis-1,4-	1476-11-5	7.4E-03	c	3.2E-02	c	6.7E-04	c	2.9E-03	c	1.3E-03	c		6.2E-07	c	
		4.2E-03	P					V		1	0.1	7.6E+02	Dichloro-2-butene, trans-1,4-	110-57-6	7.4E-03	c	3.2E-02	c	6.7E-04	c	2.9E-03	c	1.3E-03	c		6.2E-07	c	
5.0E-02	I			4.0E-03	I					1	0.1		Dichloroacetic Acid	79-43-6	1.1E+01	c**	4.6E+01	c**					1.5E+00	c**	6.0E+01	3.1E-04	c**	1.2E-02
				9.0E-02	I	2.0E-01	H	V		1		3.8E+02	Dichlorobenzene, 1,2-	95-50-1	1.8E+02	n	9.3E+02	ns	2.1E+01	n	8.8E+01	n	3.0E+01	n	6.0E+02	3.0E-02	n	5.8E-01
5.4E-03	C	1.1E-05	C	7.0E-02	A	8.0E-01	I	V		1			Dichlorobenzene, 1,4-	106-46-7	2.6E+00	c	1.1E+01	c	2.6E-01	c	1.1E+00	c	4.8E-01	c	7.5E+01	4.6E-04	c	7.2E-02
4.5E-01	I	3.4E-04	C							1	0.1		Dichlorobenzidine, 3,3'-	91-94-1	1.2E+00	c	5.1E+00	c	8.3E-03	c	3.6E-02	c	1.2E-01	c		8.1E-04	c	
				9.0E-03	X					1	0.1		Dichlorobenzophenone, 4,4'-	90-98-2	5.5E+01	n	7.4E+02	n					7.8E+00	n		4.7E-02	n	
				2.0E-01	I	1.0E-01	X	V		1		8.5E+02	Dichlorodifluoromethane	75-71-8	8.7E+00	n	3.7E+01	n	1.0E+01	n	4.4E+01	n	2.0E+01	n		3.0E-02	n	
5.7E-03	C	1.6E-06	C	2.0E-01	P			V		1		1.7E+03	Dichloroethane, 1,1-	75-34-3	3.6E+00	c	1.6E+01	c	1.8E+00	c	7.7E+00	c	2.7E+00	c		7.8E-04	c	
9.1E-02	I	2.6E-05	I	6.0E-03	X	7.0E-03	P	V		1		3.0E+03	Dichloroethane, 1,2-	107-06-2	4.6E-01	c**	2.0E+00	c**	1.1E-01	c**	4.7E-01	c**	1.7E-01	c**	5.0E+00	4.8E-05	c**	1.4E-03
				5.0E-02	I	2.0E-01	I	V		1		1.2E+03	Dichloroethylene, 1,1-	75-35-4	2.3E+01	n	1.0E+02	n	2.1E+01	n	8.8E+01	n	2.8E+01	n	7.0E+00	1.0E-02	n	2.5E-03
				2.0E-03	I			V		1		2.4E+03	Dichloroethylene, 1,2-cis-	156-59-2	1.6E+01	n	2.3E+02	n					3.6E+00	n	7.0E+01	1.1E-03	n	2.1E-02
				2.0E-02	I			V		1		1.7E+03	Dichloroethylene, 1,2-trans-	156-60-5	1.6E+02	n	2.3E+03	ns					3.6E+01	n	1.0E+02	1.1E-02	n	2.9E-02
				3.0E-03	I					1	0.1		Dichlorophenol, 2,4-	120-83-2	1.8E+01	n	2.5E+02	n					4.6E+00	n		5.4E-03	n	
				1.0E-02	I					1	0.05		Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	6.9E+01	n	9.7E+02	n					1.7E+01	n	7.0E+01	4.5E-03	n	1.8E-02
				8.0E-03	I					1	0.1		Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	4.9E+01	n	6.6E+02	n					1.2E+01	n		4.8E-03	n	
3.6E-02	C	1.0E-05	C	9.0E-02	A	4.0E-03	I	V		1		1.4E+03	Dichloropropane, 1,2-	78-87-5	1.0E+00	c**	4.4E+00	c**	2.8E-01	c**	1.2E+00	c**	4.4E-01	c**	5.0E+00	1.5E-04	c**	1.7E-03
				2.0E-02	P			V		1		1.5E+03	Dichloropropane, 1,3-	142-28-9	1.6E+02	n	2.3E+03	ns					3.7E+01	n		1.3E-02	n	
				3.0E-03	I					1	0.1		Dichloropropanol, 2,3-	616-23-9	1.8E+01	n	2.5E+02	n					5.9E+00	n		1.3E-03	n	
1.0E-01	I	4.0E-06	I	3.0E-02	I	2.0E-02	I	V		1		1.6E+03	Dichloropropene, 1,3-	542-75-6	1.8E+00	c**	8.2E+00	c**	7.0E-01	c**	3.1E+00	c**	4.7E-01	c**		1.7E-04	c**	
2.9E-01	I	8.3E-05	C	5.0E-04	I	5.0E-04	I			1	0.1		Dichlorvos	62-73-7	1.8E+00	c**	8.0E+00	c**	3.4E-02	c**	1.5E-01	c**	2.6E-01	c**		8.1E-05	c**	
				8.0E-02	P	3.0E-04	X	V		1			Dicyclopentadiene	77-73-6	1.3E-01	n	5.4E-01	n	3.1E-02	n	1.3E-01	n	6.3E-02	n		2.2E-04	n	
1.6E+01	I	4.6E-03	I	5.0E-05	I					1	0.1		Dieldrin	60-57-1	3.3E-02	c**	1.4E-01	c*	6.1E-04	c	2.7E-03	c	1.7E-03	c*		6.9E-05	c*	
		3.0E-04	C			5.0E-03	I			1	0.1		Diesel Engine Exhaust	NA					9.4E-03	c*	4.1E-02	c*						
				2.0E-03	P	2.0E-04	P			1	0.1		Diethanolamine	111-42-2	1.2E+01	n	1.6E+02	n	2.1E-02	n	8.8E-02	n	4.0E+00	n		8.1E-04	n	
				3.0E-02	P	1.0E-04	P			1	0.1		Diethylene Glycol Monobutyl Ether	112-34-5	1.8E+02	n	2.4E+03	n	1.0E-02	n	4.4E-02	n	6.0E+01	n		1.3E-02	n	
				6.0E-02	P	3.0E-04	P			1	0.1		Diethylene Glycol Monoethyl Ether	111-90-0	3.7E+02	n	4.8E+03	n	3.1E-02	n	1.3E-01	n	1.2E+02	n		2.4E-02	n	
				1.0E-03	P					1	0.1		Diethylformamide	617-84-5	6.2E+00	n	8.2E+01	n					2.0E+00	n		4.1E-04	n	
3.5E+02	C	1.0E-01	C							1	0.1		Diethylstilbestrol	56-53-1	1.5E-03	c	6.6E-03	c	2.8E-05	c	1.2E-04	c	4.9E-05	c		2.7E-05	c	
				8.0E-02	I					1	0.1		Difenzoquat	43222-48-6	4.9E+02	n	6.6E+03	n					1.6E+02	n			n	
				2.0E-02	I					1	0.1		Diflubenzuron	35367-38-5	1.2E+02	n	1.6E+03	n					2.9E+01	n		3.3E-02	n	
						4.0E+01	I	V		1		1.4E+03	Difluoroethane, 1,1-	75-37-6	4.8E+03	ns	2.0E+04	ns	4.2E+03	n	1.8E+04	n	8.3E+03	n		2.8E+00	n	
4.4E-02	C	1.3E-05	C					V		1	0.1		Dihydrosafrole	94-58-6	2.6E-01	c	1.1E+00	c	2.2E-01	c	9.4E-01	c	3.0E-01	c		3.7E-04	c	
						7.0E-01	P	V		1		2.3E+03	Diisopropyl Ether	108-20-3	2.2E+02	n	9.4E+02	n	7.3E+01	n	3.1E+02	n	1.5E+02	n		3.7E-02	n	
				8.0E-02	I			V		1		5.3E+02	Diisopropyl Methylphosphonate	1445-75-6	6.3E+02	ns	9.3E+03	ns					1.6E+02	n		4.5E-02	n	
				2.0E-02	I					1	0.1		Dimethipin	55290-64-7	1.2E+02	n	1.6E+03	n					4.0E+01	n		8.8E-03	n	
				2.0E-04	I					1	0.1		Dimethoate	60-51-5	1.2E+00	n	1.6E+01	n					4.0E-01	n		9.0E-05	n	
1.6E+00	P									1	0.1		Dimethoxybenzidine, 3,3'-	119-90-4	3.3E-01	c	1.4E+00	c					4.7E-02	c		5.7E-05	c	
1.7E-03	P			6.0E-02	P					1	0.1		Dimethyl methylphosphonate	756-79-6	3.1E+02	c**	1.4E+03	c**					4.6E+01	c**		9.6E-03	c**	
4.6E+00	C	1.3E-03	C							1	0.1		Dimethylamino azobenzene [p-]	60-11-7	1.2E-01	c	5.0E-01	c	2.2E-03	c	9.4E-03	c	4.9E-03	c		2.1E-05	c	
5.8E-01	H									1	0.1		Dimethylaniline HCl, 2,4-	21436-96-4	9.2E-01	c	4.0E+00	c					1.3E-01	c		1.2E-04	c	
2.0E-01	P			2.0E-03	X					1	0.1		Dimethylaniline, 2,4-	95-68-1	2.7E+00	c**	1.2E+01	c*					3.7E-01	c*		2.1E-04	c*	
				2.0E-03	I			V		1		8.3E+02	Dimethylaniline, N,N-	121-69-7	1.6E+01	n	2.3E+02	n					3.5E+00	n		1.3E-03	n	
1.1E+01	P									1	0.1		Dimethylbenzidine, 3,3'-	119-93-7	4.8E-02	c	2.1E-01	c					6.5E-03	c		4.3E-05	c	
				1.0E-01	P	3.0E-02	I			1	0.1		Dimethylformamide	68-12-2	6.2E+02	n	8.2E+03	n	3.1E+00	n	1.3E+01	n	2.0E+02	n		4.0E-02	n	
				1.0E-04	X	2.0E-06	X			1	0.1		Dimethylhydrazine, 1,1-	57-14-7	6.2E-01	n	8.2E+00	n	2.1E-04	n	8.8E-04	n	2.0E-01	n		4.5E-05	n	
5.5E+02	C	1.6E-01	C							1	0.1		Dimethylhydrazine, 1,2-	540-73-8	9.7E-04	c	4.2E-03	c	1.8E-05	c	7.7E-05	c	1.4E-04	c		3.2E-08	c	
				2.0E-02	I					1	0.1		Dimethylphenol, 2,4-	105-67-9	1.2E+02	n	1.6E+03	n					3.6E+01	n		4.2E-02	n	
				6.0E-04	I					1	0.1		Dimethylphenol, 2,6-	576-26-1	3.7E+00	n	4.9E+01	n					1.1E+00	n		1.3E-03	n	

HQ=0.1 TR=1E-06

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information													Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	voc	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				1.0E-03	I					1	0.1		Dimethylphenol, 3,4-	95-65-8	6.2E+00	n	8.2E+01	n					1.8E+00	n		2.1E-03	n	
4.5E-02	C	1.3E-05	C					V		1	0.1	1.1E+03	Dimethylvinylchloride	513-37-1	2.1E-01	c	9.3E-01	c	2.2E-01	c	9.4E-01	c	3.3E-01	c		2.0E-04	c	
				8.0E-05	X					1	0.1		Dinitro-o-cresol, 4,6-	534-52-1	4.9E-01	n	6.6E+00	n					1.5E-01	n		2.6E-04	n	
				2.0E-03	I					1	0.1		Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	1.2E+01	n	1.6E+02	n					2.3E+00	n		7.7E-02	n	
				1.0E-04	P					1	0.1		Dinitrobenzene, 1,2-	528-29-0	6.2E-01	n	8.2E+00	n					1.9E-01	n		1.8E-04	n	
				1.0E-04	I					1	0.1		Dinitrobenzene, 1,3-	99-65-0	6.2E-01	n	8.2E+00	n					2.0E-01	n		1.8E-04	n	
				1.0E-04	P					1	0.1		Dinitrobenzene, 1,4-	100-25-4	6.2E-01	n	8.2E+00	n					2.0E-01	n		1.8E-04	n	
				2.0E-03	I					1	0.1		Dinitrophenol, 2,4-	51-28-5	1.2E+01	n	1.6E+02	n					3.9E+00	n		4.4E-03	n	
6.8E-01	I									1	0.1		Dinitrotoluene Mixture, 2,4/2,6-	NA	7.8E-01	c	3.4E+00	c					1.1E-01	c		1.5E-04	c	
3.1E-01	C	8.9E-05	C	2.0E-03	I					1	0.102		Dinitrotoluene, 2,4-	121-14-2	1.7E+00	c**	7.4E+00	c*	3.2E-02	c	1.4E-01	c	2.4E-01	c*		3.2E-04	c*	
1.5E+00	P			3.0E-04	X					1	0.099		Dinitrotoluene, 2,6-	606-20-2	3.6E-01	c**	1.5E+00	c*					4.8E-02	c*		6.7E-05	c*	
				2.0E-03	S					1	0.006		Dinitrotoluene, 2-Amino-4,6-	35572-78-2	1.5E+01	n	2.3E+02	n					3.9E+00	n		3.0E-03	n	
				2.0E-03	S					1	0.009		Dinitrotoluene, 4-Amino-2,6-	19406-51-0	1.5E+01	n	2.3E+02	n					3.9E+00	n		3.0E-03	n	
4.5E-01	X			9.0E-04	X					1	0.1		Dinitrotoluene, Technical grade	25321-14-6	1.2E+00	c**	5.1E+00	c*					1.6E-01	c*		2.2E-04	c*	
				1.0E-03	I					1	0.1		Dinoseb	88-85-7	6.2E+00	n	8.2E+01	n					1.5E+00	n	7.0E+00	1.3E-02	n	6.2E-02
1.0E-01	I	5.0E-06	I	3.0E-02	I	3.0E-02	I			1	0.1		Dioxane, 1,4-	123-91-1	5.3E+00	c*	2.3E+01	c	5.6E-01	c**	2.5E+00	c**	7.8E-01	c*		1.6E-04	c*	
													Dioxins															
6.2E+03	I	1.3E+00	I							1	0.03		~Hexachlorodibenzo-p-dioxin, Mixture	NA	1.0E-04	c	4.7E-04	c	2.2E-06	c	9.4E-06	c	1.3E-05	c		1.7E-05	c	
1.3E+05	C	3.8E+01	C	7.0E-10	I	4.0E-08	C			1	0.03		~TCDD, 2,3,7,8-	1746-01-6	4.9E-06	c**	2.2E-05	c**	7.4E-08	c*	3.2E-07	c*	6.0E-07	c**	3.0E-05	3.0E-07	c**	1.5E-05
				3.0E-02	I					1	0.1		Diphenamid	957-51-7	1.8E+02	n	2.5E+03	n					5.3E+01	n		5.2E-01	n	
				8.0E-04	X					1	0.1		Diphenyl Sulfone	127-63-9	4.9E+00	n	6.6E+01	n					1.5E+00	n		3.6E-03	n	
				2.5E-02	I					1	0.1		Diphenylamine	122-39-4	1.5E+02	n	2.1E+03	n					3.1E+01	n		5.8E-02	n	
8.0E-01	I	2.2E-04	I							1	0.1		Diphenylhydrazine, 1,2-	122-66-7	6.7E-01	c	2.9E+00	c	1.3E-02	c	5.6E-02	c	7.7E-02	c		2.5E-04	c	
				2.2E-03	I					1	0.1		Diquat	85-00-7	1.4E+01	n	1.8E+02	n					4.4E+00	n	2.0E+01	8.3E-02	n	3.7E-01
7.4E+00	C	2.1E-03	C							1	0.1		Direct Black 38	1937-37-7	7.2E-02	c	3.1E-01	c	1.3E-03	c	5.8E-03	c	1.1E-02	c		5.1E+00	c	
7.4E+00	C	2.1E-03	C							1	0.1		Direct Blue 6	2602-46-2	7.2E-02	c	3.1E-01	c	1.3E-03	c	5.8E-03	c	1.1E-02	c		1.7E+01	c	
6.7E+00	C	1.9E-03	C							1	0.1		Direct Brown 95	16071-86-6	7.9E-02	c	3.4E-01	c	1.5E-03	c	6.5E-03	c	1.2E-02	c			c	
				4.0E-05	I					1	0.1		Disulfoton	298-04-4	2.5E-01	n	3.3E+00	n					5.0E-02	n		9.4E-05	n	
				1.0E-02	I			V		1	0.1		Dithiane, 1,4-	505-29-3	6.2E+01	n	8.2E+02	n					2.0E+01	n		9.7E-03	n	
				2.0E-03	I					1	0.1		Diuron	330-54-1	1.2E+01	n	1.6E+02	n					3.6E+00	n		1.5E-03	n	
				4.0E-03	I					1	0.1		Dodine	2439-10-3	2.5E+01	n	3.3E+02	n					8.0E+00	n		4.1E-02	n	
				2.5E-02	I			V		1			EPTC	759-94-4	2.0E+02	n	2.9E+03	n					3.8E+01	n		2.0E-02	n	
				6.0E-03	I					1	0.1		Endosulfan	115-29-7	3.7E+01	n	4.9E+02	n					1.0E+01	n		1.4E-01	n	
				2.0E-02	I					1	0.1		Endothall	145-73-3	1.2E+02	n	1.6E+03	n					3.8E+01	n	1.0E+02	9.1E-03	n	2.4E-02
				3.0E-04	I					1	0.1		Endrin	72-20-8	1.8E+00	n	2.5E+01	n					2.3E-01	n	2.0E+00	9.2E-03	n	8.1E-02
9.9E-03	I	1.2E-06	I	6.0E-03	P	1.0E-03	I	V		1		1.1E+04	Epichlorohydrin	106-89-8	1.9E+00	n	8.2E+00	n	1.0E-01	n	4.4E-01	n	2.0E-01	n		4.5E-05	n	
						2.0E-02	I	V		1		1.5E+04	Epoxybutane, 1,2-	106-88-7	1.6E+01	n	6.7E+01	n	2.1E+00	n	8.8E+00	n	4.2E+00	n		9.2E-04	n	
				5.0E-03	I					1	0.1		Ethephon	16672-87-0	3.1E+01	n	4.1E+02	n					1.0E+01	n		2.1E-03	n	
				5.0E-04	I					1	0.1		Ethion	563-12-2	3.1E+00	n	4.1E+01	n					4.3E-01	n		8.5E-04	n	
				1.0E-01	P	6.0E-02	P			1	0.1		Ethoxyethanol Acetate, 2-	111-15-9	6.2E+02	n	8.2E+03	n	6.3E+00	n	2.6E+01	n	2.0E+02	n		4.2E-02	n	
				9.0E-02	P	2.0E-01	I			1	0.1		Ethoxyethanol, 2-	110-80-5	5.5E+02	n	7.4E+03	n	2.1E+01	n	8.8E+01	n	1.8E+02	n		3.6E-02	n	
				9.0E-01	I	7.0E-02	P	V		1		1.1E+04	Ethyl Acetate	141-78-6	6.2E+01	n	2.6E+02	n	7.3E+00	n	3.1E+01	n	1.4E+01	n		3.1E-03	n	
4.8E-02	H							V		1		2.5E+03	Ethyl Acrylate	140-88-5	1.4E+01	c	6.8E+01	c					1.6E+00	c		3.5E-04	c	
						1.0E+01	I	V		1		2.1E+03	Ethyl Chloride (Chloroethane)	75-00-3	1.4E+03	n	5.7E+03	ns	1.0E+03	n	4.4E+03	n	2.1E+03	n		5.9E-01	n	
				2.0E-01	I			V		1		1.0E+04	Ethyl Ether	60-29-7	1.6E+03	n	2.3E+04	ns					3.9E+02	n		8.8E-02	n	
				9.0E-02	H	3.0E-01	P	V		1		1.1E+03	Ethyl Methacrylate	97-63-2	1.4E+02	n	7.1E+02	n	3.1E+01	n	1.3E+02	n	4.6E+01	n		1.1E-02	n	
				1.0E-05	I					1	0.1		Ethyl-p-nitrophenyl Phosphonate	2104-64-5	6.2E-02	n	8.2E-01	n					8.9E-03	n		2.8E-04	n	
1.1E-02	C	2.5E-06	C	1.0E-01	I	1.0E+00	I	V		1		4.8E+02	Ethylbenzene	100-41-4	5.8E+00	c*	2.5E+01	c*	1.1E+00	c*	4.9E+00	c*	1.5E+00	c*	7.0E+02	1.7E-03	c*	7.8E-01
				7.0E-02	P					1	0.1		Ethylene Cyanohydrin	109-78-4	4.3E+02	n	5.8E+03	n					1.4E+02	n		2.8E-02	n	
				9.0E-02	P					1	0.1		Ethylene Diamine	107-15-3	5.5E+02	n	7.4E+03	n					1.8E+02	n		4.1E-02	n	
				2.0E+00	I	4.0E-01	C			1	0.1		Ethylene Glycol	107-21-1	1.2E+04	n	1.6E+05	nm	4.2E+01	n	1.8E+02	n	4.0E+03	n		8.1E-01	n	
				1.0E-01	I	1.6E+00	I			1	0.1		Ethylene Glycol Monobutyl Ether	111-76-2	6.2E+02	n	8.2E+03	n	1.7E+02	n	7.0E+02	n	2.0E+02	n		4.1E-02	n	
3.1E-01	C	8.8E-05	C			3.0E-02	C	V		1		1.2E+05	Ethylene Oxide	75-21-8	1.8E-01	c	7.9E-01	c	3.2E-02	c*	1.4E-01	c*	5.1E-02	c		1.1E-05	c	
4.5E-02	C	1.3E-05	C	8.0E-05	I					1	0.1		Ethylene Thiourea	96-45-7	4.9E-01	n	6.6E+00	n	2.2E-01	c	9.4E-01	c	1.6E-01	n		3.6E-05	n	
6.5E+01	C	1.9E-02	C					V		1	0.1	1.5E+05	Ethyleneimine	151-56-4	2.5E-03	c	1.1E-02	c	1.5E-04	c	6.5E-04	c	2.4E-04	c		5.2E-08	c	
				3.0E+00	I					1	0.1		Ethylphthalyl Ethyl Glycolate	84-72-0	1.8E+04	n	2.5E+05	nm					5.8E+03	n		1.3E+01	n	
				8.0E-03	I					1	0.1		Express	101200-48-0	4.9E+01	n	6.6E+02	n					1.6E+01	n		6.1E-03	n	
				2.5E-04	I					1	0.1		Fenamiphos	22224-92-6	1.5E+00	n	2.1E+01	n					4.4E-01	n		4.3E-04	n	
				2.5E-02	I					1	0.1		Fenpropathrin	39515-41-8	1.5E+02	n	2.1E+03	n					6.4E+00	n		2.9E-01	n	
				1.3E-02	I					1	0.1		Fluometuron	2164-17-2	8.0E+01	n	1.1E+03	n					2.4E+01	n		1.9E-02	n	
				4.0E-02	C	1.3E-02	C			1			Fluoride	16984-48-8	3.1E+02	n	4.7E+03	n	1.4E+00	n	5.7E+00	n	8.0E+01	n		1.2E+01	n	
				6.0E-02	I	1.3E-02	C			1			Fluorine (Soluble Fluoride)	7782-41-4	4.7E+02	n	7.0E+03	n	1.4E+00	n	5.7E+00	n	1.2E+02	n	4.0E+03	1.8E+01	n	6.0E+02
				8.0E-02	I					1	0.1		Fluridone	59756-60-4	4.9E+02	n	6.6E+03	n					1.4E+02	n		1.6E+01	n	
				2.0E-02	I					1	0.1		Flurprimidol	56425-91-3	1.2E+02	n	1.6E+03	n					3.4E+01	n		1.6E-01	n	
				6.0E-02	I					1	0.1		Flutolanil	66332-96-5	3.7E+02	n	4.9E+03	n					9.5E+01	n		5.0E-01	n	

TR=1E-06
HQ=0.1

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R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information													Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				1.0E-02	I					1	0.1		Fluvalinate	69409-94-5	6.2E+01	n	8.2E+02	n					2.0E+01	n		2.9E+01	n	
3.5E-03	I			1.0E-01	I					1	0.1		Folpet	133-07-3	1.5E+02	c**	6.6E+02	c*					2.0E+01	c**		4.7E-03	c**	
1.9E-01	I									1	0.1		Fomesafen	72178-02-0	2.8E+00	c	1.2E+01	c					3.9E-01	c		1.3E-03	c	
				2.0E-03	I					1	0.1		Fonofos	944-22-9	1.2E+01	n	1.6E+02	n					2.4E+00	n		4.7E-03	n	
		1.3E-05	I	2.0E-01	I	9.8E-03	A			1	0.1		Formaldehyde	50-00-0	1.2E+03	n	1.6E+04	n	2.2E-01	c**	9.4E-01	c**	4.0E+02	n		8.0E-02	n	
				9.0E-01	P	3.0E-04	X			1	0.1		Formic Acid	64-18-6	4.9E+03	n	5.2E+04	n	3.1E-02	n	1.3E-01	n	1.8E+03	n		3.6E-01	n	
				3.0E+00	I					1	0.1		Fosetyl-AL	39148-24-8	1.8E+04	n	2.5E+05	nm					6.0E+03	n			n	
													Furans															
				1.0E-03	X			V		1	0.03		~Dibenzofuran	132-64-9	7.2E+00	n	1.0E+02	n					7.9E-01	n		1.5E-02	n	
				1.0E-03	I			V		1	0.03	6.2E+03	~Furan	110-00-9	7.2E+00	n	1.0E+02	n					1.9E+00	n		7.3E-04	n	
				9.0E-01	I	2.0E+00	I	V		1	0.03	1.7E+05	~Tetrahydrofuran	109-99-9	1.8E+03	n	9.6E+03	n	2.1E+02	n	8.8E+02	n	3.4E+02	n		7.5E-02	n	
3.8E+00	H									1	0.1		Furazolidone	67-45-8	1.4E-01	c	6.1E-01	c					2.0E-02	c		3.9E-05	c	
				3.0E-03	I	5.0E-02	H			1	0.1		Furfural	98-01-1	1.8E+01	n	2.5E+02	n	5.2E+00	n	2.2E+01	n	6.0E+00	n		1.3E-03	n	
1.5E+00	C	4.3E-04	C							1	0.1		Furium	531-82-8	3.6E-01	c	1.5E+00	c	6.5E-03	c	2.9E-02	c	5.0E-02	c		6.8E-05	c	
3.0E-02	I	8.6E-06	C							1	0.1		Furmecyclox	60568-05-0	1.8E+01	c	7.7E+01	c	3.3E-01	c	1.4E+00	c	1.1E+00	c		1.2E-03	c	
				4.0E-04	I					1	0.1		Glufosinate, Ammonium	77182-82-2	2.5E+00	n	3.3E+01	n					8.0E-01	n		1.8E-04	n	
						8.0E-05	C			1	0.1		Glutaraldehyde	111-30-8	1.1E+04	n	4.8E+04	n	8.3E-03	n	3.5E-02	n						
				4.0E-04	I	1.0E-03	H			1	0.1		Glycidyl	765-34-4	2.5E+00	n	3.3E+01	n	1.0E-01	n	4.4E-01	n	8.0E-01	n		1.6E-04	n	
				1.0E-01	I					1	0.1		Glyphosate	1071-83-6	6.2E+02	n	8.2E+03	n					2.0E+02	n	7.0E+02	8.8E-01	n	3.1E+00
				3.0E-03	I					1	0.1		Goal	42874-03-3	1.8E+01	n	2.5E+02	n					3.2E+00	n		2.5E-01	n	
				1.0E-02	X					1	0.1		Guanidine	113-00-8	6.2E+01	n	8.2E+02	n					2.0E+01	n		4.5E-03	n	
				2.0E-02	P					1	0.1		Guanidine Chloride	50-01-1	1.2E+02	n	1.6E+03	n					4.0E+01	n			n	
				3.0E-03	A	1.0E-02	A			1	0.1		Guthion	86-50-0	1.8E+01	n	2.5E+02	n	1.0E+00	n	4.4E+00	n	5.6E+00	n		1.7E-03	n	
				5.0E-05	I					1	0.1		Haloxyfop, Methyl	69806-40-2	3.1E-01	n	4.1E+00	n					7.6E-02	n		8.4E-04	n	
				1.3E-02	I					1	0.1		Harmony	79277-27-3	8.0E+01	n	1.1E+03	n					2.6E+01	n		7.8E-03	n	
4.5E+00	I	1.3E-03	I	5.0E-04	I					1	0.1		Heptachlor	76-44-8	1.2E-01	c*	5.1E-01	c*	2.2E-03	c	9.4E-03	c	2.0E-03	c*	4.0E-01	1.6E-04	c*	3.3E-02
9.1E+00	I	2.6E-03	I	1.3E-05	I					1	0.1		Heptachlor Epoxide	1024-57-3	5.9E-02	c**	2.5E-01	c**	1.1E-03	c	4.7E-03	c	3.8E-03	c**	2.0E-01	7.8E-05	c**	4.1E-03
				2.0E-03	I					1	0.1		Hexabromobenzene	87-82-1	1.2E+01	n	1.6E+02	n					4.0E+00	n		2.3E-02	n	
				2.0E-04	I					1	0.1		Hexabromodiphenyl ether, 2,2',4,4',5,5'- [BDE-153]	68631-49-2	1.2E+00	n	1.6E+01	n					4.0E-01	n			n	
1.6E+00	I	4.6E-04	I	8.0E-04	I					1	0.1		Hexachlorobenzene	118-74-1	3.3E-01	c*	1.4E+00	c*	6.1E-03	c	2.7E-02	c	4.9E-02	c*	1.0E+00	6.1E-04	c*	1.3E-02
7.8E-02	I	2.2E-05	I	1.0E-03	P					1	0.1		Hexachlorobutadiene	87-68-3	6.2E+00	n	3.0E+01	c**	1.3E-01	c	5.6E-01	c	3.0E-01	c**		5.7E-04	c**	
6.3E+00	I	1.8E-03	I	8.0E-03	A					1	0.1		Hexachlorocyclohexane, Alpha-	319-84-6	8.5E-02	c	3.7E-01	c	1.6E-03	c	6.8E-03	c	7.1E-03	c		4.1E-05	c	
1.8E+00	I	5.3E-04	I							1	0.1		Hexachlorocyclohexane, Beta-	319-85-7	3.0E-01	c	1.3E+00	c	5.3E-03	c	2.3E-02	c	2.5E-02	c		1.4E-04	c	
1.1E+00	C	3.1E-04	C	3.0E-04	I					1	0.04		Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	5.6E-01	c**	2.5E+00	c*	9.1E-03	c	4.0E-02	c	4.1E-02	c**	2.0E-01	2.4E-04	c**	1.2E-03
1.8E+00	I	5.1E-04	I							1	0.1		Hexachlorocyclohexane, Technical	608-73-1	3.0E-01	c	1.3E+00	c	5.5E-03	c	2.4E-02	c	2.5E-02	c		1.4E-04	c	
				6.0E-03	I	2.0E-04	I			1	0.1		Hexachlorocyclopentadiene	77-47-4	3.7E+01	n	4.9E+02	n	2.1E-02	n	8.8E-02	n	3.1E+00	n	5.0E+01	9.6E-03	n	1.6E-01
4.0E-02	I	1.1E-05	C	7.0E-04	I	3.0E-02	I			1	0.1		Hexachloroethane	67-72-1	4.3E+00	n	5.8E+01	c**	2.6E-01	c*	1.1E+00	c*	6.9E-01	n		4.2E-04	n	
				3.0E-04	I					1	0.1		Hexachlorophene	70-30-4	1.8E+00	n	2.5E+01	n					6.0E-01	n		8.0E-01	n	
1.1E-01	I			3.0E-03	I					1	0.015		Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	6.0E+00	c**	2.8E+01	c*					7.0E-01	c**		2.7E-04	c**	
						1.0E-05	I	V		1		5.2E+03	Hexamethylene Diisocyanate, 1,6-	822-06-0	3.1E-01	n	1.3E+00	n	1.0E-03	n	4.4E-03	n	2.1E-03	n		2.1E-05	n	
				4.0E-04	P					1	0.1		Hexamethylphosphoramide	680-31-9	2.5E+00	n	3.3E+01	n					8.0E-01	n		1.8E-04	n	
				6.0E-02	H	7.0E-01	I	V		1		1.4E+02	Hexane, N-	110-54-3	5.4E+01	n	2.5E+02	ns	7.3E+01	n	3.1E+02	n	3.2E+01	n		2.3E-01	n	
				2.0E+00	P					1	0.1		Hexanedioic Acid	124-04-9	1.2E+04	n	1.6E+05	nm					4.0E+03	n		9.9E-01	n	
				5.0E-03	I	3.0E-02	I	V		1		3.3E+03	Hexanone, 2-	591-78-6	2.0E+01	n	1.3E+02	n	3.1E+00	n	1.3E+01	n	3.8E+00	n		8.8E-04	n	
				3.3E-02	I					1	0.1		Hexazinone	51235-04-2	2.0E+02	n	2.7E+03	n					6.4E+01	n		3.0E-02	n	
3.0E+00	I	4.9E-03	I			3.0E-05	P			1			Hydrazine	302-01-2	2.3E-01	c	1.1E+00	c	5.7E-04	c**	2.5E-03	c**	2.6E-02	c			c	
3.0E+00	I	4.9E-03	I							1			Hydrazine Sulfate	10034-93-2	2.3E-01	c	1.1E+00	c	5.7E-04	c	2.5E-03	c	2.6E-02	c			c	
						2.0E-02	I			1			Hydrogen Chloride	7647-01-0	2.8E+06	nm	1.2E+07	nm	2.1E+00	n	8.8E+00	n						
				4.0E-02	C	1.4E-02	C			1			Hydrogen Fluoride	7664-39-3	3.1E+02	n	4.7E+03	n	1.5E+00	n	6.1E+00	n	8.0E+01	n			n	
						2.0E-03	I			1			Hydrogen Sulfide	7783-06-4	2.8E+05	nm	1.2E+06	nm	2.1E-01	n	8.8E-01	n						
6.0E-02	P			4.0E-02	P					1	0.1		Hydroquinone	123-31-9	8.9E+00	c*	3.8E+01	c*					1.3E+00	c*		8.7E-04	c*	
				1.3E-02	I					1	0.1		Imazalil	35554-44-0	8.0E+01	n	1.1E+03	n					1.9E+01	n		3.2E-01	n	
				2.5E-01	I					1	0.1		Imazaquin	81335-37-7	1.5E+03	n	2.1E+04	n					4.9E+02	n		2.4E+00	n	
				1.0E-02	A					1			Iodine	7553-56-2	7.8E+01	n	1.2E+03	n					2.0E+01	n		1.2E+00	n	
				4.0E-02	I					1	0.1		Iprodione	36734-19-7	2.5E+02	n	3.3E+03	n					7.4E+01	n		2.2E-02	n	
				7.0E-01	P					1			Iron	7439-89-6	5.5E+03	n	8.2E+04	n					1.4E+03	n		3.5E+01	n	
				3.0E-01	I					1	0.1		Isobutyl Alcohol	78-83-1	1.8E+03	n	2.5E+04	n					5.9E+02	n		1.2E-01	n	
9.5E-04	I			2.0E-01	I	2.0E+00	C			1	0.1		Isophorone	78-59-1	5.6E+02	c**	2.4E+03	c**	2.1E+02	n	8.8E+02	n	7.8E+01	c**		2.6E-02	c**	
				1.5E-02	I					1	0.1		Isopropalin	33820-53-0	9.2E+01	n	1.2E+03	n					4.0E+00	n		9.2E-02	n	
						7.0E+00	C			1	0.1		Isopropanol	67-63-0	9.9E+08	nm	4.2E+09	nm	7.3E+02	n	3.1E+03	n						
				1.0E-01	I					1	0.1		Isopropyl Methyl Phosphonic Acid	1832-54-8	6.2E+02	n	8.2E+03	n					2.0E+02	n		4.3E-02	n	
				5.0E-02	I					1	0.1		Isoxaben	82558-50-7	3.1E+02	n	4.1E+03	n					7.3E+01	n		2.0E-01	n	
						3.0E-01	A	V		1			JP-7	NA	4.3E+07	nm	1.8E+08	nm	3.1E+01	n	1.3E+02	n	6.3E+01	n			n	
				7.5E-02	I					1	0.1		Kerb	23950-58-5	4.6E+02	n	6.2E+03	n					1.2E+02	n		1.2E-01	n	
				2.0E-03	I					1	0.1		Lactofen	77501-63-4	1.2E+01	n	1.6E+02	n					2.5E+00	n		1.2E-01	n	

HQ=1E-06
HQ=0.1

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information													Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
													Lead Compounds															
2.8E-01	C	8.0E-05	C							1	0.1		~Lead acetate	301-04-2	1.9E+00	c	8.2E+00	c	3.5E-02	c	1.5E-01	c	2.8E-01	c			c	
										1			~Lead and Compounds	7439-92-1	4.0E+02	L	8.0E+02	L	1.5E-01	L				L	1.5E+01		L	1.4E+01
3.8E-02	C	1.1E-05	C							1	0.1		~Lead subacetate	1335-32-6	1.4E+01	c	6.1E+01	c	2.6E-01	c	1.1E+00	c	2.1E+00	c			c	
				1.0E-07	I					1	0.1		~Tetraethyl Lead	78-00-2	6.2E-04	n	8.2E-03	n					1.3E-04	n		4.7E-07	n	
				2.0E-03	I					1	0.1		Linuron	330-55-2	1.2E+01	n	1.6E+02	n					3.3E+00	n		2.9E-03	n	
				2.0E-03	P					1			Lithium	7439-93-2	1.6E+01	n	2.3E+02	n					4.0E+00	n		1.2E+00	n	
				2.0E-01	I					1	0.1		Londax	83055-99-6	1.2E+03	n	1.6E+04	n					3.9E+02	n		1.0E-01	n	
				5.0E-04	I					1	0.1		MCPA	94-74-6	3.1E+00	n	4.1E+01	n					7.5E-01	n		2.0E-04	n	
				1.0E-02	I					1	0.1		MCPB	94-81-5	6.2E+01	n	8.2E+02	n					1.5E+01	n		5.8E-03	n	
				1.0E-03	I					1	0.1		MCPP	93-65-2	6.2E+00	n	8.2E+01	n					1.6E+00	n		4.6E-04	n	
				2.0E-02	I					1	0.1		Malathion	121-75-5	1.2E+02	n	1.6E+03	n					3.9E+01	n		1.0E-02	n	
				1.0E-01	I	7.0E-04	C			1	0.1		Maleic Anhydride	108-31-6	6.1E+02	n	8.1E+03	n	7.3E-02	n	3.1E-01	n	1.9E+02	n		3.8E-02	n	
				5.0E-01	I					1	0.1		Maleic Hydrazide	123-33-1	3.1E+03	n	4.1E+04	n					1.0E+03	n		2.1E-01	n	
				1.0E-04	P					1	0.1		Malononitrile	109-77-3	6.2E-01	n	8.2E+00	n					2.0E-01	n		4.1E-05	n	
				3.0E-02	H					1	0.1		Mancozeb	8018-01-7	1.8E+02	n	2.5E+03	n					5.9E+01	n		8.4E-02	n	
				5.0E-03	I					1	0.1		Maneb	12427-38-2	3.1E+01	n	4.1E+02	n					9.9E+00	n		1.4E-02	n	
				1.4E-01	I	5.0E-05	I			1			Manganese (Diet)	7439-96-5														
				2.4E-02	S	5.0E-05	I			0.04			Manganese (Non-diet)	7439-96-5	1.8E+02	n	2.6E+03	n	5.2E-03	n	2.2E-02	n	4.3E+01	n		2.8E+00	n	
				9.0E-05	H					1	0.1		Mephosfolan	950-10-7	5.5E-01	n	7.4E+00	n					1.8E-01	n		2.6E-04	n	
				3.0E-02	I					1	0.1		Mepiquat Chloride	24307-26-4	1.8E+02	n	2.5E+03	n					6.0E+01	n		2.0E-02	n	
													Mercury Compounds															
				3.0E-04	I	3.0E-04	S			0.07			~Mercuric Chloride (and other Mercury salts)	7487-94-7	2.3E+00	n	3.5E+01	n	3.1E-02	n	1.3E-01	n	5.7E-01	n	2.0E+00		n	
						3.0E-04	I	V		1		3.1E+00	~Mercury (elemental)	7439-97-6	9.4E-01	n	4.0E+00	ns	3.1E-02	n	1.3E-01	n	6.3E-02	n	2.0E+00	3.3E-03	n	1.0E-01
				1.0E-04	I					1			~Methyl Mercury	22967-92-6	7.8E-01	n	1.2E+01	n					2.0E-01	n			n	
				8.0E-05	I					1	0.1		~Phenylmercuric Acetate	62-38-4	4.9E-01	n	6.6E+00	n					1.6E-01	n		5.0E-05	n	
				3.0E-05	I					1	0.1		Merphos	150-50-5	1.8E-01	n	2.5E+00	n					6.0E-02	n		5.9E-03	n	
				3.0E-05	I					1	0.1		Merphos Oxide	78-48-8	1.8E-01	n	2.5E+00	n					8.5E-03	n		4.2E-05	n	
				6.0E-02	I					1	0.1		Metalaxyl	57837-19-1	3.7E+02	n	4.9E+03	n					1.2E+02	n		3.3E-02	n	
				1.0E-04	I	3.0E-02	P	V		1		4.6E+03	Methacrylonitrile	126-98-7	7.5E-01	n	1.0E+01	n	3.1E+00	n	1.3E+01	n	1.9E-01	n		4.3E-05	n	
				5.0E-05	I					1	0.1		Methamidophos	10265-92-6	3.1E-01	n	4.1E+00	n					1.0E-01	n		2.1E-05	n	
				2.0E+00	I	2.0E+01	I			1	0.1		Methanol	67-56-1	1.2E+04	n	1.6E+05	nm	2.1E+03	n	8.8E+03	n	4.0E+03	n		8.1E-01	n	
				1.0E-03	I					1	0.1		Methidathion	950-37-8	6.2E+00	n	8.2E+01	n					1.9E+00	n		4.7E-04	n	
				2.5E-02	I					1	0.1		Methomyl	16752-77-5	1.5E+02	n	2.1E+03	n					5.0E+01	n		1.1E-02	n	
4.9E-02	C	1.4E-05	C							1	0.1		Methoxy-5-nitroaniline, 2-	99-59-2	1.1E+01	c	4.7E+01	c	2.0E-01	c	8.8E-01	c	1.5E+00	c		5.3E-04	c	
				5.0E-03	I					1	0.1		Methoxychlor	72-43-5	3.1E+01	n	4.1E+02	n					3.7E+00	n	4.0E+01	2.0E-01	n	2.2E+00
				8.0E-03	P	1.0E-03	P			1	0.1		Methoxyethanol Acetate, 2-	110-49-6	4.9E+01	n	6.6E+02	n	1.0E-01	n	4.4E-01	n	1.6E+01	n		3.3E-03	n	
				5.0E-03	P	2.0E-02	I			1	0.1		Methoxyethanol, 2-	109-86-4	3.1E+01	n	4.1E+02	n	2.1E+00	n	8.8E+00	n	1.0E+01	n		2.0E-03	n	
				1.0E+00	X			V		1		2.9E+04	Methyl Acetate	79-20-9	7.8E+03	n	1.2E+05	nms					2.0E+03	n		4.1E-01	n	
				3.0E-02	H	2.0E-02	P	V		1		6.8E+03	Methyl Acrylate	96-33-3	1.4E+01	n	6.0E+01	n	2.1E+00	n	8.8E+00	n	3.9E+00	n		8.3E-04	n	
				6.0E-01	I	5.0E+00	I	V		1		2.8E+04	Methyl Ethyl Ketone (2-Butanone)	78-93-3	2.7E+03	n	1.9E+04	n	5.2E+02	n	2.2E+03	n	5.6E+02	n		1.2E-01	n	
		1.0E-03	X	1.0E-03	P	2.0E-05	X			1	0.1		Methyl Hydrazine	60-34-4	6.2E+00	n	8.2E+01	n	2.1E-03	n	8.8E-03	n	2.0E+00	n		4.5E-04	n	
				8.0E-02	H	3.0E+00	I	V		1		3.4E+03	Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	5.3E+02	n	5.6E+03	ns	3.1E+02	n	1.3E+03	n	1.2E+02	n		2.8E-02	n	
						1.0E-03	C	V		1	0.1	1.7E+04	Methyl Isocyanate	624-83-9	4.6E-01	n	1.9E+00	n	1.0E-01	n	4.4E-01	n	2.1E-01	n		5.9E-05	n	
				1.4E+00	I	7.0E-01	I	V		1		2.4E+03	Methyl Methacrylate	80-62-6	4.4E+02	n	1.9E+03	n	7.3E+01	n	3.1E+02	n	1.4E+02	n		3.0E-02	n	
				2.5E-04	I					1	0.1		Methyl Parathion	298-00-0	1.5E+00	n	2.1E+01	n					4.5E-01	n		7.4E-04	n	
				6.0E-02	X					1	0.1		Methyl Phosphonic Acid	993-13-5	3.7E+02	n	4.9E+03	n					1.2E+02	n		2.4E-02	n	
				6.0E-03	H	4.0E-02	H	V		1		3.9E+02	Methyl Styrene (Mixed Isomers)	25013-15-4	2.3E+01	n	1.5E+02	n	4.2E+00	n	1.8E+01	n	3.8E+00	n		6.2E-03	n	
9.9E-02	C	2.8E-05	C							1	0.1		Methyl methanesulfonate	66-27-3	5.4E+00	c	2.3E+01	c	1.0E-01	c	4.4E-01	c	7.9E-01	c		1.6E-04	c	
1.8E-03	C	2.6E-07	C			3.0E+00	I	V		1		8.9E+03	Methyl tert-Butyl Ether (MTBE)	1634-04-4	4.7E+01	c*	2.1E+02	c*	1.1E+01	c*	4.7E+01	c*	1.4E+01	c*		3.2E-03	c*	
				3.0E-04	X					1	0.1		Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	1.8E+00	n	2.5E+01	n					6.0E-01	n		3.6E-04	n	
9.0E-03	P			2.0E-02	X					1	0.1		Methyl-5-Nitroaniline, 2-	99-55-8	5.9E+01	c**	2.6E+02	c**					8.1E+00	c**		4.5E-03	c**	
8.3E+00	C	2.4E-03	C							1	0.1		Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	6.4E-02	c	2.8E-01	c	1.2E-03	c	5.1E-03	c	9.4E-03	c		3.2E-06	c	
1.3E-01	C	3.7E-05	C							1	0.1		Methylaniline Hydrochloride, 2-	636-21-5	4.1E+00	c	1.8E+01	c	7.6E-02	c	3.3E-01	c	5.7E-01	c		2.5E-04	c	
				1.0E-02	A					1	0.1		Methylarsonic acid	124-58-3	6.2E+01	n	8.2E+02	n					2.0E+01	n			n	
				2.0E-04	X					1	0.1		Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	1.2E+00	n	1.6E+01	n					4.0E-01	n			n	
1.0E-01	X			3.0E-04	X					1	0.1		Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	1.8E+00	n	2.3E+01	c**					6.0E-01	n			n	
2.2E+01	C	6.3E-03	C						M	1	0.1		Methylcholanthrene, 3-	56-49-5	5.4E-03	c	1.0E-01	c	1.6E-04	c	1.9E-03	c	1.1E-03	c		2.2E-03	c	
2.0E-03	I	1.0E-08	I	6.0E-03	I	6.0E-01	I	V	M	1		3.3E+03	Methylene Chloride	75-09-2	3.5E+01	n	3.2E+02	n	6.3E+01	n	2.6E+02	n	1.1E+01	n	5.0E+00	2.7E-03	n	1.3E-03
1.0E-01	P	4.3E-04	C	2.0E-03	P				M	1	0.1		Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	1.2E+00	c*	2.3E+01	c**	2.4E-03	c	2.9E-02	c	1.6E-01	c*		1.8E-03	c*	
4.6E-02	I	1.3E-05	C							1	0.1		Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	1.2E+01	c	5.0E+01	c	2.2E-01	c	9.4E-01	c	4.6E-01	c		2.6E-03	c	
1.6E+00	C	4.6E-04	C			2.0E-02	C			1	0.1		Methylenebisbenzenamine, 4,4'-	101-77-9	3.3E-01	c	1.4E+00	c	6.1E-03	c	2.7E-02	c	4.7E-02	c		2.1E-04	c	
						6.0E-04	I			1	0.1		Methylenediphenyl Diisocyanate	101-68-8	8.5E+04	n	3.6E+05	nm	6.3E-02	n	2.6E-01	n						
				7.0E-02	H			V		1		5.0E+02	Methylstyrene, Alpha-	98-83-9	5.5E+02	ns	8.2E+03	ns					7.8E+01	n		1.2E-01	n	
				1.5E-01	I					1	0.1		Metolachlor	51218-45-2	9.2E+02	n	1.2E+04	n					2.7E+02	n		3.2E-01	n	

TR=1E-06
HQ=0.1

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information												Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vo c	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				2.5E-02	I					1	0.1		Metribuzin	21087-64-9	1.5E+02	n	2.1E+03	n					4.9E+01	n		1.5E-02	n	
				3.0E+00	P			V		1	0.1	3.4E-01	Mineral oils	8012-95-1	1.8E+04	ns	2.5E+05	nms					6.0E+03	n		2.4E+02	n	
1.8E+01	C	5.1E-03	C	2.0E-04	I					1	0.1		Mirex	2385-85-5	3.0E-02	c*	1.3E-01	c	5.5E-04	c	2.4E-03	c	4.3E-03	c*		3.1E-03	c*	
				2.0E-03	I					1	0.1		Molinate	2212-67-1	1.2E+01	n	1.6E+02	n					3.0E+00	n		1.7E-03	n	
				5.0E-03	I					1			Molybdenum	7439-98-7	3.9E+01	n	5.8E+02	n					1.0E+01	n		2.0E-01	n	
				1.0E-01	I					1			Monochloramine	10599-90-3	7.8E+02	n	1.2E+04	n					2.0E+02	n	4.0E+03		n	
				2.0E-03	P					1	0.1		Monomethylaniline	100-61-8	1.2E+01	n	1.6E+02	n					3.8E+00	n		1.4E-03	n	
				3.0E-04	X					1	0.1		N,N'-Diphenyl-1,4-benzenediamine	74-31-7	1.8E+00	n	2.5E+01	n					3.6E-01	n		3.7E-02	n	
				2.0E-03	I					1	0.1		Naled	300-76-5	1.2E+01	n	1.6E+02	n					4.0E+00	n		1.8E-03	n	
				3.0E-02	X	1.0E-01	P	V		1			Naphtha, High Flash Aromatic (HFAN)	64724-95-6	2.3E+02	n	3.5E+03	n	1.0E+01	n	4.4E+01	n	1.5E+01	n			n	
1.8E+00	C	0.0E+00	C							1	0.1		Naphthylamine, 2-	91-59-8	3.0E-01	c	1.3E+00	c					3.9E-02	c		2.0E-04	c	
				1.0E-01	I					1	0.1		Napropamide	15299-99-7	6.2E+02	n	8.2E+03	n					1.6E+02	n		1.1E+00	n	
				1.1E-02	C	1.4E-05	C			0.04			Nickel Carbonyl	13463-39-3	8.2E+01	n	1.1E+03	n	1.5E-03	n	6.1E-03	n	2.0E+01	n			n	
				1.1E-02	C	2.0E-05	C			1			Nickel Oxide	1313-99-1	8.4E+01	n	1.2E+03	n	2.1E-03	n	8.8E-03	n	2.2E+01	n			n	
		2.4E-04	I	1.1E-02	C	1.4E-05	C			0.04			Nickel Refinery Dust	NA	8.2E+01	n	1.1E+03	n	1.5E-03	n	6.1E-03	n	2.2E+01	n		3.2E+00	n	
		2.6E-04	C	2.0E-02	I	9.0E-05	A			0.04			Nickel Soluble Salts	7440-02-0	1.5E+02	n	2.2E+03	n	9.4E-03	n	3.9E-02	n	3.9E+01	n		2.6E+00	n	
1.7E+00	C	4.8E-04	I	1.1E-02	C	1.4E-05	C			0.04			Nickel Subsulfide	12035-72-2	4.1E-01	c	1.9E+00	c	1.5E-03	n	6.1E-03	n	4.5E-02	c			c	
				1.6E+00	I					1			Nitrate	14797-55-8	1.3E+04	n	1.9E+05	nm					3.2E+03	n	1.0E+04		n	
										1			Nitrate + Nitrite (as N)	NA											1.0E+04			
				1.0E-01	I					1			Nitrite	14797-65-0	7.8E+02	n	1.2E+04	n					2.0E+02	n	1.0E+03		n	
				1.0E-02	X	5.0E-05	X			1	0.1		Nitroaniline, 2-	88-74-4	6.1E+01	n	8.0E+02	n	5.2E-03	n	2.2E-02	n	1.9E+01	n		8.0E-03	n	
2.0E-02	P			4.0E-03	P	6.0E-03	P			1	0.1		Nitroaniline, 4-	100-01-6	2.5E+01	n	1.2E+02	c**	6.3E-01	n	2.6E+00	n	3.8E+00	c**		1.6E-03	c**	
		4.0E-05	I	2.0E-03	I	9.0E-03	I	V		1		3.1E+03	Nitrobenzene	98-95-3	5.1E+00	c**	2.2E+01	c**	7.0E-02	c*	3.1E-01	c*	1.4E-01	c**		9.2E-05	c**	
				3.0E+03	P					1	0.1		Nitrocellulose	9004-70-0	1.8E+07	nm	2.5E+08	nm					6.0E+06	n		1.3E+03	n	
				7.0E-02	H					1	0.1		Nitrofurantoin	67-20-9	4.3E+02	n	5.8E+03	n					1.4E+02	n		6.1E-02	n	
1.3E+00	C	3.7E-04	C							1	0.1		Nitrofurazone	59-87-0	4.1E-01	c	1.8E+00	c	7.6E-03	c	3.3E-02	c	6.0E-02	c		5.4E-05	c	
1.7E-02	P			1.0E-04	P					1	0.1		Nitroglycerin	55-63-0	6.2E-01	n	8.2E+00	n					2.0E-01	n		8.5E-05	n	
				1.0E-01	I					1	0.1		Nitroguanidine	556-88-7	6.2E+02	n	8.2E+03	n					2.0E+02	n		4.8E-02	n	
		8.8E-06	P			5.0E-03	P	V		1		1.8E+04	Nitromethane	75-52-5	5.4E+00	c**	2.4E+01	c**	3.2E-01	c**	1.4E+00	c**	6.4E-01	c**		1.4E-04	c**	
		2.7E-03	H			2.0E-02	I	V		1		4.9E+03	Nitropropane, 2-	79-46-9	1.4E-02	c	6.0E-02	c	1.0E-03	c	4.5E-03	c	2.1E-03	c		5.4E-07	c	
2.7E+01	C	7.7E-03	C						M	1	0.1		Nitroso-N-ethylurea, N-	759-73-9	4.4E-03	c	8.6E-02	c	1.3E-04	c	1.6E-03	c	9.2E-04	c		2.2E-07	c	
1.2E+02	C	3.4E-02	C						M	1	0.1		Nitroso-N-methylurea, N-	684-93-5	9.9E-04	c	1.9E-02	c	3.0E-05	c	3.6E-04	c	2.1E-04	c		4.6E-08	c	
5.4E+00	I	1.6E-03	I					V		1			Nitroso-di-N-butylamine, N-	924-16-3	9.4E-02	c	4.3E-01	c	1.8E-03	c	7.7E-03	c	2.7E-03	c		5.5E-06	c	
7.0E+00	I	2.0E-03	C							1	0.1		Nitroso-di-N-propylamine, N-	621-64-7	7.6E-02	c	3.3E-01	c	1.4E-03	c	6.1E-03	c	1.1E-02	c		8.1E-06	c	
2.8E+00	I	8.0E-04	C							1	0.1		Nitrosodiethanolamine, N-	1116-54-7	1.9E-01	c	8.2E-01	c	3.5E-03	c	1.5E-02	c	2.8E-02	c		5.6E-06	c	
1.5E+02	I	4.3E-02	I						M	1	0.1		Nitrosodiethylamine, N-	55-18-5	7.9E-04	c	1.5E-02	c	2.4E-05	c	2.9E-04	c	1.7E-04	c		6.0E-08	c	
5.1E+01	I	1.4E-02	I	8.0E-06	P	4.0E-05	X		M	1	0.1		Nitrosodimethylamine, N-	62-75-9	2.3E-03	c*	4.5E-02	c*	7.2E-05	c*	8.8E-04	c*	4.9E-04	c*		1.2E-07	c*	
4.9E-03	I	2.6E-06	C							1	0.1		Nitrosodiphenylamine, N-	86-30-6	1.1E+02	c	4.7E+02	c	1.1E+00	c	4.7E+00	c	1.2E+01	c		6.6E-02	c	
2.2E+01	I	6.3E-03	C							1	0.1		Nitrosomethylethylamine, N-	10595-95-6	2.4E-02	c	1.0E-01	c	4.5E-04	c	1.9E-03	c	3.5E-03	c		1.0E-06	c	
6.7E+00	C	1.9E-03	C							1	0.1		Nitrosomorpholine [N-]	59-89-2	7.9E-02	c	3.4E-01	c	1.5E-03	c	6.5E-03	c	1.2E-02	c		2.8E-06	c	
9.4E+00	C	2.7E-03	C							1	0.1		Nitrosopiperidine [N-]	100-75-4	5.7E-02	c	2.5E-01	c	1.0E-03	c	4.5E-03	c	8.2E-03	c		4.4E-06	c	
2.1E+00	I	6.1E-04	I							1	0.1		Nitrosopyrrolidine, N-	930-55-2	2.5E-01	c	1.1E+00	c	4.6E-03	c	2.0E-02	c	3.7E-02	c		1.4E-05	c	
				1.0E-04	X					1	0.1		Nitrotoluene, m-	99-08-1	6.2E-01	n	8.2E+00	n					1.7E-01	n		1.6E-04	n	
2.2E-01	P			9.0E-04	P			V		1		1.5E+03	Nitrotoluene, o-	88-72-2	3.2E+00	c**	1.5E+01	c**					3.1E-01	c**		2.9E-04	c**	
1.6E-02	P			4.0E-03	P					1	0.1		Nitrotoluene, p-	99-99-0	2.5E+01	n	1.4E+02	c**					4.2E+00	c**		3.9E-03	c**	
				3.0E-04	X	2.0E-02	P	V		1		6.9E+00	Nonane, n-	111-84-2	1.1E+00	n	7.2E+00	ns	2.1E+00	n	8.8E+00	n	5.3E-01	n		7.5E-03	n	
				4.0E-02	I					1	0.1		Norflurazon	27314-13-2	2.5E+02	n	3.3E+03	n					7.7E+01	n		5.0E-01	n	
				7.0E-04	I					1	0.1		Nustar	85509-19-9	4.3E+00	n	5.8E+01	n					1.1E+00	n		1.8E-01	n	
				3.0E-03	I					1	0.1		Octabromodiphenyl Ether	32536-52-0	1.8E+01	n	2.5E+02	n					6.0E+00	n		1.2E+00	n	
				5.0E-02	I					1	0.006		Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	3.8E+02	n	5.7E+03	n					1.0E+02	n		1.3E-01	n	
				2.0E-03	H					1	0.1		Octamethylpyrophosphoramide	152-16-9	1.2E+01	n	1.6E+02	n					4.0E+00	n		9.6E-04	n	
				5.0E-02	I					1	0.1		Oryzalin	19044-88-3	3.1E+02	n	4.1E+03	n					8.1E+01	n		1.5E-01	n	
				5.0E-03	I					1	0.1		Oxadiazon	19666-30-9	3.1E+01	n	4.1E+02	n					4.7E+00	n		4.8E-02	n	
				2.5E-02	I					1	0.1		Oxamyl	23135-22-0	1.5E+02	n	2.1E+03	n					5.0E+01	n	2.0E+02	1.1E-02	n	4.4E-02
				1.3E-02	I					1	0.1		Paclobutrazol	76738-62-0	8.0E+01	n	1.1E+03	n					2.3E+01	n		4.6E-02	n	
				4.5E-03	I					1	0.1		Paraquat Dichloride	1910-42-5	2.8E+01	n	3.7E+02	n					9.0E+00	n		1.2E-01	n	
				6.0E-03	H					1	0.1		Parathion	56-38-2	3.7E+01	n	4.9E+02	n					8.6E+00	n		4.3E-02	n	
				5.0E-02	H					1	0.1		Pebulate	1114-71-2	3.1E+02	n	4.1E+03	n					5.6E+01	n		4.5E-02	n	
				4.0E-02	I					1	0.1		Pendimethalin	40487-42-1	2.5E+02	n	3.3E+03	n					1.8E+01	n		2.1E-01	n	
				2.0E-03	I					1	0.1		Pentabromodiphenyl Ether	32534-81-9	1.2E+01	n	1.6E+02	n					4.0E+00	n		1.7E-01	n	
				1.0E-04	I					1	0.1		Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	6.2E-01	n	8.2E+00	n					2.0E-01	n		8.7E-03	n	
				8.0E-04	I					1	0.1		Pentachlorobenzene	608-93-5	4.9E+00	n	6.6E+01	n					3.2E-01	n		2.4E-03	n	
9.0E-02	P									1	0.1		Pentachloroethane	76-01-7	5.9E+00	c	2.6E+01	c					6.4E-01	c		3.1E-04	c	
2.6E-01	H			3.0E-03	I					1	0.1		Pentachloronitrobenzene	82-68-8	2.0E+00	c**	8.9E+00	c*					1.2E-01	c*		1.4E-03	c*	
4.0E-01	I	5.1E-06	C	5.0E-03	I					1	0.25		Pentachlorophenol	87-86-5	9.9E-01	c*	4.0E+00	c*	5.5E-01	c	2.4E+00	c	4.0E-02	c*	1.0E+00	4.0E-04	c*	1.0E-02

TR = 1E-06
HQ = 0.1

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information													Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	voc	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
4.0E-03	X			2.0E-03	P					1	0.1		Pentaerythritol tetranitrate (PETN)	78-11-5	1.2E+01	n	1.6E+02	n					3.9E+00	n		5.8E-03	n	
						1.0E+00	P	V		1		3.9E+02	Pentane, n-	109-66-0	8.1E+01	n	3.4E+02	n	1.0E+02	n	4.4E+02	n	2.1E+02	n		1.0E+00	n	
													Perchlorates															
				7.0E-04	I					1			~Ammonium Perchlorate	7790-98-9	5.5E+00	n	8.2E+01	n					1.4E+00	n			n	
				7.0E-04	I					1			~Lithium Perchlorate	7791-03-9	5.5E+00	n	8.2E+01	n					1.4E+00	n			n	
				7.0E-04	I					1			~Perchlorate and Perchlorate Salts	14797-73-0	5.5E+00	n	8.2E+01	n					1.4E+00	n	1.5E+01(F)		n	
				7.0E-04	I					1			~Potassium Perchlorate	7778-74-7	5.5E+00	n	8.2E+01	n					1.4E+00	n			n	
				7.0E-04	I					1			~Sodium Perchlorate	7601-89-0	5.5E+00	n	8.2E+01	n					1.4E+00	n			n	
				5.0E-02	I					1	0.1		Permethrin	52645-53-1	3.1E+02	n	4.1E+03	n					1.0E+02	n		2.4E+01	n	
2.2E-03	C	6.3E-07	C							1	0.1		Phenacetin	62-44-2	2.4E+02	c	1.0E+03	c	4.5E+00	c	1.9E+01	c	3.4E+01	c		9.7E-03	c	
				2.5E-01	I					1	0.1		Phenmedipham	13684-63-4	1.5E+03	n	2.1E+04	n					4.0E+02	n		2.1E+00	n	
				3.0E-01	I	2.0E-01	C			1	0.1		Phenol	108-95-2	1.8E+03	n	2.5E+04	n	2.1E+01	n	8.8E+01	n	5.8E+02	n		3.3E-01	n	
				5.0E-04	X					1	0.1		Phenothiazine	92-84-2	3.1E+00	n	4.1E+01	n					4.3E-01	n		1.4E-03	n	
				6.0E-03	I					1	0.1		Phenylenediamine, m-	108-45-2	3.7E+01	n	4.9E+02	n					1.2E+01	n		3.2E-03	n	
4.7E-02	H									1	0.1		Phenylenediamine, o-	95-54-5	1.1E+01	c	4.9E+01	c					1.6E+00	c		4.4E-04	c	
				1.9E-01	H					1	0.1		Phenylenediamine, p-	106-50-3	1.2E+03	n	1.6E+04	n					3.8E+02	n		1.0E-01	n	
1.9E-03	H									1	0.1		Phenylphenol, 2-	90-43-7	2.7E+02	c	1.2E+03	c					3.0E+01	c		4.0E-01	c	
				2.0E-04	H					1	0.1		Phorate	298-02-2	1.2E+00	n	1.6E+01	n					3.0E-01	n		3.4E-04	n	
						3.0E-04	I	V		1		1.6E+03	Phosgene	75-44-5	3.1E-02	n	1.3E-01	n	3.1E-02	n	1.3E-01	n						
				2.0E-02	I					1	0.1		Phosmet	732-11-6	1.2E+02	n	1.6E+03	n					3.7E+01	n		8.2E-03	n	
													Phosphates, Inorganic															
				4.9E+01	P					1			~Aluminum metaphosphate	13776-88-0	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Ammonium polyphosphate	68333-79-9	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Calcium pyrophosphate	7790-76-3	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Diammonium phosphate	7783-28-0	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Dicalcium phosphate	7757-93-9	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Dimagnesium phosphate	7782-75-4	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Dipotassium phosphate	7758-11-4	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Disodium phosphate	7558-79-4	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Monoaluminum phosphate	13530-50-2	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Monoammonium phosphate	7722-76-1	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Monocalcium phosphate	7758-23-8	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Monomagnesium phosphate	7757-86-0	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Monopotassium phosphate	7778-77-0	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Monosodium phosphate	7558-80-7	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Polyphosphoric acid	8017-16-1	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Potassium tripolyphosphate	13845-36-8	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Sodium acid pyrophosphate	7758-16-9	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Sodium aluminum phosphate (acidic)	7785-88-8	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Sodium aluminum phosphate (anhydrous)	10279-59-1	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Sodium aluminum phosphate (tetrahydrate)	10305-76-7	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Sodium hexametaphosphate	10124-56-8	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Sodium polyphosphate	68915-31-1	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Sodium trimetaphosphate	7785-84-4	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Sodium tripolyphosphate	7758-29-4	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Tetrapotassium phosphate	7320-34-5	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Tetrasodium pyrophosphate	7722-88-5	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Tricalcium phosphate	7758-87-4	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Trimagnesium phosphate	7757-87-1	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Tripotassium phosphate	7778-53-2	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				4.9E+01	P					1			~Trisodium phosphate	7601-54-9	3.8E+05	nm	5.7E+06	nm					9.7E+04	n			n	
				3.0E-04	I	3.0E-04	I			1			Phosphine	7803-51-2	2.3E+00	n	3.5E+01	n	3.1E-02	n	1.3E-01	n	6.0E-01	n			n	
				4.9E+01	P	1.0E-02	I			1			Phosphoric Acid	7664-38-2	3.0E+05	nm	2.9E+06	nm	1.0E+00	n	4.4E+00	n	9.7E+04	n			n	
				2.0E-05	I					1			Phosphorus, White	7723-14-0	1.6E-01	n	2.3E+00	n					4.0E-02	n		1.5E-04	n	
													Phthalates															
1.4E-02	I	2.4E-06	C	2.0E-02	I					1	0.1		~Bis(2-ethylhexyl)phthalate	117-81-7	3.8E+01	c**	1.6E+02	c*	1.2E+00	c	5.1E+00	c	5.6E+00	c**	6.0E+00	1.3E+00	c**	1.4E+00
				1.0E+00	I					1	0.1		~Butylphthalyl Butylglycolate	85-70-1	6.2E+03	n	8.2E+04	n					1.3E+03	n		3.0E+01	n	
				1.0E-01	I					1	0.1		~Dibutyl Phthalate	84-74-2	6.2E+02	n	8.2E+03	n					9.0E+01	n		2.3E-01	n	
				8.0E-01	I					1	0.1		~Diethyl Phthalate	84-66-2	4.9E+03	n	6.6E+04	n					1.5E+03	n		6.1E-01	n	
				1.0E-01	I			V		1			~Dimethylterephthalate	120-61-6	7.8E+02	n	1.2E+04	n					1.9E+02	n		4.9E-02	n	
				1.0E-02	P					1	0.1		~Octyl Phthalate, di-N-	117-84-0	6.2E+01	n	8.2E+02	n					2.0E+01	n		5.7E+00	n	
				1.0E+00	H					1	0.1		~Phthalic Acid, P-	100-21-0	6.2E+03	n	8.2E+04	n					1.9E+03	n		6.8E-01	n	
				2.0E+00	I	2.0E-02	C			1	0.1		~Phthalic Anhydride	85-44-9	1.2E+04	n	1.6E+05	nm	2.1E+00	n	8.8E+00	n	3.9E+03	n		8.5E-01	n	
				7.0E-02	I					1	0.1		Picloram	1918-02-1	4.3E+02	n	5.8E+03	n					1.4E+02	n	5.0E+02	3.8E-02	n	1.4E-01

1E-06
HQ=0.1

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information												Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				1.0E-04	X					1	0.1		Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	6.2E-01	n	8.2E+00	n					2.0E-01	n		1.3E-04	n	
				1.0E-02	I					1	0.1		Pirimiphos, Methyl	29232-93-7	6.2E+01	n	8.2E+02	n					1.2E+01	n		1.2E-02	n	
3.0E+01	C	8.6E-03	C	7.0E-06	H					1	0.1		Polybrominated Biphenyls	59536-65-1	1.8E-02	c**	7.7E-02	c**	3.3E-04	c	1.4E-03	c	2.6E-03	c**			c**	
													Polychlorinated Biphenyls (PCBs)															
7.0E-02	S	2.0E-05	S	7.0E-05	I					1	0.14		~Aroclor 1016	12674-11-2	4.0E-01	n	5.2E+00	n	1.4E-01	c	6.1E-01	c	1.4E-01	n		1.3E-02	n	
2.0E+00	S	5.7E-04	S					V		1	0.14	7.6E+02	~Aroclor 1221	11104-28-2	1.5E-01	c	6.6E-01	c	4.9E-03	c	2.1E-02	c	4.6E-03	c		7.9E-05	c	
2.0E+00	S	5.7E-04	S					V		1	0.14	7.3E+01	~Aroclor 1232	11141-16-5	1.5E-01	c	6.6E-01	c	4.9E-03	c	2.1E-02	c	4.6E-03	c		7.9E-05	c	
2.0E+00	S	5.7E-04	S							1	0.14		~Aroclor 1242	53469-21-9	2.4E-01	c	1.0E+00	c	4.9E-03	c	2.1E-02	c	3.9E-02	c		6.1E-03	c	
2.0E+00	S	5.7E-04	S							1	0.14		~Aroclor 1248	12672-29-6	2.4E-01	c	1.0E+00	c	4.9E-03	c	2.1E-02	c	3.9E-02	c		6.0E-03	c	
2.0E+00	S	5.7E-04	S	2.0E-05	I					1	0.14		~Aroclor 1254	11097-69-1	1.1E-01	n	1.0E+00	c**	4.9E-03	c	2.1E-02	c	3.9E-02	c**		1.0E-02	c**	
2.0E+00	S	5.7E-04	S							1	0.14		~Aroclor 1260	11096-82-5	2.4E-01	c	1.0E+00	c	4.9E-03	c	2.1E-02	c	3.9E-02	c		2.7E-02	c	
				6.0E-04	X					1	0.1		~Aroclor 5460	11126-42-4	1.7E+01	n	1.7E+02	n					1.2E+00	n		2.0E-01	n	
3.9E+00	E	1.1E-03	E	2.3E-05	E	1.3E-03	E			1	0.14		~Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	1.2E-01	c**	5.3E-01	c**	2.5E-03	c*	1.1E-02	c*	2.0E-02	c**		1.4E-02	c**	
3.9E+00	E	1.1E-03	E	2.3E-05	E	1.3E-03	E			1	0.14		~Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	1.2E-01	c**	5.3E-01	c**	2.5E-03	c*	1.1E-02	c*	2.0E-02	c**		8.4E-03	c**	
3.9E+00	E	1.1E-03	E	2.3E-05	E	1.3E-03	E			1	0.14		~Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	1.2E-01	c**	5.3E-01	c**	2.5E-03	c*	1.1E-02	c*	2.0E-02	c**		8.5E-03	c**	
3.9E+00	E	1.1E-03	E	2.3E-05	E	1.3E-03	E			1	0.14		~Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	1.2E-01	c**	5.3E-01	c**	2.5E-03	c*	1.1E-02	c*	2.0E-02	c**		8.5E-03	c**	
3.9E+03	E	1.1E+00	E	2.3E-08	E	1.3E-06	E			1	0.14		~Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	1.2E-04	c**	5.3E-04	c**	2.5E-06	c*	1.1E-05	c*	2.0E-05	c**		8.4E-06	c**	
3.9E+00	E	1.1E-03	E	2.3E-05	E	1.3E-03	E			1	0.14		~Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	1.2E-01	c**	5.3E-01	c**	2.5E-03	c*	1.1E-02	c*	2.0E-02	c**		5.2E-03	c**	
3.9E+00	E	1.1E-03	E	2.3E-05	E	1.3E-03	E			1	0.14		~Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	1.2E-01	c**	5.3E-01	c**	2.5E-03	c*	1.1E-02	c*	2.0E-02	c**		5.1E-03	c**	
3.9E+00	E	1.1E-03	E	2.3E-05	E	1.3E-03	E			1	0.14		~Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	1.2E-01	c**	5.3E-01	c**	2.5E-03	c*	1.1E-02	c*	2.0E-02	c**		5.2E-03	c**	
3.9E+00	E	1.1E-03	E	2.3E-05	E	1.3E-03	E			1	0.14		~Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	1.2E-01	c**	5.3E-01	c**	2.5E-03	c*	1.1E-02	c*	2.0E-02	c**		5.2E-03	c**	
1.3E+04	E	3.8E+00	E	7.0E-09	E	4.0E-07	E			1	0.14		~Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	3.7E-05	c**	1.6E-04	c**	7.4E-07	c*	3.2E-06	c*	6.0E-06	c**		1.5E-06	c**	
2.0E+00	I	5.7E-04	I							1	0.14		~Polychlorinated Biphenyls (high risk)	1336-36-3	2.4E-01	c	1.0E+00	c	4.9E-03	c	2.1E-02	c						
4.0E-01	I	1.0E-04	I							1	0.14		~Polychlorinated Biphenyls (low risk)	1336-36-3					2.8E-02	c	1.2E-01	c	1.9E-01	c	5.0E-01	3.0E-02	c	7.8E-02
7.0E-02	I	2.0E-05	I							1	0.14		~Polychlorinated Biphenyls (lowest risk)	1336-36-3					1.4E-01	c	6.1E-01	c						
1.3E+01	E	3.8E-03	E	7.0E-06	E	4.0E-04	E			1	0.14		~Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	3.7E-02	c**	1.6E-01	c**	7.4E-04	c*	3.2E-03	c*	6.0E-03	c**		9.4E-04	c**	
3.9E+01	E	1.1E-02	E	2.3E-06	E	1.3E-04	E			1	0.14		~Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	1.2E-02	c**	5.3E-02	c**	2.5E-04	c*	1.1E-03	c*	2.0E-03	c**		3.1E-04	c**	
						6.0E-04	I			1	0.1		Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	8.5E+04	n	3.6E+05	nm	6.3E-02	n	2.6E-01	n						
													Polynuclear Aromatic Hydrocarbons (PAHs)															
				6.0E-02	I			V		1	0.13		~Acenaphthene	83-32-9	3.5E+02	n	4.5E+03	n					5.3E+01	n		5.5E-01	n	
				3.0E-01	I			V		1	0.13		~Anthracene	120-12-7	1.7E+03	n	2.3E+04	n					1.8E+02	n		5.8E+00	n	
7.3E-01	E	1.1E-04	C						M	1	0.13		~Benz[a]anthracene	56-55-3	1.5E-01	c	2.9E+00	c	9.2E-03	c	1.1E-01	c	3.4E-02	c		1.2E-02	c	
1.2E+00	C	1.1E-04	C							1	0.13		~Benzo(j)fluoranthene	205-82-3	4.1E-01	c	1.8E+00	c	2.6E-02	c	1.1E-01	c	6.5E-02	c		7.8E-02	c	
7.3E+00	I	1.1E-03	C						M	1	0.13		~Benzo[a]pyrene	50-32-8	1.5E-02	c	2.9E-01	c	9.2E-04	c	1.1E-02	c	3.4E-03	c	2.0E-01	4.0E-03	c	2.4E-01
7.3E-01	E	1.1E-04	C						M	1	0.13		~Benzo[b]fluoranthene	205-99-2	1.5E-01	c	2.9E+00	c	9.2E-03	c	1.1E-01	c	3.4E-02	c		4.1E-02	c	
7.3E-02	E	1.1E-04	C						M	1	0.13		~Benzo[k]fluoranthene	207-08-9	1.5E+00	c	2.9E+01	c	9.2E-03	c	1.1E-01	c	3.4E-01	c		4.0E-01	c	
				8.0E-02	I			V		1			~Chloronaphthalene, Beta-	91-58-7	6.3E+02	n	9.3E+03	n					7.5E+01	n		3.8E-01	n	
7.3E-03	E	1.1E-05	C						M	1	0.13		~Chrysene	218-01-9	1.5E+01	c	2.9E+02	c	9.2E-02	c	1.1E+00	c	3.4E+00	c		1.2E+00	c	
7.3E+00	E	1.2E-03	C						M	1	0.13		~Dibenz[a,h]anthracene	53-70-3	1.5E-02	c	2.9E-01	c	8.4E-04	c	1.0E-02	c	3.4E-03	c		1.3E-02	c	
1.2E+01	C	1.1E-03	C							1	0.13		~Dibenzo(a,e)pyrene	192-65-4	4.1E-02	c	1.8E-01	c	2.6E-03	c	1.1E-02	c	6.5E-03	c		8.4E-02	c	
2.5E+02	C	7.1E-02	C						M	1	0.13		~Dimethylbenz(a)anthracene, 7,12-	57-97-6	4.5E-04	c	8.5E-03	c	1.4E-05	c	1.7E-04	c	1.0E-04	c		9.9E-05	c	
				4.0E-02	I					1	0.13		~Fluoranthene	206-44-0	2.3E+02	n	3.0E+03	n					8.0E+01	n		8.9E+00	n	
				4.0E-02	I			V		1	0.13		~Fluorene	86-73-7	2.3E+02	n	3.0E+03	n					2.9E+01	n		5.4E-01	n	
7.3E-01	E	1.1E-04	C						M	1	0.13		~Indeno[1,2,3-cd]pyrene	193-39-5	1.5E-01	c	2.9E+00	c	9.2E-03	c	1.1E-01	c	3.4E-02	c		2.4E-01	c	
2.9E-02	P			7.0E-02	A			V		1	0.13		~Methylnaphthalene, 1-	90-12-0	1.7E+01	c*	7.3E+01	c*					1.1E+00	c*		5.8E-03	c*	
				4.0E-03	I			V		1	0.13		~Methylnaphthalene, 2-	91-57-6	2.3E+01	n	3.0E+02	n					3.6E+00	n		1.9E-02	n	
		3.4E-05	C	2.0E-02	I	3.0E-03	I	V		1	0.13		~Naphthalene	91-20-3	3.8E+00	c**	1.7E+01	c**	8.3E-02	c**	3.6E-01	c**	1.7E-01	c**		5.4E-04	c**	
1.2E+00	C	1.1E-04	C							1	0.13		~Nitropyrene, 4-	57835-92-4	4.1E-01	c	1.8E+00	c	2.6E-02	c	1.1E-01	c	1.9E-02	c		3.2E-03	c	
				3.0E-02	I			V		1	0.13		~Pyrene	129-00-0	1.7E+02	n	2.3E+03	n					1.2E+01	n		1.3E+00	n	
1.5E-01	I			9.0E-03	I					1	0.1		Prochloraz	67747-09-5	3.6E+00	c*	1.5E+01	c*					3.7E-01	c*		1.9E-03	c*	
				6.0E-03	H					1	0.1		Profluralin	26399-36-0	3.7E+01	n	4.9E+02	n					2.6E+00	n		1.6E-01	n	
				1.5E-02	I					1	0.1		Prometon	1610-18-0	9.2E+01	n	1.2E+03	n					2.5E+01	n		1.2E-02	n	
				4.0E-03	I					1	0.1		Prometryn	7287-19-6	2.5E+01	n	3.3E+02	n					6.0E+00	n		9.0E-03	n	
				1.3E-02	I					1	0.1		Propachlor	1918-16-7	8.0E+01	n	1.1E+03	n					2.5E+01	n		1.5E-02	n	
				5.0E-03	I					1	0.1		Propanil	709-98-8	3.1E+01	n	4.1E+02	n					8.2E+00	n		4.5E-03	n	
				2.0E-02	I					1	0.1		Propargite	2312-35-8	1.2E+02	n	1.6E+03	n					1.6E+01	n		1.2E+00	n	
				2.0E-03	I					1	0.1		Propargyl Alcohol	107-19-7	1.2E+01	n	1.6E+02	n					4.0E+00	n		8.1E-04	n	
				2.0E-02	I					1	0.1		Propazine	139-40-2	1.2E+02	n	1.6E+03	n					3.4E+01	n		3.0E-02	n	
				2.0E-02	I					1	0.1		Propham	122-42-9	1.2E+02	n	1.6E+03	n					3.5E+01	n		2.2E-02	n	
				1.3E-02	I					1	0.1		Propiconazole	60207-90-1	8.0E+01	n	1.1E+03	n					2.1E+01	n		6.9E-02	n	
						8.0E-03	I	V		1		3.3E+04	Propionaldehyde	123-38-6	7.5E+00	n	3.1E+01	n	8.3E-01	n	3.5E+00	n	1.7E+00	n		3.4E-04	n	
				1.0E-01	X	1.0E+00	X	V		1	0.1	2.6E+02	Propyl benzene	103-65-1	3.3E+02	ns	2.2E+03	ns	1.0E+02	n	4.4E+02	n	6.6E+01	n		1.2E-01	n	
						3.0E+00	C	V		1	0.1	3.5E+02	Propylene	115-07-1	2.2E+02	n	9.3E+02	ns	3.1E+02	n	1.3E+03	n	6.3E+02	n		6.0E-01	n	
				2.0E+01	P					1	0.1		Propylene Glycol	57-55-6	1.2E+05	nm	1.6E+06	nm					4.0E+04	n		8.1E+00	n	
						2.7E-04	A			1	0.1		Propylene Glycol Dinitrate	6423-43-4	3.9E+04	n	1.6E+05	nm	2.8E-02	n	1.2E-01	n						

TR=1E-06
HQ=0.1

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information												Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vo c	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				7.0E-01	H					1	0.1		Propylene Glycol Monoethyl Ether	1569-02-4	4.3E+03	n	5.8E+04	n					1.4E+03	n		2.8E-01	n	
				7.0E-01	H	2.0E+00	I			1	0.1		Propylene Glycol Monomethyl Ether	107-98-2	4.3E+03	n	5.8E+04	n	2.1E+02	n	8.8E+02	n	1.4E+03	n		2.8E-01	n	
2.4E-01	I	3.7E-06	I			3.0E-02	I	V		1		7.8E+04	Propylene Oxide	75-56-9	2.1E+00	c*	9.7E+00	c*	7.6E-01	c**	3.3E+00	c**	2.7E-01	c*		5.6E-05	c*	
				2.5E-01	I					1	0.1		Pursuit	81335-77-5	1.5E+03	n	2.1E+04	n					4.7E+02	n		4.1E-01	n	
				2.5E-02	I					1	0.1		Pydrin	51630-58-1	1.5E+02	n	2.1E+03	n					5.0E+01	n		3.2E+01	n	
				1.0E-03	I			V		1		5.3E+05	Pyridine	110-86-1	7.8E+00	n	1.2E+02	n					2.0E+00	n		6.8E-04	n	
				5.0E-04	I					1	0.1		Quinalphos	13593-03-8	3.1E+00	n	4.1E+01	n					5.1E-01	n		4.3E-03	n	
3.0E+00	I									1	0.1		Quinoline	91-22-5	1.8E-01	c	7.7E-01	c					2.4E-02	c		7.8E-05	c	
						3.0E-02	A			1			Refractory Ceramic Fibers	NA	4.3E+06	nm	1.8E+07	nm	3.1E+00	n	1.3E+01	n						
				3.0E-02	I					1	0.1		Resmethrin	10453-86-8	1.8E+02	n	2.5E+03	n					6.7E+00	n		4.2E+00	n	
				5.0E-02	H					1	0.1		Ronnel	299-84-3	3.1E+02	n	4.1E+03	n					4.1E+01	n		3.7E-01	n	
				4.0E-03	I					1	0.1		Rotenone	83-79-4	2.5E+01	n	3.3E+02	n					6.1E+00	n		3.2E+00	n	
2.2E-01	C	6.3E-05	C						M	1	0.1		Safrole	94-59-7	5.4E-01	c	1.0E+01	c	1.6E-02	c	1.9E-01	c	9.5E-02	c		5.9E-05	c	
				2.5E-02	I					1	0.1		Savey	78587-05-0	1.5E+02	n	2.1E+03	n					1.1E+01	n		5.0E-02	n	
				5.0E-03	I					1			Selenious Acid	7783-00-8	3.9E+01	n	5.8E+02	n					1.0E+01	n			n	
				5.0E-03	I	2.0E-02	C			1			Selenium	7782-49-2	3.9E+01	n	5.8E+02	n	2.1E+00	n	8.8E+00	n	1.0E+01	n	5.0E+01	5.2E-02	n	2.6E-01
				5.0E-03	C	2.0E-02	C			1			Selenium Sulfide	7446-34-6	3.9E+01	n	5.8E+02	n	2.1E+00	n	8.8E+00	n	1.0E+01	n			n	
				9.0E-02	I					1	0.1		Sethoxydim	74051-80-2	5.5E+02	n	7.4E+03	n					1.0E+02	n		9.3E-01	n	
						3.0E-03	C			1			Silica (crystalline, respirable)	7631-86-9	4.3E+05	nm	1.8E+06	nm	3.1E-01	n	1.3E+00	n						
				5.0E-03	I					0.04			Silver	7440-22-4	3.9E+01	n	5.8E+02	n					9.4E+00	n		8.0E-02	n	
1.2E-01	H			5.0E-03	I					1	0.1		Simazine	122-34-9	4.4E+00	c**	1.9E+01	c*					6.1E-01	c*	4.0E+00	3.0E-04	c*	2.0E-03
				1.3E-02	I					1	0.1		Sodium Acifluorfen	62476-59-9	8.0E+01	n	1.1E+03	n					2.6E+01	n		2.1E-01	n	
				4.0E-03	I					1			Sodium Azide	26628-22-8	3.1E+01	n	4.7E+02	n					8.0E+00	n			n	
2.7E-01	H			3.0E-02	I					1	0.1		Sodium Diethyldithiocarbamate	148-18-5	2.0E+00	c*	8.6E+00	c					2.9E-01	c			c	
				5.0E-02	A	1.3E-02	C			1			Sodium Fluoride	7681-49-4	3.9E+02	n	5.8E+03	n	1.4E+00	n	5.7E+00	n	1.0E+02	n			n	
				2.0E-05	I					1	0.1		Sodium Fluoroacetate	62-74-8	1.2E-01	n	1.6E+00	n					4.0E-02	n		8.1E-06	n	
				1.0E-03	H					1			Sodium Metavanadate	13718-26-8	7.8E+00	n	1.2E+02	n					2.0E+00	n			n	
2.4E-02	H			3.0E-02	I					1	0.1		Stirofos (Tetrachlorovinphos)	961-11-5	2.2E+01	c**	9.6E+01	c*					2.8E+00	c*		8.1E-03	c*	
				6.0E-01	I					1			Strontium, Stable	7440-24-6	4.7E+03	n	7.0E+04	n					1.2E+03	n		4.2E+01	n	
				3.0E-04	I					1	0.1		Strychnine	57-24-9	1.8E+00	n	2.5E+01	n					5.9E-01	n		6.5E-03	n	
				2.0E-01	I	1.0E+00	I	V		1		8.7E+02	Styrene	100-42-5	6.0E+02	n	3.5E+03	ns	1.0E+02	n	4.4E+02	n	1.2E+02	n	1.0E+02	1.3E-01	n	1.1E-01
				1.0E-03	P	2.0E-03	P			1	0.1		Sulfolane	126-33-0	6.2E+00	n	8.2E+01	n	2.1E-01	n	8.8E-01	n	2.0E+00	n		4.4E-04	n	
				8.0E-04	P					1	0.1		Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	4.9E+00	n	6.6E+01	n					1.1E+00	n		6.5E-03	n	
						1.0E-03	C			1			Sulfuric Acid	7664-93-9	1.4E+05	nm	6.0E+05	nm	1.0E-01	n	4.4E-01	n						
				2.5E-02	I					1	0.1		Systhane	88671-89-0	1.5E+02	n	2.1E+03	n					4.5E+01	n		5.6E-01	n	
				3.0E-02	H					1	0.1		TCMTB	21564-17-0	1.8E+02	n	2.5E+03	n					4.8E+01	n		3.3E-01	n	
				7.0E-02	I					1	0.1		Tebuthiuron	34014-18-1	4.3E+02	n	5.8E+03	n					1.4E+02	n		3.9E-02	n	
				2.0E-02	H					1	0.1		Temephos	3383-96-8	1.2E+02	n	1.6E+03	n					4.0E+01	n		7.6E+00	n	
				1.3E-02	I					1	0.1		Terbacil	5902-51-2	8.0E+01	n	1.1E+03	n					2.5E+01	n		7.5E-03	n	
				2.5E-05	H					1	0.1		Terbufos	13071-79-9	1.5E-01	n	2.1E+00	n					2.4E-02	n		5.2E-05	n	
				1.0E-03	I					1	0.1		Terbutryn	886-50-0	6.2E+00	n	8.2E+01	n					1.3E+00	n		1.9E-03	n	
				1.0E-04	I					1	0.1		Tetrabromodiphenyl ether, 2,2',4,4'- (BDE-47)	5436-43-1	6.2E-01	n	8.2E+00	n					2.0E-01	n		5.3E-03	n	
				3.0E-04	I					1	0.1		Tetrachlorobenzene, 1,2,4,5-	95-94-3	1.8E+00	n	2.5E+01	n					1.7E-01	n		7.9E-04	n	
2.6E-02	I	7.4E-06	I	3.0E-02	I			V		1		6.8E+02	Tetrachloroethane, 1,1,1,2-	630-20-6	2.0E+00	c	8.8E+00	c	3.8E-01	c	1.7E+00	c	5.7E-01	c*		2.2E-04	c*	
2.0E-01	I	5.8E-05	C	2.0E-02	I			V		1		1.9E+03	Tetrachloroethane, 1,1,2,2-	79-34-5	6.0E-01	c	2.7E+00	c	4.8E-02	c	2.1E-01	c	7.6E-02	c		3.0E-05	c	
2.1E-03	I	2.6E-07	I	6.0E-03	I	4.0E-02	I	V		1		1.7E+02	Tetrachloroethylene	127-18-4	8.1E+00	n	3.9E+01	n	4.2E+00	n	1.8E+01	n	4.1E+00	n	5.0E+00	1.8E-03	n	2.3E-03
				3.0E-02	I					1	0.1		Tetrachlorophenol, 2,3,4,6-	58-90-2	1.8E+02	n	2.5E+03	n					2.4E+01	n		1.5E-01	n	
2.0E+01	H									1	0.1		Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	2.7E-02	c	1.2E-01	c					1.3E-03	c		4.4E-06	c	
				5.0E-04	I					1	0.1		Tetraethyl Dithiopyrophosphate	3689-24-5	3.1E+00	n	4.1E+01	n					7.1E-01	n		5.2E-04	n	
						8.0E+01	I	V		1		1.1E+03	Tetrafluoroethane, 1,1,1,2-	811-97-2	1.0E+04	ns	4.3E+04	ns	8.3E+03	n	3.5E+04	n	1.7E+04	n		9.3E+00	n	
				2.0E-03	P					1	0.1		Tetryl (Trinitrophenylmethylnitramine)	479-45-8	1.2E+01	n	1.6E+02	n					3.9E+00	n		3.7E-02	n	
				7.0E-06	X					1			Thallium (I) Nitrate	10102-45-1	5.5E-02	n	8.2E-01	n					1.4E-02	n			n	
				1.0E-05	X					1			Thallium (Soluble Salts)	7440-28-0	7.8E-02	n	1.2E+00	n					2.0E-02	n	2.0E+00	1.4E-03	n	1.4E-01
				6.0E-06	X					1			Thallium Acetate	563-68-8	4.7E-02	n	7.0E-01	n					1.2E-02	n			n	
				2.0E-05	X					1			Thallium Carbonate	6533-73-9	1.6E-01	n	2.3E+00	n					4.0E-02	n			n	
				6.0E-06	X					1			Thallium Chloride	7791-12-0	4.7E-02	n	7.0E-01	n					1.2E-02	n			n	
				2.0E-05	X					1			Thallium Sulfate	7446-18-6	1.6E-01	n	2.3E+00	n					4.0E-02	n			n	
				1.0E-02	I					1	0.1		Thiobencarb	28249-77-6	6.2E+01	n	8.2E+02	n					1.6E+01	n		5.5E-02	n	
				7.0E-02	X					1	0.008		Thiodiglycol	111-48-8	5.4E+02	n	7.9E+03	n					1.4E+02	n		2.8E-02	n	
				3.0E-04	H					1	0.1		Thiofanox	39196-18-4	1.8E+00	n	2.5E+01	n					5.3E-01	n		1.8E-04	n	
				8.0E-02	I					1	0.1		Thiophanate, Methyl	23564-05-8	4.9E+02	n	6.6E+03	n					1.6E+02	n		1.4E-01	n	
				5.0E-03	I					1	0.1		Thiram	137-26-8	3.1E+01	n	4.1E+02	n					9.8E+00	n		1.4E-02	n	
				6.0E-01	H					1			Tin	7440-31-5	4.7E+03	n	7.0E+04	n					1.2E+03	n		3.0E+02	n	
						1.0E-04	A			1			Titanium Tetrachloride	7550-45-0	1.4E+04	n	6.0E+04	n	1.0E-02	n	4.4E-02	n						
				8.0E-02	I	5.0E+00	I	V		1		8.2E+02	Toluene	108-88-3	4.9E+02	n	4.7E+03	ns	5.2E+02	n	2.2E+03	n	1.1E+02	n	1.0E+03	7.6E-02	n	6.9E-01

R=1E-06
HQ=0.1

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information													Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO $(mg/kg\text{-}day)^{-1}$	key	IUR $(ug/m^3)^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	voc	mutagen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
1.8E-01	X			2.0E-04	X					1	0.1		Toluene-2,5-diamine	95-70-5	1.2E+00	n	1.3E+01	c**					4.0E-01	n		1.2E-04	n	
3.0E-02	P			4.0E-03	X					1	0.1		Toluidine, p-	106-49-0	1.8E+01	c**	7.7E+01	c**					2.5E+00	c**		1.1E-03	c**	
				3.0E+00	P			V		1		3.4E-01	Total Petroleum Hydrocarbons (Aliphatic High)	NA	2.3E+04	ns	3.5E+05	nms					6.0E+03	n		2.4E+02	n	
						6.0E-01	P	V		1		1.4E+02	Total Petroleum Hydrocarbons (Aliphatic Low)	NA	5.2E+01	n	2.2E+02	ns	6.3E+01	n	2.6E+02	n	1.3E+02	n		8.8E-01	n	
				1.0E-02	X	1.0E-01	P	V		1		6.9E+00	Total Petroleum Hydrocarbons (Aliphatic Medium)	NA	9.6E+00	ns	4.4E+01	ns	1.0E+01	n	4.4E+01	n	1.0E+01	n		1.5E-01	n	
				4.0E-02	P					1	0.1		Total Petroleum Hydrocarbons (Aromatic High)	NA	2.5E+02	n	3.3E+03	n					8.0E+01	n		8.9E+00	n	
				4.0E-03	P	3.0E-02	P	V		1		1.8E+03	Total Petroleum Hydrocarbons (Aromatic Low)	NA	8.2E+00	n	4.2E+01	n	3.1E+00	n	1.3E+01	n	3.3E+00	n		1.7E-03	n	
				4.0E-03	P	3.0E-03	P	V		1			Total Petroleum Hydrocarbons (Aromatic Medium)	NA	1.1E+01	n	6.0E+01	n	3.1E-01	n	1.3E+00	n	5.5E-01	n		2.3E-03	n	
1.1E+00	I	3.2E-04	I							1	0.1		Toxaphene	8001-35-2	4.8E-01	c	2.1E+00	c	8.8E-03	c	3.8E-02	c	1.5E-02	c	3.0E+00	2.4E-03	c	4.6E-01
				7.5E-03	I					1	0.1		Tralomethrin	66841-25-6	4.6E+01	n	6.2E+02	n					1.5E+01	n		5.8E+00	n	
				3.0E-04	A					1	0.1		Tri-n-butyltin	688-73-3	1.8E+00	n	2.5E+01	n					3.7E-01	n		8.2E-03	n	
				8.0E+01	X					1	0.1		Triacetin	102-76-1	4.9E+05	nm	6.6E+06	nm					1.6E+05	n		4.5E+01	n	
				1.3E-02	I					1	0.1		Triallate	2303-17-5	8.0E+01	n	1.1E+03	n					1.2E+01	n		2.6E-02	n	
				1.0E-02	I					1	0.1		Triasulfuron	82097-50-5	6.2E+01	n	8.2E+02	n					2.0E+01	n		2.1E-02	n	
				5.0E-03	I					1	0.1		Tribromobenzene, 1,2,4-	615-54-3	3.1E+01	n	4.1E+02	n					4.5E+00	n		6.4E-03	n	
9.0E-03	P			1.0E-02	P					1	0.1		Tributyl Phosphate	126-73-8	5.9E+01	c**	2.6E+02	c**					5.1E+00	c**		2.5E-02	c**	
				3.0E-04	P					1	0.1		Tributyltin Compounds	NA	1.8E+00	n	2.5E+01	n					6.0E-01	n			n	
				3.0E-04	I					1	0.1		Tributyltin Oxide	56-35-9	1.8E+00	n	2.5E+01	n					5.7E-01	n		2.9E+01	n	
				3.0E+01	I	3.0E+01	H	V		1		9.1E+02	Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	4.0E+03	ns	1.7E+04	ns	3.1E+03	n	1.3E+04	n	5.5E+03	n		1.4E+01	n	
7.0E-02	I			2.0E-02	I					1	0.1		Trichloroacetic Acid	76-03-9	7.6E+00	c*	3.3E+01	c*					1.1E+00	c*	6.0E+01	2.2E-04	c*	1.2E-02
2.9E-02	H									1	0.1		Trichloroaniline HCl, 2,4,6-	33663-50-2	1.8E+01	c	8.0E+01	c					2.7E+00	c		7.4E-03	c	
7.0E-03	X			3.0E-05	X					1	0.1		Trichloroaniline, 2,4,6-	634-93-5	1.8E-01	n	2.5E+00	n					4.0E-02	n		3.6E-04	n	
				8.0E-04	X			V		1	0.1		Trichlorobenzene, 1,2,3-	87-61-6	4.9E+00	n	6.6E+01	n					7.0E-01	n		2.1E-03	n	
2.9E-02	P			1.0E-02	I	2.0E-03	P	V		1		4.0E+02	Trichlorobenzene, 1,2,4-	120-82-1	5.8E+00	n	2.6E+01	n	2.1E-01	n	8.8E-01	n	4.0E-01	n	7.0E+01	1.2E-03	n	2.0E-01
				2.0E+00	I	5.0E+00	I	V		1		6.4E+02	Trichloroethane, 1,1,1-	71-55-6	8.1E+02	ns	3.6E+03	ns	5.2E+02	n	2.2E+03	n	8.0E+02	n	2.0E+02	2.8E-01	n	7.0E-02
5.7E-02	I	1.6E-05	I	4.0E-03	I	2.0E-04	X	V		1		2.2E+03	Trichloroethane, 1,1,2-	79-00-5	1.5E-01	n	6.3E-01	n	2.1E-02	n	8.8E-02	n	4.1E-02	n	5.0E+00	1.3E-05	n	1.6E-03
4.6E-02	I	4.1E-06	I	5.0E-04	I	2.0E-03	I	V	M	1		6.9E+02	Trichloroethylene	79-01-6	4.1E-01	n	1.9E+00	n	2.1E-01	n	8.8E-01	n	2.8E-01	n	5.0E+00	1.0E-04	n	1.8E-03
				3.0E-01	I	7.0E-01	H	V		1		1.2E+03	Trichlorofluoromethane	75-69-4	7.3E+01	n	3.1E+02	n	7.3E+01	n	3.1E+02	n	1.1E+02	n		7.3E-02	n	
				1.0E-01	I					1	0.1		Trichlorophenol, 2,4,5-	95-95-4	6.2E+02	n	8.2E+03	n					1.2E+02	n		4.4E-01	n	
1.1E-02	I	3.1E-06	I	1.0E-03	P					1	0.1		Trichlorophenol, 2,4,6-	88-06-2	6.2E+00	n	8.2E+01	n	9.1E-01	c	4.0E+00	c	1.2E+00	n		4.5E-03	n	
				1.0E-02	I					1	0.1		Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	6.2E+01	n	8.2E+02	n					1.6E+01	n		6.7E-03	n	
				8.0E-03	I					1	0.1		Trichlorophenoxypropionic acid, -2,4,5	93-72-1	4.9E+01	n	6.6E+02	n					1.1E+01	n	5.0E+01	6.1E-03	n	2.8E-02
				5.0E-03	I			V		1		1.3E+03	Trichloropropane, 1,1,2-	598-77-6	3.9E+01	n	5.8E+02	n					8.8E+00	n		3.5E-03	n	
3.0E+01	I			4.0E-03	I	3.0E-04	I	V	M	1		1.4E+03	Trichloropropane, 1,2,3-	96-18-4	5.1E-03	c*	1.1E-01	c*	3.1E-02	n	1.3E-01	n	7.5E-04	c*		3.2E-07	c*	
				3.0E-03	X	3.0E-04	P	V		1		4.5E+02	Trichloropropene, 1,2,3-	96-19-5	7.3E-02	n	3.1E-01	n	3.1E-02	n	1.3E-01	n	6.2E-02	n		3.1E-05	n	
				2.0E-02	A					1	0.1		Tricresyl Phosphate (TCP)	1330-78-5	5.8E+02	n	5.6E+03	n					1.6E+01	n		1.5E+00	n	
				3.0E-03	I					1	0.1		Tridiphane	58138-08-2	1.8E+01	n	2.5E+02	n					1.8E+00	n		1.3E-02	n	
						7.0E-03	I	V		1		2.8E+04	Triethylamine	121-44-8	1.2E+01	n	4.8E+01	n	7.3E-01	n	3.1E+00	n	1.5E+00	n		4.4E-04	n	
7.7E-03	I			7.5E-03	I					1	0.1		Trifluralin	1582-09-8	4.6E+01	n	3.0E+02	c**					2.5E+00	c**		8.2E-02	c**	
2.0E-02	P			1.0E-02	P					1	0.1		Trimethyl Phosphate	512-56-1	2.7E+01	c**	1.2E+02	c**					3.9E+00	c**		8.6E-04	c**	
						5.0E-03	P	V		1		2.9E+02	Trimethylbenzene, 1,2,3-	526-73-8	4.9E+00	n	2.1E+01	n	5.2E-01	n	2.2E+00	n	1.0E+00	n		1.5E-03	n	
						7.0E-03	P	V		1		2.2E+02	Trimethylbenzene, 1,2,4-	95-63-6	5.8E+00	n	2.4E+01	n	7.3E-01	n	3.1E+00	n	1.5E+00	n		2.1E-03	n	
				1.0E-02	X			V		1		1.8E+02	Trimethylbenzene, 1,3,5-	108-67-8	7.8E+01	n	1.2E+03	ns					1.2E+01	n		1.7E-02	n	
				3.0E-02	I					1	0.019		Trinitrobenzene, 1,3,5-	99-35-4	2.2E+02	n	3.2E+03	n					5.9E+01	n		2.1E-01	n	
3.0E-02	I			5.0E-04	I					1	0.032		Trinitrotoluene, 2,4,6-	118-96-7	3.6E+00	n	5.2E+01	n					9.8E-01	n		5.7E-03	n	
				2.0E-02	P					1	0.1		Triphenylphosphine Oxide	791-28-6	1.2E+02	n	1.6E+03	n					3.6E+01	n		1.5E-01	n	
				2.0E-02	A					1	0.1		Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	1.2E+02	n	1.6E+03	n					3.6E+01	n		8.0E-01	n	
				1.0E-02	X					1	0.1		Tris(1-chloro-2-propyl)phosphate	13674-84-5	6.2E+01	n	8.2E+02	n					1.9E+01	n		6.5E-02	n	
2.0E-02	P			7.0E-03	P					1	0.1		Tris(2-chloroethyl)phosphate	115-96-8	2.7E+01	c**	1.2E+02	c**					3.8E+00	c**		3.8E-03	c**	
3.2E-03	P			1.0E-01	P					1	0.1		Tris(2-ethylhexyl)phosphate	78-42-2	1.7E+02	c**	7.2E+02	c*					2.4E+01	c**		1.2E+02	c**	
				3.0E-03	I	4.0E-05	A			1			Uranium (Soluble Salts)	NA	2.3E+01	n	3.5E+02	n	4.2E-03	n	1.8E-02	n	6.0E+00	n	3.0E+01	2.7E+00	n	1.4E+01
1.0E+00	C	2.9E-04	C						M	1	0.1		Urethane	51-79-6	1.2E-01	c	2.3E+00	c	3.5E-03	c	4.2E-02	c	2.5E-02	c		5.6E-06	c	
		8.3E-03	P	9.0E-03	I	7.0E-06	P			0.026			Vanadium Pentoxide	1314-62-1	6.6E+01	n	8.4E+02	n	3.4E-04	c**	1.5E-03	c**	1.5E+01	n			n	
				5.0E-03	S	1.0E-04	A			0.026			Vanadium and Compounds	7440-62-2	3.9E+01	n	5.8E+02	n	1.0E-02	n	4.4E-02	n	8.6E+00	n		8.6E+00	n	
				1.0E-03	I					1	0.1		Vernolate	1929-77-7	6.2E+00	n	8.2E+01	n					1.1E+00	n		8.9E-04	n	
				2.5E-02	I					1	0.1		Vinclozolin	50471-44-8	1.5E+02	n	2.1E+03	n					4.4E+01	n		3.4E-02	n	
				1.0E+00	H	2.0E-01	I	V		1		2.8E+03	Vinyl Acetate	108-05-4	9.1E+01	n	3.8E+02	n	2.1E+01	n	8.8E+01	n	4.1E+01	n		8.7E-03	n	
		3.2E-05	H			3.0E-03	I	V		1		3.4E+03	Vinyl Bromide	593-60-2	1.2E-01	c**	5.2E-01	c**	8.8E-02	c**	3.8E-01	c**	1.8E-01	c**		5.1E-05	c**	
7.2E-01	I	4.4E-06	I	3.0E-03	I	1.0E-01	I	V	M	1		3.9E+03	Vinyl Chloride	75-01-4	5.9E-02	c	1.7E+00	c*	1.7E-01	c*	2.8E+00	c*	1.9E-02	c	2.0E+00	6.5E-06	c	6.9E-04
				3.0E-04	I					1	0.1		Warfarin	81-81-2	1.8E+00	n	2.5E+01	n					5.6E-01	n		5.9E-04	n	
				2.0E-01	S	1.0E-01	S	V		1		3.9E+02	Xylene, P-	106-42-3	5.6E+01	n	2.4E+02	n	1.0E+01	n	4.4E+01	n	1.9E+01	n		1.9E-02	n	
				2.0E-01	S	1.0E-01	S	V		1		3.9E+02	Xylene, m-	108-38-3	5.5E+01	n	2.4E+02	n	1.0E+01	n	4.4E+01	n	1.9E+01	n		1.9E-02	n	
				2.0E-01	S	1.0E-01	S	V		1		4.3E+02	Xylene, o-	95-47-6	6.5E+01	n	2.8E+02	n	1.0E+01	n	4.4E+01	n	1.9E+01	n		1.9E-02	n	
				2.0E-01	I	1.0E-01	I	V		1		2.6E+02	Xylenes	1330-20-7	5.8E+01	n	2.5E+02	n	1.0E+01	n	4.4E+01	n	1.9E+01	n	1.0E+04	1.9E-02	n	9.8E+00
				3.0E-04	I					1			Zinc Phosphide	1314-84-7	2.3E+00	n	3.5E+01	n					6.0E-01	n			n	

TR=1E-06
HQ=0.1

Key: I = IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; J = New Jersey; O = EPA Office of Water; F = See FAQ; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile;
R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Toxicity and Chemical-specific Information												Contaminant		Screening Levels												Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	voc	muta-gen	GIABS	ABS	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				3.0E-01	I					1			Zinc and Compounds	7440-66-6	2.3E+03	n	3.5E+04	n					6.0E+02	n		3.7E+01	n	
				5.0E-02	I					1	0.1		Zineb	12122-67-7	3.1E+02	n	4.1E+03	n					9.9E+01	n		2.9E-01	n	
				8.0E-05	X					1			Zirconium	7440-67-7	6.3E-01	n	9.3E+00	n					1.6E-01	n		4.8E-01	n	

Appendix F – HHRA Supporting Documentation

Appendix F-1 – ProUCL Output Sheets for Soil Sample Data

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for Data Sets with Non-Detects**											
2												
3	User Selected Options											
4	Date/Time of Computation			8/7/2014 4:15:18 PM								
5	From File			Wix Soil Input.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	**Acetone**											
11												
12	**General Statistics**											
13	Total Number of Observations					18	Number of Distinct Observations					18
14	Number of Detects					8	Number of Non-Detects					10
15	Number of Distinct Detects					8	Number of Distinct Non-Detects					10
16	Minimum Detect					10.3	Minimum Non-Detect					31.1
17	Maximum Detect					1150	Maximum Non-Detect					46800
18	Variance Detects					160697	Percent Non-Detects					55.56%
19	Mean Detects					158	SD Detects					400.9
20	Median Detects					16.65	CV Detects					2.538
21	Skewness Detects					2.828	Kurtosis Detects					7.997
22	Mean of Logged Detects					3.285	SD of Logged Detects					1.546
23												
24	**Normal GOF Test on Detects Only**											
25	Shapiro Wilk Test Statistic					0.429	**Shapiro Wilk GOF Test**					
26	5% Shapiro Wilk Critical Value					0.818	Detected Data Not Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.505	**Lilliefors GOF Test**					
28	5% Lilliefors Critical Value					0.313	Detected Data Not Normal at 5% Significance Level					
29	**Detected Data Not Normal at 5% Significance Level**											
30												
31	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
32	Mean					103.5	Standard Error of Mean					89.59
33	SD					302.1	95% KM (BCA) UCL					267.5
34	95% KM (t) UCL					259.3	95% KM (Percentile Bootstrap) UCL					259
35	95% KM (z) UCL					250.8	95% KM Bootstrap t UCL					6503
36	90% KM Chebyshev UCL					372.2	95% KM Chebyshev UCL					494
37	97.5% KM Chebyshev UCL					663	99% KM Chebyshev UCL					994.9
38												
39	**Gamma GOF Tests on Detected Observations Only**											
40	A-D Test Statistic					2.059	**Anderson-Darling GOF Test**					
41	5% A-D Critical Value					0.784	Detected Data Not Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.493	**Kolmogrov-Smirnoff GOF**					
43	5% K-S Critical Value					0.314	Detected Data Not Gamma Distributed at 5% Significance Level					
44	**Detected Data Not Gamma Distributed at 5% Significance Level**											
45												
46	**Gamma Statistics on Detected Data Only**											
47	k hat (MLE)					0.374	k star (bias corrected MLE)					0.317
48	Theta hat (MLE)					422.1	Theta star (bias corrected MLE)					497.9
49	nu hat (MLE)					5.988	nu star (bias corrected)					5.076
50	MLE Mean (bias corrected)					158	MLE Sd (bias corrected)					280.5

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	**Gamma Kaplan-Meier (KM) Statistics**											
53					k hat (KM)	0.117					nu hat (KM)	4.221
54					Approximate Chi Square Value (4.22, α)	0.811					Adjusted Chi Square Value (4.22, β)	0.682
55					95% Gamma Approximate KM-UCL (use when n>=50)	538.6					95% Gamma Adjusted KM-UCL (use when n<50)	640.5
56												
57	**Gamma ROS Statistics using Imputed Non-Detects**											
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
59	GROS may not be used when kstar of detected data is small such as < 0.1											
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs											
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
62					Minimum	0.01					Mean	70.21
63					Maximum	1150					Median	0.01
64					SD	269.6					CV	3.84
65					k hat (MLE)	0.144					k star (bias corrected MLE)	0.157
66					Theta hat (MLE)	486.1					Theta star (bias corrected MLE)	446
67					nu hat (MLE)	5.2					nu star (bias corrected)	5.667
68					MLE Mean (bias corrected)	70.21					MLE Sd (bias corrected)	177
69											Adjusted Level of Significance (β)	0.0357
70					Approximate Chi Square Value (5.67, α)	1.472					Adjusted Chi Square Value (5.67, β)	1.278
71					95% Gamma Approximate UCL (use when n>=50)	270.3					95% Gamma Adjusted UCL (use when n<50)	311.3
72												
73	**Lognormal GOF Test on Detected Observations Only**											
74					Shapiro Wilk Test Statistic	0.595	**Shapiro Wilk GOF Test**					
75					5% Shapiro Wilk Critical Value	0.818	Detected Data Not Lognormal at 5% Significance Level					
76					Lilliefors Test Statistic	0.396	**Lilliefors GOF Test**					
77					5% Lilliefors Critical Value	0.313	Detected Data Not Lognormal at 5% Significance Level					
78	**Detected Data Not Lognormal at 5% Significance Level**											
79												
80	**Lognormal ROS Statistics Using Imputed Non-Detects**											
81					Mean in Original Scale	82.15					Mean in Log Scale	3.163
82					SD in Original Scale	266.5					SD in Log Scale	1
83					95% t UCL (assumes normality of ROS data)	191.4					95% Percentile Bootstrap UCL	207.6
84					95% BCA Bootstrap UCL	272.3					95% Bootstrap t UCL	5125
85					95% H-UCL (Log ROS)	73.91						
86												
87	**DL/2 Statistics**											
88					**DL/2 Normal**						**DL/2 Log-Transformed**	
89					Mean in Original Scale	1689					Mean in Log Scale	4.603
90					SD in Original Scale	5458					SD in Log Scale	2.344
91					95% t UCL (Assumes normality)	3927					95% H-Stat UCL	25888
92	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
93												
94	**Nonparametric Distribution Free UCL Statistics**											
95	**Data do not follow a Discernible Distribution at 5% Significance Level**											
96												
97	**Suggested UCL to Use**											
98					97.5% KM (Chebyshev) UCL	663						
99												
100	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
101	Recommendations are based upon data size, data distribution, and skewness.											
102	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
103	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Data Sets with Non-Detects											
2												
3	User Selected Options											
4	Date/Time of Computation			7/24/2014 3:25:14 PM								
5	From File			Wix ProUCL.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	Benzene											
11												
12	General Statistics											
13	Total Number of Observations					18	Number of Distinct Observations					16
14	Number of Detects					5	Number of Non-Detects					13
15	Number of Distinct Detects					5	Number of Distinct Non-Detects					12
16	Minimum Detect					1.2	Minimum Non-Detect					1.6
17	Maximum Detect					7.3	Maximum Non-Detect					2340
18	Variance Detects					5.887	Percent Non-Detects					72.22%
19	Mean Detects					3.68	SD Detects					2.426
20	Median Detects					4	CV Detects					0.659
21	Skewness Detects					0.717	Kurtosis Detects					0.116
22	Mean of Logged Detects					1.104	SD of Logged Detects					0.733
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.921	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.762	Detected Data appear Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.215	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.396	Detected Data appear Normal at 5% Significance Level					
29	Detected Data appear Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	Mean					2.538	Standard Error of Mean					0.661
33	SD					1.856	95% KM (BCA) UCL					4.05
34	95% KM (t) UCL					3.687	95% KM (Percentile Bootstrap) UCL					3.977
35	95% KM (z) UCL					3.625	95% KM Bootstrap t UCL					3.768
36	90% KM Chebyshev UCL					4.52	95% KM Chebyshev UCL					5.418
37	97.5% KM Chebyshev UCL					6.664	99% KM Chebyshev UCL					9.112
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					0.301	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.683	Detected data appear Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.234	Kolmogrov-Smirnoff GOF					
43	5% K-S Critical Value					0.36	Detected data appear Gamma Distributed at 5% Significance Level					
44	Detected data appear Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					2.674	k star (bias corrected MLE)					1.203
48	Theta hat (MLE)					1.376	Theta star (bias corrected MLE)					3.059
49	nu hat (MLE)					26.74	nu star (bias corrected)					12.03
50	MLE Mean (bias corrected)					3.68	MLE Sd (bias corrected)					3.355
51												
52	Gamma Kaplan-Meier (KM) Statistics											
53	k hat (KM)					1.869	nu hat (KM)					67.28
54	Approximate Chi Square Value (67.28, α)					49.4	Adjusted Chi Square Value (67.28, β)					47.93
55	95% Gamma Approximate KM-UCL (use when n>=50)					3.456	95% Gamma Adjusted KM-UCL (use when n<50)					3.562

	A	B	C	D	E	F	G	H	I	J	K	L
56												
57	**Gamma ROS Statistics using Imputed Non-Detects**											
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
59	GROS may not be used when kstar of detected data is small such as < 0.1											
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs											
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
62					Minimum	0.775			Mean			2.301
63					Maximum	7.3			Median			2.067
64					SD	1.533			CV			0.666
65					k hat (MLE)	3.532			k star (bias corrected MLE)			2.981
66					Theta hat (MLE)	0.651			Theta star (bias corrected MLE)			0.772
67					nu hat (MLE)	127.2			nu star (bias corrected)			107.3
68					MLE Mean (bias corrected)	2.301			MLE Sd (bias corrected)			1.333
69									Adjusted Level of Significance (β)			0.0357
70					Approximate Chi Square Value (107.30, α)	84.39			Adjusted Chi Square Value (107.30, β)			82.44
71					95% Gamma Approximate UCL (use when n>=50)	2.926			95% Gamma Adjusted UCL (use when n<50)			2.995
72												
73	**Lognormal GOF Test on Detected Observations Only**											
74					Shapiro Wilk Test Statistic	0.936			**Shapiro Wilk GOF Test**			
75					5% Shapiro Wilk Critical Value	0.762			Detected Data appear Lognormal at 5% Significance Level			
76					Lilliefors Test Statistic	0.25			**Lilliefors GOF Test**			
77					5% Lilliefors Critical Value	0.396			Detected Data appear Lognormal at 5% Significance Level			
78	**Detected Data appear Lognormal at 5% Significance Level**											
79												
80	**Lognormal ROS Statistics Using Imputed Non-Detects**											
81					Mean in Original Scale	2.304			Mean in Log Scale			0.706
82					SD in Original Scale	1.499			SD in Log Scale			0.473
83					95% t UCL (assumes normality of ROS data)	2.919			95% Percentile Bootstrap UCL			2.87
84					95% BCA Bootstrap UCL	3.131			95% Bootstrap t UCL			3.457
85					95% H-UCL (Log ROS)	2.85						
86												
87	**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**											
88					KM Mean (logged)	0.715			95% H-UCL (KM -Log)			3.436
89					KM SD (logged)	0.623			95% Critical H Value (KM-Log)			2.15
90					KM Standard Error of Mean (logged)	0.236						
91												
92	**DL/2 Statistics**											
93					**DL/2 Normal**				**DL/2 Log-Transformed**			
94					Mean in Original Scale	88.08			Mean in Log Scale			2.124
95					SD in Original Scale	272.6			SD in Log Scale			2.063
96					95% t UCL (Assumes normality)	199.8			95% H-Stat UCL			643.2
97	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
98												
99	**Nonparametric Distribution Free UCL Statistics**											
100	**Detected Data appear Normal Distributed at 5% Significance Level**											
101												
102	**Suggested UCL to Use**											
103					95% KM (t) UCL	3.687			95% KM (Percentile Bootstrap) UCL			3.977
104												
105	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
106	Recommendations are based upon data size, data distribution, and skewness.											
107	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
108	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
109												
110	**cis-1,2-Dichloroethene**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						General Statistics						
113					Total Number of Observations	18				Number of Distinct Observations		16
114					Number of Detects	4				Number of Non-Detects		14
115					Number of Distinct Detects	4				Number of Distinct Non-Detects		12
116					Minimum Detect	1.3				Minimum Non-Detect		1.6
117					Maximum Detect	464				Maximum Non-Detect		2340
118					Variance Detects	45559				Percent Non-Detects		77.78%
119					Mean Detects	147.4				SD Detects		213.4
120					Median Detects	62.15				CV Detects		1.448
121					Skewness Detects	1.867				Kurtosis Detects		3.576
122					Mean of Logged Detects	3.646				SD of Logged Detects		2.464
123												
124						Normal GOF Test on Detects Only						
125					Shapiro Wilk Test Statistic	0.766				Shapiro Wilk GOF Test		
126					5% Shapiro Wilk Critical Value	0.748				Detected Data appear Normal at 5% Significance Level		
127					Lilliefors Test Statistic	0.376				Lilliefors GOF Test		
128					5% Lilliefors Critical Value	0.443				Detected Data appear Normal at 5% Significance Level		
129						Detected Data appear Normal at 5% Significance Level						
130												
131						Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs						
132					Mean	36.7				Standard Error of Mean		30.6
133					SD	109				95% KM (BCA) UCL		N/A
134					95% KM (t) UCL	89.94				95% KM (Percentile Bootstrap) UCL		N/A
135					95% KM (z) UCL	87.04				95% KM Bootstrap t UCL		N/A
136					90% KM Chebyshev UCL	128.5				95% KM Chebyshev UCL		170.1
137					97.5% KM Chebyshev UCL	227.8				99% KM Chebyshev UCL		341.2
138												
139						Gamma GOF Tests on Detected Observations Only						
140					A-D Test Statistic	0.24				Anderson-Darling GOF Test		
141					5% A-D Critical Value	0.684				Detected data appear Gamma Distributed at 5% Significance Level		
142					K-S Test Statistic	0.206				Kolmogrov-Smirnoff GOF		
143					5% K-S Critical Value	0.411				Detected data appear Gamma Distributed at 5% Significance Level		
144						Detected data appear Gamma Distributed at 5% Significance Level						
145												
146						Gamma Statistics on Detected Data Only						
147					k hat (MLE)	0.475				k star (bias corrected MLE)		0.286
148					Theta hat (MLE)	310.1				Theta star (bias corrected MLE)		516.3
149					nu hat (MLE)	3.803				nu star (bias corrected)		2.284
150					MLE Mean (bias corrected)	147.4				MLE Sd (bias corrected)		275.9
151												
152						Gamma Kaplan-Meier (KM) Statistics						
153					k hat (KM)	0.113				nu hat (KM)		4.083
154					Approximate Chi Square Value (4.08, α)	0.755				Adjusted Chi Square Value (4.08, β)		0.632
155					95% Gamma Approximate KM-UCL (use when n>=50)	198.6				95% Gamma Adjusted KM-UCL (use when n<50)		237
156												
157						Gamma ROS Statistics using Imputed Non-Detects						
158						GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs						
159						GROS may not be used when kstar of detected data is small such as < 0.1						
160						For such situations, GROS method tends to yield inflated values of UCLs and BTVs						
161						For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates						
162					Minimum	0.01				Mean		32.76
163					Maximum	464				Median		0.01
164					SD	109.6				CV		3.346
165					k hat (MLE)	0.126				k star (bias corrected MLE)		0.142

	A	B	C	D	E	F	G	H	I	J	K	L
166					Theta hat (MLE)	260.3				Theta star (bias corrected MLE)		230.9
167					nu hat (MLE)	4.53				nu star (bias corrected)		5.109
168					MLE Mean (bias corrected)	32.76				MLE Sd (bias corrected)		86.97
169										Adjusted Level of Significance (β)		0.0357
170					Approximate Chi Square Value (5.11, α)	1.203				Adjusted Chi Square Value (5.11, β)		1.033
171					95% Gamma Approximate UCL (use when n>=50)	139.2				95% Gamma Adjusted UCL (use when n<50)		N/A
172												
173					**Lognormal GOF Test on Detected Observations Only**							
174					Shapiro Wilk Test Statistic	0.937				**Shapiro Wilk GOF Test**		
175					5% Shapiro Wilk Critical Value	0.748				Detected Data appear Lognormal at 5% Significance Level		
176					Lilliefors Test Statistic	0.277				**Lilliefors GOF Test**		
177					5% Lilliefors Critical Value	0.443				Detected Data appear Lognormal at 5% Significance Level		
178					**Detected Data appear Lognormal at 5% Significance Level**							
179												
180					**Lognormal ROS Statistics Using Imputed Non-Detects**							
181					Mean in Original Scale	34.05				Mean in Log Scale		1.092
182					SD in Original Scale	109.2				SD in Log Scale		1.821
183					95% t UCL (assumes normality of ROS data)	78.83				95% Percentile Bootstrap UCL		82.85
184					95% BCA Bootstrap UCL	111				95% Bootstrap t UCL		351
185					95% H-UCL (Log ROS)	91.14						
186												
187					**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**							
188					KM Mean (logged)	1.123				95% H-UCL (KM -Log)		90.24
189					KM SD (logged)	1.809				95% Critical H Value (KM-Log)		3.972
190					KM Standard Error of Mean (logged)	0.525						
191												
192					**DL/2 Statistics**							
193					**DL/2 Normal**					**DL/2 Log-Transformed**		
194					Mean in Original Scale	108.8				Mean in Log Scale		2.1
195					SD in Original Scale	286.6				SD in Log Scale		2.266
196					95% t UCL (Assumes normality)	226.4				95% H-Stat UCL		1488
197					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
198												
199					**Nonparametric Distribution Free UCL Statistics**							
200					**Detected Data appear Normal Distributed at 5% Significance Level**							
201												
202					**Suggested UCL to Use**							
203					95% KM (t) UCL	89.94				95% KM (Percentile Bootstrap) UCL		N/A
204					**Warning: One or more Recommended UCL(s) not available!**							
205												
206					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
207					Recommendations are based upon data size, data distribution, and skewness.							
208					These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							
209					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
210												
211	**Ethylbenzene**											
212												
213					**General Statistics**							
214					Total Number of Observations	18				Number of Distinct Observations		15
215					Number of Detects	4				Number of Non-Detects		14
216					Number of Distinct Detects	4				Number of Distinct Non-Detects		12
217					Minimum Detect	1.6				Minimum Non-Detect		1.6
218					Maximum Detect	44				Maximum Non-Detect		2340
219					Variance Detects	440.4				Percent Non-Detects		77.78%
220					Mean Detects	12.53				SD Detects		20.99

	A	B	C	D	E	F	G	H	I	J	K	L
221					Median Detects	2.25					CV Detects	1.676
222					Skewness Detects	1.998					Kurtosis Detects	3.994
223					Mean of Logged Detects	1.466					SD of Logged Detects	1.556
224												
225					**Normal GOF Test on Detects Only**							
226					Shapiro Wilk Test Statistic	0.646	**Shapiro Wilk GOF Test**					
227					5% Shapiro Wilk Critical Value	0.748	Detected Data Not Normal at 5% Significance Level					
228					Lilliefors Test Statistic	0.434	**Lilliefors GOF Test**					
229					5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level					
230					**Detected Data appear Approximate Normal at 5% Significance Level**							
231												
232					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
233					Mean	5.162	Standard Error of Mean					3.596
234					SD	11.22	95% KM (BCA) UCL					N/A
235					95% KM (t) UCL	11.42	95% KM (Percentile Bootstrap) UCL					N/A
236					95% KM (z) UCL	11.08	95% KM Bootstrap t UCL					N/A
237					90% KM Chebyshev UCL	15.95	95% KM Chebyshev UCL					20.84
238					97.5% KM Chebyshev UCL	27.62	99% KM Chebyshev UCL					40.94
239												
240					**Gamma GOF Tests on Detected Observations Only**							
241					A-D Test Statistic	0.79	**Anderson-Darling GOF Test**					
242					5% A-D Critical Value	0.677	Detected Data Not Gamma Distributed at 5% Significance Level					
243					K-S Test Statistic	0.444	**Kolmogrov-Smirnoff GOF**					
244					5% K-S Critical Value	0.408	Detected Data Not Gamma Distributed at 5% Significance Level					
245					**Detected Data Not Gamma Distributed at 5% Significance Level**							
246												
247					**Gamma Statistics on Detected Data Only**							
248					k hat (MLE)	0.584	k star (bias corrected MLE)					0.313
249					Theta hat (MLE)	21.44	Theta star (bias corrected MLE)					40.05
250					nu hat (MLE)	4.674	nu star (bias corrected)					2.502
251					MLE Mean (bias corrected)	12.53	MLE Sd (bias corrected)					22.4
252												
253					**Gamma Kaplan-Meier (KM) Statistics**							
254					k hat (KM)	0.212	nu hat (KM)					7.622
255					Approximate Chi Square Value (7.62, α)	2.518	Adjusted Chi Square Value (7.62, β)					2.245
256					95% Gamma Approximate KM-UCL (use when n>=50)	15.62	95% Gamma Adjusted KM-UCL (use when n<50)					17.52
257												
258					**Gamma ROS Statistics using Imputed Non-Detects**							
259					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs							
260					GROS may not be used when kstar of detected data is small such as < 0.1							
261					For such situations, GROS method tends to yield inflated values of UCLs and BTVs							
262					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates							
263					Minimum	0.01	Mean					3.107
264					Maximum	44	Median					0.01
265					SD	10.27	CV					3.304
266					k hat (MLE)	0.196	k star (bias corrected MLE)					0.201
267					Theta hat (MLE)	15.84	Theta star (bias corrected MLE)					15.49
268					nu hat (MLE)	7.064	nu star (bias corrected)					7.22
269					MLE Mean (bias corrected)	3.107	MLE Sd (bias corrected)					6.938
270							Adjusted Level of Significance (β)					0.0357
271					Approximate Chi Square Value (7.22, α)	2.292	Adjusted Chi Square Value (7.22, β)					2.035
272					95% Gamma Approximate UCL (use when n>=50)	9.788	95% Gamma Adjusted UCL (use when n<50)					N/A
273												
274					**Lognormal GOF Test on Detected Observations Only**							
275					Shapiro Wilk Test Statistic	0.738	**Shapiro Wilk GOF Test**					

	A	B	C	D	E	F	G	H	I	J	K	L
276					5% Shapiro Wilk Critical Value	0.748	Detected Data Not Lognormal at 5% Significance Level					
277					Lilliefors Test Statistic	0.388	**Lilliefors GOF Test**					
278					5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level					
279	**Detected Data appear Approximate Lognormal at 5% Significance Level**											
280												
281	**Lognormal ROS Statistics Using Imputed Non-Detects**											
282					Mean in Original Scale	3.885				Mean in Log Scale		0.485
283					SD in Original Scale	10.03				SD in Log Scale		1.018
284					95% t UCL (assumes normality of ROS data)	7.998				95% Percentile Bootstrap UCL		8.563
285					95% BCA Bootstrap UCL	11.02				95% Bootstrap t UCL		50.58
286					95% H-UCL (Log ROS)	5.26						
287												
288	**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**											
289					KM Mean (logged)	0.879				95% H-UCL (KM -Log)		5.775
290					KM SD (logged)	0.857				95% Critical H Value (KM-Log)		2.437
291					KM Standard Error of Mean (logged)	0.286						
292												
293	**DL/2 Statistics**											
294	**DL/2 Normal**						**DL/2 Log-Transformed**					
295					Mean in Original Scale	87.06				Mean in Log Scale		2.013
296					SD in Original Scale	272.8				SD in Log Scale		2.08
297					95% t UCL (Assumes normality)	198.9				95% H-Stat UCL		618.8
298	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
299												
300	**Nonparametric Distribution Free UCL Statistics**											
301	**Detected Data appear Approximate Normal Distributed at 5% Significance Level**											
302												
303	**Suggested UCL to Use**											
304					95% KM (t) UCL	11.42				95% KM (Percentile Bootstrap) UCL		N/A
305	**Warning: One or more Recommended UCL(s) not available!**											
306												
307	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
308	Recommendations are based upon data size, data distribution, and skewness.											
309	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
310	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
311												
312	**Toluene**											
313												
314	**General Statistics**											
315					Total Number of Observations	18				Number of Distinct Observations		18
316					Number of Detects	13				Number of Non-Detects		5
317					Number of Distinct Detects	13				Number of Distinct Non-Detects		5
318					Minimum Detect	2.3				Minimum Non-Detect		3.8
319					Maximum Detect	1620000				Maximum Non-Detect		5.2
320					Variance Detects	1.979E+11				Percent Non-Detects		27.78%
321					Mean Detects	141709				SD Detects		444846
322					Median Detects	957				CV Detects		3.139
323					Skewness Detects	3.586				Kurtosis Detects		12.9
324					Mean of Logged Detects	6.991				SD of Logged Detects		4.418
325												
326	**Normal GOF Test on Detects Only**											
327					Shapiro Wilk Test Statistic	0.354	**Shapiro Wilk GOF Test**					
328					5% Shapiro Wilk Critical Value	0.866	Detected Data Not Normal at 5% Significance Level					
329					Lilliefors Test Statistic	0.49	**Lilliefors GOF Test**					
330					5% Lilliefors Critical Value	0.246	Detected Data Not Normal at 5% Significance Level					

	A	B	C	D	E	F	G	H	I	J	K	L
331	**Detected Data Not Normal at 5% Significance Level**											
332												
333	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
334					Mean	102346				Standard Error of Mean		90457
335					SD	368719				95% KM (BCA) UCL		285243
336					95% KM (t) UCL	259705				95% KM (Percentile Bootstrap) UCL		279541
337					95% KM (z) UCL	251134				95% KM Bootstrap t UCL		2210439
338					90% KM Chebyshev UCL	373716				95% KM Chebyshev UCL		496637
339					97.5% KM Chebyshev UCL	667248				99% KM Chebyshev UCL		1002378
340												
341	**Gamma GOF Tests on Detected Observations Only**											
342					A-D Test Statistic	0.853	**Anderson-Darling GOF Test**					
343					5% A-D Critical Value	0.913	Detected data appear Gamma Distributed at 5% Significance Level					
344					K-S Test Statistic	0.223	**Kolmogrov-Smirnoff GOF**					
345					5% K-S Critical Value	0.265	Detected data appear Gamma Distributed at 5% Significance Level					
346	**Detected data appear Gamma Distributed at 5% Significance Level**											
347												
348	**Gamma Statistics on Detected Data Only**											
349					k hat (MLE)	0.157				k star (bias corrected MLE)		0.172
350					Theta hat (MLE)	903802				Theta star (bias corrected MLE)		824410
351					nu hat (MLE)	4.077				nu star (bias corrected)		4.469
352					MLE Mean (bias corrected)	141709				MLE Sd (bias corrected)		341799
353												
354	**Gamma Kaplan-Meier (KM) Statistics**											
355					k hat (KM)	0.077				nu hat (KM)		2.774
356					Approximate Chi Square Value (2.77, α)	0.309				Adjusted Chi Square Value (2.77, β)		0.25
357					95% Gamma Approximate KM-UCL (use when n>=50)	919729				95% Gamma Adjusted KM-UCL (use when n<50)		1134659
358	Gamma (KM) may not be used when k hat (KM) is < 0.1											
359												
360	**Gamma ROS Statistics using Imputed Non-Detects**											
361	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
362	GROS may not be used when kstar of detected data is small such as < 0.1											
363	For such situations, GROS method tends to yield inflated values of UCLs and BTVs											
364	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
365					Minimum	0.01				Mean		102345
366					Maximum	1620000				Median		37.45
367					SD	379409				CV		3.707
368					k hat (MLE)	0.104				k star (bias corrected MLE)		0.124
369					Theta hat (MLE)	983643				Theta star (bias corrected MLE)		827080
370					nu hat (MLE)	3.746				nu star (bias corrected)		4.455
371					MLE Mean (bias corrected)	102345				MLE Sd (bias corrected)		290943
372										Adjusted Level of Significance (β)		0.0357
373					Approximate Chi Square Value (4.45, α)	0.909				Adjusted Chi Square Value (4.45, β)		0.769
374					95% Gamma Approximate UCL (use when n>=50)	501482				95% Gamma Adjusted UCL (use when n<50)		592690
375												
376	**Lognormal GOF Test on Detected Observations Only**											
377					Shapiro Wilk Test Statistic	0.904	**Shapiro Wilk GOF Test**					
378					5% Shapiro Wilk Critical Value	0.866	Detected Data appear Lognormal at 5% Significance Level					
379					Lilliefors Test Statistic	0.226	**Lilliefors GOF Test**					
380					5% Lilliefors Critical Value	0.246	Detected Data appear Lognormal at 5% Significance Level					
381	**Detected Data appear Lognormal at 5% Significance Level**											
382												
383	**Lognormal ROS Statistics Using Imputed Non-Detects**											
384					Mean in Original Scale	102345				Mean in Log Scale		4.731
385					SD in Original Scale	379409				SD in Log Scale		5.277

	A	B	C	D	E	F	G	H	I	J	K	L
386					95% t UCL (assumes normality of ROS data)	257914				95% Percentile Bootstrap UCL		278511
387					95% BCA Bootstrap UCL	375303				95% Bootstrap t UCL		2194101
388					95% H-UCL (Log ROS)	9.604E+13						
389												
390					UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed							
391					KM Mean (logged)	5.281				95% H-UCL (KM -Log)		1.408E+11
392					KM SD (logged)	4.541				95% Critical H Value (KM-Log)		9.15
393					KM Standard Error of Mean (logged)	1.114						
394												
395					DL/2 Statistics							
396					DL/2 Normal					DL/2 Log-Transformed		
397					Mean in Original Scale	102346				Mean in Log Scale		5.274
398					SD in Original Scale	379409				SD in Log Scale		4.68
399					95% t UCL (Assumes normality)	257915				95% H-Stat UCL		4.896E+11
400					DL/2 is not a recommended method, provided for comparisons and historical reasons							
401												
402					Nonparametric Distribution Free UCL Statistics							
403					Detected Data appear Gamma Distributed at 5% Significance Level							
404												
405					Suggested UCL to Use							
406					95% KM (Chebyshev) UCL	496637				95% GROS Adjusted Gamma UCL		592690
407					95% Adjusted Gamma KM-UCL	1134659						
408												
409					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
410					Recommendations are based upon data size, data distribution, and skewness.							
411					These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							
412					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
413												
414	m&p-Xylene											
415												
416					General Statistics							
417					Total Number of Observations	18				Number of Distinct Observations		18
418					Number of Detects	1				Number of Non-Detects		17
419					Number of Distinct Detects	1				Number of Distinct Non-Detects		17
420												
421					Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!							
422					It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).							
423												
424					The data set for variable m&p-Xylene was not processed!							
425												
426												
427	o-Xylene											
428												
429					General Statistics							
430					Total Number of Observations	18				Number of Distinct Observations		15
431					Number of Detects	2				Number of Non-Detects		16
432					Number of Distinct Detects	2				Number of Distinct Non-Detects		13
433					Minimum Detect	48.2				Minimum Non-Detect		1.6
434					Maximum Detect	79.6				Maximum Non-Detect		2340
435					Variance Detects	493				Percent Non-Detects		88.89%
436					Mean Detects	63.9				SD Detects		22.2
437					Median Detects	63.9				CV Detects		0.347
438					Skewness Detects	N/A				Kurtosis Detects		N/A
439					Mean of Logged Detects	4.126				SD of Logged Detects		0.355
440												

	A	B	C	D	E	F	G	H	I	J	K	L
441	Warning: Data set has only 2 Detected Values.											
442	This is not enough to compute meaningful or reliable statistics and estimates.											
443												
444												
445	Normal GOF Test on Detects Only											
446	Not Enough Data to Perform GOF Test											
447												
448	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
449					Mean	10.5			Standard Error of Mean			8.54
450					SD	22.59			95% KM (BCA) UCL			N/A
451					95% KM (t) UCL	25.36			95% KM (Percentile Bootstrap) UCL			N/A
452					95% KM (z) UCL	24.55			95% KM Bootstrap t UCL			N/A
453					90% KM Chebyshev UCL	36.12			95% KM Chebyshev UCL			47.72
454					97.5% KM Chebyshev UCL	63.83			99% KM Chebyshev UCL			95.47
455												
456	Gamma GOF Tests on Detected Observations Only											
457	Not Enough Data to Perform GOF Test											
458												
459	Gamma Statistics on Detected Data Only											
460					k hat (MLE)	16.23			k star (bias corrected MLE)			N/A
461					Theta hat (MLE)	3.938			Theta star (bias corrected MLE)			N/A
462					nu hat (MLE)	64.9			nu star (bias corrected)			N/A
463					MLE Mean (bias corrected)	N/A			MLE Sd (bias corrected)			N/A
464												
465	Gamma Kaplan-Meier (KM) Statistics											
466					k hat (KM)	0.216			nu hat (KM)			7.775
467									Adjusted Level of Significance (β)			0.0357
468					Approximate Chi Square Value (7.78, α)	2.606			Adjusted Chi Square Value (7.78, β)			2.327
469					95% Gamma Approximate KM-UCL (use when n>=50)	31.33			95% Gamma Adjusted KM-UCL (use when n<50)			35.09
470												
471	Lognormal GOF Test on Detected Observations Only											
472	Not Enough Data to Perform GOF Test											
473												
474	Lognormal ROS Statistics Using Imputed Non-Detects											
475					Mean in Original Scale	13.07			Mean in Log Scale			2.104
476					SD in Original Scale	19.36			SD in Log Scale			0.81
477					95% t UCL (assumes normality of ROS data)	21.01			95% Percentile Bootstrap UCL			21.06
478					95% BCA Bootstrap UCL	25.12			95% Bootstrap t UCL			74.92
479					95% H-UCL (Log ROS)	18.16						
480												
481	DL/2 Statistics											
482				DL/2 Normal					DL/2 Log-Transformed			
483					Mean in Original Scale	89.2			Mean in Log Scale			2.05
484					SD in Original Scale	272.6			SD in Log Scale			2.116
485					95% t UCL (Assumes normality)	201			95% H-Stat UCL			744
486	DL/2 is not a recommended method, provided for comparisons and historical reasons											
487												
488	Nonparametric Distribution Free UCL Statistics											
489	Data do not follow a Discernible Distribution at 5% Significance Level											
490												
491	Suggested UCL to Use											
492					95% KM (t) UCL	25.36			95% KM (% Bootstrap) UCL			N/A
493	Warning: One or more Recommended UCL(s) not available!											
494												
495	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											

	A	B	C	D	E	F	G	H	I	J	K	L
496	Recommendations are based upon data size, data distribution, and skewness.											
497	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
498	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
499												

Appendix F-2 – ProUCL Output Sheets for Shallow Groundwater Sample Data

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Data Sets with Non-Detects											
2												
3	User Selected Options											
4	Date/Time of Computation			8/8/2014 1:54:25 PM								
5	From File			Wix Groundwater.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	Acetone											
11												
12	General Statistics											
13	Total Number of Observations					15	Number of Distinct Observations					5
14	Number of Detects					3	Number of Non-Detects					12
15	Number of Distinct Detects					3	Number of Distinct Non-Detects					2
16	Minimum Detect					40.7	Minimum Non-Detect					25
17	Maximum Detect					9150	Maximum Non-Detect					12500
18	Variance Detects					27637331	Percent Non-Detects					80%
19	Mean Detects					3080	SD Detects					5257
20	Median Detects					48.1	CV Detects					1.707
21	Skewness Detects					1.732	Kurtosis Detects					N/A
22	Mean of Logged Detects					5.567	SD of Logged Detects					3.079
23												
24	Warning: Data set has only 3 Detected Values.											
25	This is not enough to compute meaningful or reliable statistics and estimates.											
26												
27												
28	Normal GOF Test on Detects Only											
29	Shapiro Wilk Test Statistic					0.751	Shapiro Wilk GOF Test					
30	5% Shapiro Wilk Critical Value					0.767	Detected Data Not Normal at 5% Significance Level					
31	Lilliefors Test Statistic					0.385	Lilliefors GOF Test					
32	5% Lilliefors Critical Value					0.512	Detected Data appear Normal at 5% Significance Level					
33	Detected Data appear Approximate Normal at 5% Significance Level											
34												
35	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
36	Mean					679.6	Standard Error of Mean					769
37	SD					2349	95% KM (BCA) UCL					N/A
38	95% KM (t) UCL					2034	95% KM (Percentile Bootstrap) UCL					N/A
39	95% KM (z) UCL					1944	95% KM Bootstrap t UCL					N/A
40	90% KM Chebyshev UCL					2987	95% KM Chebyshev UCL					4031
41	97.5% KM Chebyshev UCL					5482	99% KM Chebyshev UCL					8331
42												
43	Gamma GOF Tests on Detected Observations Only											
44	Not Enough Data to Perform GOF Test											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					0.282	k star (bias corrected MLE)					N/A
48	Theta hat (MLE)					10903	Theta star (bias corrected MLE)					N/A
49	nu hat (MLE)					1.695	nu star (bias corrected)					N/A
50	MLE Mean (bias corrected)					N/A	MLE Sd (bias corrected)					N/A
51												
52	Gamma Kaplan-Meier (KM) Statistics											

	A	B	C	D	E	F	G	H	I	J	K	L
53					k hat (KM)	0.0837					nu hat (KM)	2.51
54											Adjusted Level of Significance (β)	0.0324
55					Approximate Chi Square Value (2.51, α)	0.243					Adjusted Chi Square Value (2.51, β)	0.187
56					95% Gamma Approximate KM-UCL (use when n>=50)	7007					95% Gamma Adjusted KM-UCL (use when n<50)	9124
57					Gamma (KM) may not be used when k hat (KM) is < 0.1							
58												
59					**Lognormal GOF Test on Detected Observations Only**							
60					Shapiro Wilk Test Statistic	0.773			**Shapiro Wilk GOF Test**			
61					5% Shapiro Wilk Critical Value	0.767			Detected Data appear Lognormal at 5% Significance Level			
62					Lilliefors Test Statistic	0.376			**Lilliefors GOF Test**			
63					5% Lilliefors Critical Value	0.512			Detected Data appear Lognormal at 5% Significance Level			
64					**Detected Data appear Lognormal at 5% Significance Level**							
65												
66					**Lognormal ROS Statistics Using Imputed Non-Detects**							
67					Mean in Original Scale	616			Mean in Log Scale			-6.061
68					SD in Original Scale	2361			SD in Log Scale			7.988
69					95% t UCL (assumes normality of ROS data)	1690			95% Percentile Bootstrap UCL			1833
70					95% BCA Bootstrap UCL	2449			95% Bootstrap t UCL			138602
71					95% H-UCL (Log ROS)	9.371E+26						
72												
73					**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**							
74					KM Mean (logged)	3.722			95% H-UCL (KM -Log)			561.3
75					KM SD (logged)	1.511			95% Critical H Value (KM-Log)			3.632
76					KM Standard Error of Mean (logged)	0.495						
77												
78					**DL/2 Statistics**							
79					**DL/2 Normal**				**DL/2 Log-Transformed**			
80					Mean in Original Scale	1042			Mean in Log Scale			3.548
81					SD in Original Scale	2758			SD in Log Scale			2.23
82					95% t UCL (Assumes normality)	2296			95% H-Stat UCL			8322
83					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
84												
85					**Nonparametric Distribution Free UCL Statistics**							
86					**Detected Data appear Approximate Normal Distributed at 5% Significance Level**							
87												
88					**Suggested UCL to Use**							
89					95% KM (t) UCL	2034			95% KM (Percentile Bootstrap) UCL			N/A
90					**Warning: One or more Recommended UCL(s) not available!**							
91												
92					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
93					Recommendations are based upon data size, data distribution, and skewness.							
94					These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							
95					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
96												

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for Data Sets with Non-Detects**											
2												
3	User Selected Options											
4	Date/Time of Computation			7/24/2014 4:18:46 PM								
5	From File			Wix ProUCL_a.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	**Benzene**											
11												
12	**General Statistics**											
13	Total Number of Observations					15	Number of Distinct Observations					7
14	Number of Detects					5	Number of Non-Detects					10
15	Number of Distinct Detects					5	Number of Distinct Non-Detects					2
16	Minimum Detect					0.44	Minimum Non-Detect					1
17	Maximum Detect					38.6	Maximum Non-Detect					500
18	Variance Detects					250.3	Percent Non-Detects					66.67%
19	Mean Detects					15.15	SD Detects					15.82
20	Median Detects					10	CV Detects					1.044
21	Skewness Detects					0.892	Kurtosis Detects					-0.533
22	Mean of Logged Detects					1.896	SD of Logged Detects					1.782
23												
24	**Normal GOF Test on Detects Only**											
25	Shapiro Wilk Test Statistic					0.912	**Shapiro Wilk GOF Test**					
26	5% Shapiro Wilk Critical Value					0.762	Detected Data appear Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.228	**Lilliefors GOF Test**					
28	5% Lilliefors Critical Value					0.396	Detected Data appear Normal at 5% Significance Level					
29	**Detected Data appear Normal at 5% Significance Level**											
30												
31	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
32	Mean					6.097	Standard Error of Mean					3.511
33	SD					11.32	95% KM (BCA) UCL					12.98
34	95% KM (t) UCL					12.28	95% KM (Percentile Bootstrap) UCL					11.98
35	95% KM (z) UCL					11.87	95% KM Bootstrap t UCL					17.6
36	90% KM Chebyshev UCL					16.63	95% KM Chebyshev UCL					21.4
37	97.5% KM Chebyshev UCL					28.02	99% KM Chebyshev UCL					41.03
38												
39	**Gamma GOF Tests on Detected Observations Only**											
40	A-D Test Statistic					0.194	**Anderson-Darling GOF Test**					
41	5% A-D Critical Value					0.699	Detected data appear Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.183	**Kolmogrov-Smirnoff GOF**					
43	5% K-S Critical Value					0.367	Detected data appear Gamma Distributed at 5% Significance Level					
44	**Detected data appear Gamma Distributed at 5% Significance Level**											
45												
46	**Gamma Statistics on Detected Data Only**											
47	k hat (MLE)					0.731	k star (bias corrected MLE)					0.426
48	Theta hat (MLE)					20.72	Theta star (bias corrected MLE)					35.57
49	nu hat (MLE)					7.312	nu star (bias corrected)					4.258
50	MLE Mean (bias corrected)					15.15	MLE Sd (bias corrected)					23.21
51												
52	**Gamma Kaplan-Meier (KM) Statistics**											
53	k hat (KM)					0.29	nu hat (KM)					8.697
54	Approximate Chi Square Value (8.70, α)					3.145	Adjusted Chi Square Value (8.70, β)					2.748
55	95% Gamma Approximate KM-UCL (use when n>=50)					16.86	95% Gamma Adjusted KM-UCL (use when n<50)					19.3
56												
57	**Gamma ROS Statistics using Imputed Non-Detects**											
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
59	GROS may not be used when kstar of detected data is small such as < 0.1											

	A	B	C	D	E	F	G	H	I	J	K	L
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs											
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
62					Minimum	0.01				Mean		5.545
63					Maximum	38.6				Median		0.01
64					SD	11.07				CV		1.997
65					k hat (MLE)	0.216				k star (bias corrected MLE)		0.217
66					Theta hat (MLE)	25.7				Theta star (bias corrected MLE)		25.55
67					nu hat (MLE)	6.473				nu star (bias corrected)		6.512
68					MLE Mean (bias corrected)	5.545				MLE Sd (bias corrected)		11.9
69										Adjusted Level of Significance (β)		0.0324
70					Approximate Chi Square Value (6.51, α)	1.907				Adjusted Chi Square Value (6.51, β)		1.616
71					95% Gamma Approximate UCL (use when n>=50)	18.94				95% Gamma Adjusted UCL (use when n<50)		22.34
72												
73	**Lognormal GOF Test on Detected Observations Only**											
74					Shapiro Wilk Test Statistic	0.935	**Shapiro Wilk GOF Test**					
75					5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level					
76					Lilliefors Test Statistic	0.19	**Lilliefors GOF Test**					
77					5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level					
78	**Detected Data appear Lognormal at 5% Significance Level**											
79												
80	**Lognormal ROS Statistics Using Imputed Non-Detects**											
81					Mean in Original Scale	5.619				Mean in Log Scale		0.0572
82					SD in Original Scale	10.99				SD in Log Scale		1.998
83					95% t UCL (assumes normality of ROS data)	10.62				95% Percentile Bootstrap UCL		10.87
84					95% BCA Bootstrap UCL	12.78				95% Bootstrap t UCL		23.95
85					95% H-UCL (Log ROS)	88.79						
86												
87	**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**											
88					KM Mean (logged)	0.224				95% H-UCL (KM -Log)		27.22
89					KM SD (logged)	1.651				95% Critical H Value (KM-Log)		3.892
90					KM Standard Error of Mean (logged)	0.512						
91												
92	**DL/2 Statistics**											
93		**DL/2 Normal**					**DL/2 Log-Transformed**					
94					Mean in Original Scale	38.65				Mean in Log Scale		0.999
95					SD in Original Scale	86.5				SD in Log Scale		2.399
96					95% t UCL (Assumes normality)	77.99				95% H-Stat UCL		1490
97	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
98												
99	**Nonparametric Distribution Free UCL Statistics**											
100	**Detected Data appear Normal Distributed at 5% Significance Level**											
101												
102	**Suggested UCL to Use**											
103					95% KM (t) UCL	12.28				95% KM (Percentile Bootstrap) UCL		11.98
104												
105	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
106	Recommendations are based upon data size, data distribution, and skewness.											
107	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
108	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
109												
110	**cis-1,2-Dichloroethene**											
111												
112	**General Statistics**											
113					Total Number of Observations	15				Number of Distinct Observations		7
114					Number of Detects	5				Number of Non-Detects		10
115					Number of Distinct Detects	5				Number of Distinct Non-Detects		2
116					Minimum Detect	0.97				Minimum Non-Detect		1
117					Maximum Detect	1930				Maximum Non-Detect		500
118					Variance Detects	740592				Percent Non-Detects		66.67%

	A	B	C	D	E	F	G	H	I	J	K	L
119					Mean Detects	390.6					SD Detects	860.6
120					Median Detects	1.8					CV Detects	2.203
121					Skewness Detects	2.236					Kurtosis Detects	4.998
122					Mean of Logged Detects	2.28					SD of Logged Detects	3.176
123												
124					**Normal GOF Test on Detects Only**							
125					Shapiro Wilk Test Statistic	0.558	**Shapiro Wilk GOF Test**					
126					5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level					
127					Lilliefors Test Statistic	0.467	**Lilliefors GOF Test**					
128					5% Lilliefors Critical Value	0.396	Detected Data Not Normal at 5% Significance Level					
129					**Detected Data Not Normal at 5% Significance Level**							
130												
131					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
132					Mean	131.1					Standard Error of Mean	138.8
133					SD	480.8					95% KM (BCA) UCL	388.1
134					95% KM (t) UCL	375.5					95% KM (Percentile Bootstrap) UCL	386.9
135					95% KM (z) UCL	359.4					95% KM Bootstrap t UCL	183578
136					90% KM Chebyshev UCL	547.5					95% KM Chebyshev UCL	736.1
137					97.5% KM Chebyshev UCL	997.9					99% KM Chebyshev UCL	1512
138												
139					**Gamma GOF Tests on Detected Observations Only**							
140					A-D Test Statistic	0.835	**Anderson-Darling GOF Test**					
141					5% A-D Critical Value	0.776	Detected Data Not Gamma Distributed at 5% Significance Level					
142					K-S Test Statistic	0.369	**Kolmogrov-Smirnoff GOF**					
143					5% K-S Critical Value	0.388	Detected data appear Gamma Distributed at 5% Significance Level					
144					**Detected data follow Appr. Gamma Distribution at 5% Significance Level**							
145												
146					**Gamma Statistics on Detected Data Only**							
147					k hat (MLE)	0.2	k star (bias corrected MLE)					0.213
148					Theta hat (MLE)	1957	Theta star (bias corrected MLE)					1832
149					nu hat (MLE)	1.996	nu star (bias corrected)					2.132
150					MLE Mean (bias corrected)	390.6	MLE Sd (bias corrected)					846
151												
152					**Gamma Kaplan-Meier (KM) Statistics**							
153					k hat (KM)	0.0743	nu hat (KM)					2.229
154					Approximate Chi Square Value (2.23, α)	0.186	Adjusted Chi Square Value (2.23, β)					0.147
155					95% Gamma Approximate KM-UCL (use when n>=50)	1568	95% Gamma Adjusted KM-UCL (use when n<50)					1990
156					Gamma (KM) may not be used when k hat (KM) is < 0.1							
157												
158					**Gamma ROS Statistics using Imputed Non-Detects**							
159					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs							
160					GROS may not be used when kstar of detected data is small such as < 0.1							
161					For such situations, GROS method tends to yield inflated values of UCLs and BTVs							
162					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates							
163					Minimum	0.01	Mean					130.2
164					Maximum	1930	Median					0.01
165					SD	497.9	CV					3.824
166					k hat (MLE)	0.112	k star (bias corrected MLE)					0.134
167					Theta hat (MLE)	1167	Theta star (bias corrected MLE)					974.1
168					nu hat (MLE)	3.346	nu star (bias corrected)					4.01
169					MLE Mean (bias corrected)	130.2	MLE Sd (bias corrected)					356.1
170							Adjusted Level of Significance (β)					0.0324
171					Approximate Chi Square Value (4.01, α)	0.726	Adjusted Chi Square Value (4.01, β)					0.576
172					95% Gamma Approximate UCL (use when n>=50)	719.5	95% Gamma Adjusted UCL (use when n<50)					906.6
173												
174					**Lognormal GOF Test on Detected Observations Only**							
175					Shapiro Wilk Test Statistic	0.799	**Shapiro Wilk GOF Test**					
176					5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level					
177					Lilliefors Test Statistic	0.303	**Lilliefors GOF Test**					

	A	B	C	D	E	F	G	H	I	J	K	L
178					5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level					
179	**Detected Data appear Lognormal at 5% Significance Level**											
180												
181	**Lognormal ROS Statistics Using Imputed Non-Detects**											
182					Mean in Original Scale	130.6				Mean in Log Scale		-0.352
183					SD in Original Scale	497.8				SD in Log Scale		2.964
184				95% t UCL (assumes normality of ROS data)		357				95% Percentile Bootstrap UCL		387.6
185					95% BCA Bootstrap UCL	516.4				95% Bootstrap t UCL		93797
186					95% H-UCL (Log ROS)	9760						
187												
188	**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**											
189					KM Mean (logged)	0.784				95% H-UCL (KM -Log)		168.5
190					KM SD (logged)	1.977				95% Critical H Value (KM-Log)		4.52
191					KM Standard Error of Mean (logged)	0.578						
192												
193	**DL/2 Statistics**											
194				**DL/2 Normal**			**DL/2 Log-Transformed**					
195					Mean in Original Scale	163.8				Mean in Log Scale		1.126
196					SD in Original Scale	496.3				SD in Log Scale		2.83
197					95% t UCL (Assumes normality)	389.5				95% H-Stat UCL		18719
198	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
199												
200	**Nonparametric Distribution Free UCL Statistics**											
201	**Detected Data appear Approximate Gamma Distributed at 5% Significance Level**											
202												
203	**Suggested UCL to Use**											
204					95% KM (t) UCL	375.5				95% GROS Adjusted Gamma UCL		906.6
205					95% Adjusted Gamma KM-UCL	1990						
206	**Warning: Recommended UCL exceeds the maximum observation**											
207												
208	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
209	Recommendations are based upon data size, data distribution, and skewness.											
210	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
211	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
212												
213	**Ethylbenzene**											
214												
215	**General Statistics**											
216					Total Number of Observations	15				Number of Distinct Observations		6
217					Number of Detects	4				Number of Non-Detects		11
218					Number of Distinct Detects	4				Number of Distinct Non-Detects		2
219					Minimum Detect	8				Minimum Non-Detect		1
220					Maximum Detect	78.2				Maximum Non-Detect		500
221					Variance Detects	1126				Percent Non-Detects		73.33%
222					Mean Detects	28.28				SD Detects		33.55
223					Median Detects	13.45				CV Detects		1.187
224					Skewness Detects	1.907				Kurtosis Detects		3.657
225					Mean of Logged Detects	2.884				SD of Logged Detects		1.041
226												
227	**Normal GOF Test on Detects Only**											
228					Shapiro Wilk Test Statistic	0.729	**Shapiro Wilk GOF Test**					
229					5% Shapiro Wilk Critical Value	0.748	Detected Data Not Normal at 5% Significance Level					
230					Lilliefors Test Statistic	0.375	**Lilliefors GOF Test**					
231					5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level					
232	**Detected Data appear Approximate Normal at 5% Significance Level**											
233												
234	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
235					Mean	9.392				Standard Error of Mean		6.55
236					SD	20.45				95% KM (BCA) UCL		N/A

	A	B	C	D	E	F	G	H	I	J	K	L
237					95% KM (t) UCL	20.93			95% KM (Percentile Bootstrap) UCL			N/A
238					95% KM (z) UCL	20.17				95% KM Bootstrap t UCL		N/A
239					90% KM Chebyshev UCL	29.04				95% KM Chebyshev UCL		37.94
240					97.5% KM Chebyshev UCL	50.3				99% KM Chebyshev UCL		74.56
241												
242					**Gamma GOF Tests on Detected Observations Only**							
243					A-D Test Statistic	0.525	**Anderson-Darling GOF Test**					
244					5% A-D Critical Value	0.665	Detected data appear Gamma Distributed at 5% Significance Level					
245					K-S Test Statistic	0.319	**Kolmogrov-Smirnoff GOF**					
246					5% K-S Critical Value	0.401	Detected data appear Gamma Distributed at 5% Significance Level					
247					**Detected data appear Gamma Distributed at 5% Significance Level**							
248												
249					**Gamma Statistics on Detected Data Only**							
250					k hat (MLE)	1.232			k star (bias corrected MLE)			0.475
251					Theta hat (MLE)	22.95			Theta star (bias corrected MLE)			59.57
252					nu hat (MLE)	9.857			nu star (bias corrected)			3.798
253					MLE Mean (bias corrected)	28.28			MLE Sd (bias corrected)			41.04
254												
255					**Gamma Kaplan-Meier (KM) Statistics**							
256					k hat (KM)	0.211			nu hat (KM)			6.327
257					Approximate Chi Square Value (6.33, α)	1.809			Adjusted Chi Square Value (6.33, β)			1.528
258					95% Gamma Approximate KM-UCL (use when n>=50)	32.85			95% Gamma Adjusted KM-UCL (use when n<50)			38.88
259												
260					**Gamma ROS Statistics using Imputed Non-Detects**							
261					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs							
262					GROS may not be used when kstar of detected data is small such as < 0.1							
263					For such situations, GROS method tends to yield inflated values of UCLs and BTVs							
264					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates							
265					Minimum	0.01			Mean			7.547
266					Maximum	78.2			Median			0.01
267					SD	20.22			CV			2.678
268					k hat (MLE)	0.164			k star (bias corrected MLE)			0.176
269					Theta hat (MLE)	46.05			Theta star (bias corrected MLE)			42.99
270					nu hat (MLE)	4.916			nu star (bias corrected)			5.266
271					MLE Mean (bias corrected)	7.547			MLE Sd (bias corrected)			18.01
272									Adjusted Level of Significance (β)			0.0324
273					Approximate Chi Square Value (5.27, α)	1.277			Adjusted Chi Square Value (5.27, β)			1.054
274					95% Gamma Approximate UCL (use when n>=50)	31.12			95% Gamma Adjusted UCL (use when n<50)			N/A
275												
276					**Lognormal GOF Test on Detected Observations Only**							
277					Shapiro Wilk Test Statistic	0.861	**Shapiro Wilk GOF Test**					
278					5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level					
279					Lilliefors Test Statistic	0.256	**Lilliefors GOF Test**					
280					5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level					
281					**Detected Data appear Lognormal at 5% Significance Level**							
282												
283					**Lognormal ROS Statistics Using Imputed Non-Detects**							
284					Mean in Original Scale	8.144			Mean in Log Scale			-0.0304
285					SD in Original Scale	20			SD in Log Scale			2.327
286					95% t UCL (assumes normality of ROS data)	17.24			95% Percentile Bootstrap UCL			17.75
287					95% BCA Bootstrap UCL	24.27			95% Bootstrap t UCL			51.89
288					95% H-UCL (Log ROS)	371.9						
289												
290					**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**							
291					KM Mean (logged)	0.887			95% H-UCL (KM -Log)			24.95
292					KM SD (logged)	1.422			95% Critical H Value (KM-Log)			3.469
293					KM Standard Error of Mean (logged)	0.455						
294												
295					**DL/2 Statistics**							

	A	B	C	D	E	F	G	H	I	J	K	L
296	DL/2 Normal						DL/2 Log-Transformed					
297					Mean in Original Scale	41.17					Mean in Log Scale	1.089
298					SD in Original Scale	87.08					SD in Log Scale	2.45
299					95% t UCL (Assumes normality)	80.77					95% H-Stat UCL	2126
300	DL/2 is not a recommended method, provided for comparisons and historical reasons											
301												
302	Nonparametric Distribution Free UCL Statistics											
303	Detected Data appear Approximate Normal Distributed at 5% Significance Level											
304												
305	Suggested UCL to Use											
306					95% KM (t) UCL	20.93					95% KM (Percentile Bootstrap) UCL	N/A
307	Warning: One or more Recommended UCL(s) not available!											
308												
309	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
310	Recommendations are based upon data size, data distribution, and skewness.											
311	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
312	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
313												
314	Toluene											
315												
316	General Statistics											
317					Total Number of Observations	15					Number of Distinct Observations	15
318					Number of Detects	14					Number of Non-Detects	1
319					Number of Distinct Detects	14					Number of Distinct Non-Detects	1
320					Minimum Detect	0.47					Minimum Non-Detect	1
321					Maximum Detect	461000					Maximum Non-Detect	1
322					Variance Detects	2.356E+10					Percent Non-Detects	6.667%
323					Mean Detects	81258					SD Detects	153480
324					Median Detects	4.1					CV Detects	1.889
325					Skewness Detects	2.09					Kurtosis Detects	3.248
326					Mean of Logged Detects	5.267					SD of Logged Detects	5.809
327												
328	Normal GOF Test on Detects Only											
329					Shapiro Wilk Test Statistic	0.594	Shapiro Wilk GOF Test					
330					5% Shapiro Wilk Critical Value	0.874	Detected Data Not Normal at 5% Significance Level					
331					Lilliefors Test Statistic	0.298	Lilliefors GOF Test					
332					5% Lilliefors Critical Value	0.237	Detected Data Not Normal at 5% Significance Level					
333	Detected Data Not Normal at 5% Significance Level											
334												
335	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
336					Mean	75841					Standard Error of Mean	38668
337					SD	144312					95% KM (BCA) UCL	148261
338					95% KM (t) UCL	143947					95% KM (Percentile Bootstrap) UCL	139262
339					95% KM (z) UCL	139444					95% KM Bootstrap t UCL	322480
340					90% KM Chebyshev UCL	191845					95% KM Chebyshev UCL	244391
341					97.5% KM Chebyshev UCL	317322					99% KM Chebyshev UCL	460582
342												
343	Gamma GOF Tests on Detected Observations Only											
344					A-D Test Statistic	1.401	Anderson-Darling GOF Test					
345					5% A-D Critical Value	0.942	Detected Data Not Gamma Distributed at 5% Significance Level					
346					K-S Test Statistic	0.342	Kolmogrov-Smirnoff GOF					
347					5% K-S Critical Value	0.259	Detected Data Not Gamma Distributed at 5% Significance Level					
348	Detected Data Not Gamma Distributed at 5% Significance Level											
349												
350	Gamma Statistics on Detected Data Only											
351					k hat (MLE)	0.13					k star (bias corrected MLE)	0.15
352					Theta hat (MLE)	625487					Theta star (bias corrected MLE)	542834
353					nu hat (MLE)	3.638					nu star (bias corrected)	4.191
354					MLE Mean (bias corrected)	81258					MLE Sd (bias corrected)	210023

	A	B	C	D	E	F	G	H	I	J	K	L
355												
356						**Gamma Kaplan-Meier (KM) Statistics**						
357					k hat (KM)	0.276					nu hat (KM)	8.286
358					Approximate Chi Square Value (8.29, α)	2.902					Adjusted Chi Square Value (8.29, β)	2.523
359					95% Gamma Approximate KM-UCL (use when n>=50)	216574					95% Gamma Adjusted KM-UCL (use when n<50)	249047
360												
361						**Gamma ROS Statistics using Imputed Non-Detects**						
362						GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs						
363						GROS may not be used when kstar of detected data is small such as < 0.1						
364						For such situations, GROS method tends to yield inflated values of UCLs and BTVs						
365						For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates						
366					Minimum	0.47					Mean	76454
367					Maximum	461000					Median	4.7
368					SD	149063					CV	1.95
369					k hat (MLE)	0.136					k star (bias corrected MLE)	0.153
370					Theta hat (MLE)	561209					Theta star (bias corrected MLE)	498302
371					nu hat (MLE)	4.087					nu star (bias corrected)	4.603
372					MLE Mean (bias corrected)	76454					MLE Sd (bias corrected)	195185
373											Adjusted Level of Significance (β)	0.0324
374					Approximate Chi Square Value (4.60, α)	0.973					Adjusted Chi Square Value (4.60, β)	0.788
375					95% Gamma Approximate UCL (use when n>=50)	361549					95% Gamma Adjusted UCL (use when n<50)	446464
376												
377						**Lognormal GOF Test on Detected Observations Only**						
378					Shapiro Wilk Test Statistic	0.769			**Shapiro Wilk GOF Test**			
379					5% Shapiro Wilk Critical Value	0.874			Detected Data Not Lognormal at 5% Significance Level			
380					Lilliefors Test Statistic	0.31			**Lilliefors GOF Test**			
381					5% Lilliefors Critical Value	0.237			Detected Data Not Lognormal at 5% Significance Level			
382						**Detected Data Not Lognormal at 5% Significance Level**						
383												
384						**Lognormal ROS Statistics Using Imputed Non-Detects**						
385					Mean in Original Scale	75841					Mean in Log Scale	4.8
386					SD in Original Scale	149378					SD in Log Scale	5.883
387					95% t UCL (assumes normality of ROS data)	143773					95% Percentile Bootstrap UCL	138647
388					95% BCA Bootstrap UCL	168541					95% Bootstrap t UCL	314256
389					95% H-UCL (Log ROS)	1.503E+18						
390												
391						**DL/2 Statistics**						
392					**DL/2 Normal**				**DL/2 Log-Transformed**			
393					Mean in Original Scale	75841					Mean in Log Scale	4.87
394					SD in Original Scale	149378					SD in Log Scale	5.806
395					95% t UCL (Assumes normality)	143773					95% H-Stat UCL	6.179E+17
396						**DL/2 is not a recommended method, provided for comparisons and historical reasons**						
397												
398						**Nonparametric Distribution Free UCL Statistics**						
399						**Data do not follow a Discernible Distribution at 5% Significance Level**						
400												
401						**Suggested UCL to Use**						
402					99% KM (Chebyshev) UCL	460582						
403												
404						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.						
405						Recommendations are based upon data size, data distribution, and skewness.						
406						These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).						
407						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.						
408												
409	**Trichloroethene**											
410												
411						**General Statistics**						
412					Total Number of Observations	15					Number of Distinct Observations	5
413					Number of Detects	2					Number of Non-Detects	13

	A	B	C	D	E	F	G	H	I	J	K	L
414					Number of Distinct Detects	2					Number of Distinct Non-Detects	3
415					Minimum Detect	0.59					Minimum Non-Detect	1
416					Maximum Detect	0.69					Maximum Non-Detect	500
417					Variance Detects	0.005					Percent Non-Detects	86.67%
418					Mean Detects	0.64					SD Detects	0.0707
419					Median Detects	0.64					CV Detects	0.11
420					Skewness Detects	N/A					Kurtosis Detects	N/A
421					Mean of Logged Detects	-0.449					SD of Logged Detects	0.111
422												
423					**Warning: Data set has only 2 Detected Values.**							
424					**This is not enough to compute meaningful or reliable statistics and estimates.**							
425												
426												
427					**Normal GOF Test on Detects Only**							
428					**Not Enough Data to Perform GOF Test**							
429												
430					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
431					Mean	0.64					Standard Error of Mean	0.05
432					SD	0.05					95% KM (BCA) UCL	N/A
433					95% KM (t) UCL	0.728					95% KM (Percentile Bootstrap) UCL	N/A
434					95% KM (z) UCL	0.722					95% KM Bootstrap t UCL	N/A
435					90% KM Chebyshev UCL	0.79					95% KM Chebyshev UCL	0.858
436					97.5% KM Chebyshev UCL	0.952					99% KM Chebyshev UCL	1.137
437												
438					**Gamma GOF Tests on Detected Observations Only**							
439					**Not Enough Data to Perform GOF Test**							
440												
441					**Gamma Statistics on Detected Data Only**							
442					k hat (MLE)	163.5					k star (bias corrected MLE)	N/A
443					Theta hat (MLE)	0.00391					Theta star (bias corrected MLE)	N/A
444					nu hat (MLE)	654					nu star (bias corrected)	N/A
445					MLE Mean (bias corrected)	N/A					MLE Sd (bias corrected)	N/A
446												
447					**Gamma Kaplan-Meier (KM) Statistics**							
448					k hat (KM)	163.8					nu hat (KM)	4915
449											Adjusted Level of Significance (β)	0.0324
450					Approximate Chi Square Value (N/A, α)	4753					Adjusted Chi Square Value (N/A, β)	4734
451					95% Gamma Approximate KM-UCL (use when n>=50)	0.662					95% Gamma Adjusted KM-UCL (use when n<50)	0.665
452												
453					**Lognormal GOF Test on Detected Observations Only**							
454					**Not Enough Data to Perform GOF Test**							
455												
456					**Lognormal ROS Statistics Using Imputed Non-Detects**							
457					Mean in Original Scale	0.643					Mean in Log Scale	-0.449
458					SD in Original Scale	0.0825					SD in Log Scale	0.128
459					95% t UCL (assumes normality of ROS data)	0.68					95% Percentile Bootstrap UCL	0.678
460					95% BCA Bootstrap UCL	0.679					95% Bootstrap t UCL	0.68
461					95% H-UCL (Log ROS)	0.683						
462												
463					**DL/2 Statistics**							
464					**DL/2 Normal**						**DL/2 Log-Transformed**	
465					Mean in Original Scale	33.89					Mean in Log Scale	0.26
466					SD in Original Scale	87.74					SD in Log Scale	2.166
467					95% t UCL (Assumes normality)	73.79					95% H-Stat UCL	229.3
468					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
469												
470					**Nonparametric Distribution Free UCL Statistics**							
471					**Data do not follow a Discernible Distribution at 5% Significance Level**							
472												

	A	B	C	D	E	F	G	H	I	J	K	L
473	**Suggested UCL to Use**											
474					95% KM (t) UCL	0.728				95% KM (% Bootstrap) UCL		N/A
475	**Warning: One or more Recommended UCL(s) not available!**											
476	**Warning: Recommended UCL exceeds the maximum observation**											
477												
478	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
479	Recommendations are based upon data size, data distribution, and skewness.											
480	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
481	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
482												
483	**Vinyl chloride**											
484												
485	**General Statistics**											
486					Total Number of Observations	15				Number of Distinct Observations		4
487					Number of Detects	1				Number of Non-Detects		14
488					Number of Distinct Detects	1				Number of Distinct Non-Detects		3
489												
490	**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!**											
491	**It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).**											
492												
493	**The data set for variable Vinyl chloride was not processed!**											
494												
495												
496	**o-Xylene**											
497												
498	**General Statistics**											
499					Total Number of Observations	15				Number of Distinct Observations		6
500					Number of Detects	4				Number of Non-Detects		11
501					Number of Distinct Detects	4				Number of Distinct Non-Detects		2
502					Minimum Detect	2				Minimum Non-Detect		1
503					Maximum Detect	32.1				Maximum Non-Detect		500
504					Variance Detects	207.8				Percent Non-Detects		73.33%
505					Mean Detects	10.7				SD Detects		14.42
506					Median Detects	4.35				CV Detects		1.347
507					Skewness Detects	1.881				Kurtosis Detects		3.551
508					Mean of Logged Detects	1.706				SD of Logged Detects		1.291
509												
510	**Normal GOF Test on Detects Only**											
511					Shapiro Wilk Test Statistic	0.735				**Shapiro Wilk GOF Test**		
512					5% Shapiro Wilk Critical Value	0.748				Detected Data Not Normal at 5% Significance Level		
513					Lilliefors Test Statistic	0.365				**Lilliefors GOF Test**		
514					5% Lilliefors Critical Value	0.443				Detected Data appear Normal at 5% Significance Level		
515	**Detected Data appear Approximate Normal at 5% Significance Level**											
516												
517	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
518					Mean	3.985				Standard Error of Mean		2.641
519					SD	8.247				95% KM (BCA) UCL		N/A
520					95% KM (t) UCL	8.636				95% KM (Percentile Bootstrap) UCL		N/A
521					95% KM (z) UCL	8.329				95% KM Bootstrap t UCL		N/A
522					90% KM Chebyshev UCL	11.91				95% KM Chebyshev UCL		15.5
523					97.5% KM Chebyshev UCL	20.48				99% KM Chebyshev UCL		30.26
524												
525	**Gamma GOF Tests on Detected Observations Only**											
526					A-D Test Statistic	0.483				**Anderson-Darling GOF Test**		
527					5% A-D Critical Value	0.668				Detected data appear Gamma Distributed at 5% Significance Level		
528					K-S Test Statistic	0.286				**Kolmogrov-Smirnoff GOF**		
529					5% K-S Critical Value	0.404				Detected data appear Gamma Distributed at 5% Significance Level		
530	**Detected data appear Gamma Distributed at 5% Significance Level**											
531												

	A	B	C	D	E	F	G	H	I	J	K	L
532	**Gamma Statistics on Detected Data Only**											
533					k hat (MLE)	0.882					k star (bias corrected MLE)	0.387
534					Theta hat (MLE)	12.13					Theta star (bias corrected MLE)	27.64
535					nu hat (MLE)	7.054					nu star (bias corrected)	3.097
536					MLE Mean (bias corrected)	10.7					MLE Sd (bias corrected)	17.2
537												
538	**Gamma Kaplan-Meier (KM) Statistics**											
539					k hat (KM)	0.233					nu hat (KM)	7.004
540					Approximate Chi Square Value (7.00, α)	2.173					Adjusted Chi Square Value (7.00, β)	1.857
541					95% Gamma Approximate KM-UCL (use when n>=50)	12.84					95% Gamma Adjusted KM-UCL (use when n<50)	15.03
542												
543	**Gamma ROS Statistics using Imputed Non-Detects**											
544	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
545	GROS may not be used when kstar of detected data is small such as < 0.1											
546	For such situations, GROS method tends to yield inflated values of UCLs and BTVs											
547	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
548					Minimum	0.01					Mean	2.861
549					Maximum	32.1					Median	0.01
550					SD	8.275					CV	2.893
551					k hat (MLE)	0.187					k star (bias corrected MLE)	0.194
552					Theta hat (MLE)	15.29					Theta star (bias corrected MLE)	14.73
553					nu hat (MLE)	5.614					nu star (bias corrected)	5.824
554					MLE Mean (bias corrected)	2.861					MLE Sd (bias corrected)	6.492
555											Adjusted Level of Significance (β)	0.0324
556					Approximate Chi Square Value (5.82, α)	1.551					Adjusted Chi Square Value (5.82, β)	1.297
557					95% Gamma Approximate UCL (use when n>=50)	10.74					95% Gamma Adjusted UCL (use when n<50)	N/A
558												
559	**Lognormal GOF Test on Detected Observations Only**											
560					Shapiro Wilk Test Statistic	0.872					**Shapiro Wilk GOF Test**	
561					5% Shapiro Wilk Critical Value	0.748					Detected Data appear Lognormal at 5% Significance Level	
562					Lilliefors Test Statistic	0.261					**Lilliefors GOF Test**	
563					5% Lilliefors Critical Value	0.443					Detected Data appear Lognormal at 5% Significance Level	
564	**Detected Data appear Lognormal at 5% Significance Level**											
565												
566	**Lognormal ROS Statistics Using Imputed Non-Detects**											
567					Mean in Original Scale	2.956					Mean in Log Scale	-1.933
568					SD in Original Scale	8.242					SD in Log Scale	2.905
569					95% t UCL (assumes normality of ROS data)	6.704					95% Percentile Bootstrap UCL	6.977
570					95% BCA Bootstrap UCL	10.16					95% Bootstrap t UCL	32.25
571					95% H-UCL (Log ROS)	1388						
572												
573	**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**											
574					KM Mean (logged)	0.525					95% H-UCL (KM -Log)	5.83
575					KM SD (logged)	1.002					95% Critical H Value (KM-Log)	2.748
576					KM Standard Error of Mean (logged)	0.321						
577												
578	**DL/2 Statistics**											
579		**DL/2 Normal**					**DL/2 Log-Transformed**					
580					Mean in Original Scale	36.49					Mean in Log Scale	0.775
581					SD in Original Scale	87.06					SD in Log Scale	2.282
582					95% t UCL (Assumes normality)	76.08					95% H-Stat UCL	666.9
583	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
584												
585	**Nonparametric Distribution Free UCL Statistics**											
586	**Detected Data appear Approximate Normal Distributed at 5% Significance Level**											
587												
588	**Suggested UCL to Use**											
589					95% KM (t) UCL	8.636					95% KM (Percentile Bootstrap) UCL	N/A
590	**Warning: One or more Recommended UCL(s) not available!**											

	A	B	C	D	E	F	G	H	I	J	K	L
591												
592	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
593	Recommendations are based upon data size, data distribution, and skewness.											
594	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
595	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
596												
597	m&p-Xylene											
598												
599	General Statistics											
600	Total Number of Observations					15	Number of Distinct Observations					6
601	Number of Detects					4	Number of Non-Detects					11
602	Number of Distinct Detects					4	Number of Distinct Non-Detects					2
603	Minimum Detect					9.3	Minimum Non-Detect					2
604	Maximum Detect					77.4	Maximum Non-Detect					1000
605	Variance Detects					1014	Percent Non-Detects					73.33%
606	Mean Detects					32.23	SD Detects					31.85
607	Median Detects					21.1	CV Detects					0.988
608	Skewness Detects					1.439	Kurtosis Detects					1.625
609	Mean of Logged Detects					3.095	SD of Logged Detects					1.003
610												
611	Normal GOF Test on Detects Only											
612	Shapiro Wilk Test Statistic					0.834	Shapiro Wilk GOF Test					
613	5% Shapiro Wilk Critical Value					0.748	Detected Data appear Normal at 5% Significance Level					
614	Lilliefors Test Statistic					0.255	Lilliefors GOF Test					
615	5% Lilliefors Critical Value					0.443	Detected Data appear Normal at 5% Significance Level					
616	Detected Data appear Normal at 5% Significance Level											
617												
618	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
619	Mean					11.3	Standard Error of Mean					6.631
620	SD					20.7	95% KM (BCA) UCL					N/A
621	95% KM (t) UCL					22.98	95% KM (Percentile Bootstrap) UCL					N/A
622	95% KM (z) UCL					22.21	95% KM Bootstrap t UCL					N/A
623	90% KM Chebyshev UCL					31.19	95% KM Chebyshev UCL					40.2
624	97.5% KM Chebyshev UCL					52.71	99% KM Chebyshev UCL					77.27
625												
626	Gamma GOF Tests on Detected Observations Only											
627	A-D Test Statistic					0.388	Anderson-Darling GOF Test					
628	5% A-D Critical Value					0.663	Detected data appear Gamma Distributed at 5% Significance Level					
629	K-S Test Statistic					0.305	Kolmogrov-Smirnoff GOF					
630	5% K-S Critical Value					0.4	Detected data appear Gamma Distributed at 5% Significance Level					
631	Detected data appear Gamma Distributed at 5% Significance Level											
632												
633	Gamma Statistics on Detected Data Only											
634	k hat (MLE)					1.468	k star (bias corrected MLE)					0.534
635	Theta hat (MLE)					21.95	Theta star (bias corrected MLE)					60.38
636	nu hat (MLE)					11.75	nu star (bias corrected)					4.27
637	MLE Mean (bias corrected)					32.23	MLE Sd (bias corrected)					44.11
638												
639	Gamma Kaplan-Meier (KM) Statistics											
640	k hat (KM)					0.298	nu hat (KM)					8.936
641	Approximate Chi Square Value (8.94, α)					3.289	Adjusted Chi Square Value (8.94, β)					2.88
642	95% Gamma Approximate KM-UCL (use when n>=50)					30.71	95% Gamma Adjusted KM-UCL (use when n<50)					35.06
643												
644	Gamma ROS Statistics using Imputed Non-Detects											
645	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
646	GROS may not be used when kstar of detected data is small such as < 0.1											
647	For such situations, GROS method tends to yield inflated values of UCLs and BTVs											
648	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
649	Minimum					0.01	Mean					8.601

	A	B	C	D	E	F	G	H	I	J	K	L
650					Maximum	77.4					Median	0.01
651					SD	20.85					CV	2.424
652					k hat (MLE)	0.162					k star (bias corrected MLE)	0.174
653					Theta hat (MLE)	53.22					Theta star (bias corrected MLE)	49.5
654					nu hat (MLE)	4.849					nu star (bias corrected)	5.212
655					MLE Mean (bias corrected)	8.601					MLE Sd (bias corrected)	20.63
656											Adjusted Level of Significance (β)	0.0324
657					Approximate Chi Square Value (5.21, α)	1.251					Adjusted Chi Square Value (5.21, β)	1.031
658					95% Gamma Approximate UCL (use when n>=50)	35.82					95% Gamma Adjusted UCL (use when n<50)	N/A
659												
660					**Lognormal GOF Test on Detected Observations Only**							
661					Shapiro Wilk Test Statistic	0.894			**Shapiro Wilk GOF Test**			
662					5% Shapiro Wilk Critical Value	0.748			Detected Data appear Lognormal at 5% Significance Level			
663					Lilliefors Test Statistic	0.274			**Lilliefors GOF Test**			
664					5% Lilliefors Critical Value	0.443			Detected Data appear Lognormal at 5% Significance Level			
665					**Detected Data appear Lognormal at 5% Significance Level**							
666												
667					**Lognormal ROS Statistics Using Imputed Non-Detects**							
668					Mean in Original Scale	9.391					Mean in Log Scale	0.259
669					SD in Original Scale	20.54					SD in Log Scale	2.264
670					95% t UCL (assumes normality of ROS data)	18.73					95% Percentile Bootstrap UCL	19.22
671					95% BCA Bootstrap UCL	25.2					95% Bootstrap t UCL	54.84
672					95% H-UCL (Log ROS)	363.8						
673												
674					**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**							
675					KM Mean (logged)	1.432					95% H-UCL (KM -Log)	23.61
676					KM SD (logged)	1.209					95% Critical H Value (KM-Log)	3.091
677					KM Standard Error of Mean (logged)	0.387						
678												
679					**DL/2 Statistics**							
680					**DL/2 Normal**				**DL/2 Log-Transformed**			
681					Mean in Original Scale	75.86					Mean in Log Scale	1.654
682					SD in Original Scale	173.4					SD in Log Scale	2.354
683					95% t UCL (Assumes normality)	154.7					95% H-Stat UCL	2284
684					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
685												
686					**Nonparametric Distribution Free UCL Statistics**							
687					**Detected Data appear Normal Distributed at 5% Significance Level**							
688												
689					**Suggested UCL to Use**							
690					95% KM (t) UCL	22.98			95% KM (Percentile Bootstrap) UCL			N/A
691					**Warning: One or more Recommended UCL(s) not available!**							
692												
693					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
694					Recommendations are based upon data size, data distribution, and skewness.							
695					These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							
696					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
697												

Appendix F-3 – SGC-IAC Calculator Output

OSWER VAPOR INTRUSION ASSESSMENT

Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator Version 3.3.1, May 2014 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR_SG	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ_SG	0.1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)

	CAS	Chemical Name	Site Sub-slab or Exterior Soil Gas Concentration	Calculated Indoor Air Concentration	VI Carcinogenic Risk	VI Hazard	Inhalation Unit Risk	IUR Source*	Reference Concentration	RFC Source*	Mutagenic Indicator
			Csg	Cia	CR	HQ	IUR		RfC		
			(ug/m^3)	(ug/m^3)			(ug/m^3)$^{-1}$		(mg/m^3)		i
	71-43-2	Benzene	7.8E+00	7.80E-01	5.0E-07	5.9E-03	7.80E-06	I	3.00E-02	I	
	98-82-8	Cumene	7.0E+00	7.00E-01	No IUR	4.0E-04			4.00E-01	I	
	100-41-4	Ethylbenzene	1.0E+02	1.00E+01	**2.0E-06**	2.3E-03	2.50E-06	CA	1.00E+00	I	
	591-78-6	Hexanone, 2-	1.6E+03	1.60E+02	No IUR	**1.2E+00**			3.00E-02	I	
x	127-18-4	Tetrachloroethylene	1.6E+03	1.60E+02	**3.4E-06**	**9.1E-01**	2.60E-07	I	4.00E-02	I	
x	79-01-6	Trichloroethylene	6.4E+01	6.40E+00	**2.1E-06**	**7.3E-01**	see note	I	2.00E-03	I	TCE

RELEVANT SECTION OF MODEL

Appendix F-4 – VADEQ Trench Air Model Assumptions and Output

Table F-4A - Input Values for VADEQ Trench Model (a)

For Mass-Transfer Coefficients			For Emission Flux and Concentra			Trench dimensions		
Kg,H2O	0.833	cm/s	CF1	1.00E-03	L/cm3	Length	**8**	ft
MWH2O	18		CF2	1.00E+04	cm2/m2		2.44	m
Kl,O2	0.002	cm/s	CF3	3600	s/hr	Width	**3**	ft
MWO2	32		F	**1**			0.91	m
T	**77**	F	ACH	2	hr-1	Depth	**8**	ft
T	298	K					2.44	m
R	8.20E-05	atm-m3/mol-K				Width/Dep	0.38	

a/ All input values are VADEQ default values.

Table F-4B - Exposure Point Concentrations for Trench Air Using the Input Values for VADEQ Trench Model (a)

Table 3.8 Exposure-point concentrations (inhalation) for construction/utility workers in a trench: Groundwater less than 15 feet deep revised 10/5/07	CAS No.	Molecular Weight MWi g/mol	Henry's Law Constant Hi atm-m3/mol	Gas-Phase Mass Transfer Coefficient KiG cm/s	Liquid-Phase Mass Transfer Coefficient KiL cm/s	Overall Mass Transfer Coefficient Ki cm/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench ug/m3	Concentration of Contaminant in Trench Ctrench mg/m3
Acetone	67-64-1	58.08	3.88E-05	5.63E-01	1.48E-03	5.58E-04	2.03E+03	4.12E+00	8.37E+03	8.37E+00
Benzene	71-43-2	78.11	5.55E-03	5.09E-01	1.28E-03	1.27E-03	1.23E+01	9.35E+00	1.15E+02	1.15E-01
cis-1,2-Dichloroethene	156-59-2	96.94	4.08E-03	4.74E-01	1.15E-03	1.13E-03	9.07E+02	8.36E+00	7.58E+03	7.58E+00
Ethylbenzene	100-41-4	106.17	7.88E-03	4.60E-01	1.10E-03	1.09E-03	2.09E+01	8.05E+00	1.68E+02	1.68E-01
Toluene	108-88-3	92.14	6.64E-03	4.82E-01	1.18E-03	1.17E-03	4.61E+05	8.62E+00	3.97E+06	3.97E+03
Trichloroethene	79-01-6	131.39	1.03E-02	4.28E-01	9.87E-04	9.82E-04	6.90E-01	7.25E+00	5.00E+00	5.00E-03
Vinyl Chloride	75-01-4	62.50	2.70E-02	5.49E-01	1.43E-03	1.43E-03	2.00E+00	1.05E+01	2.11E+01	2.11E-02
Total Xylenes (b)	1330-20-7	106.16	5.18E-03	4.60E-01	1.10E-03	1.09E-03	2.30E+01	8.02E+00	1.84E+02	1.84E-01
Total Xylenes (c)	1330-20-7	106.16	5.18E-03	4.60E-01	1.10E-03	1.09E-03	8.64E+00	8.02E+00	6.92E+01	6.92E-02

a/ All chemical-specific parameters are VADEQ default values.
b/ VADEQ trench model did not have information for m&p-xylenes; therefore, the model parameters for total xylenes were used as a surrogate for these compounds.
c/ VADEQ trench model did not have information for o-xylene; therefore, the model parameters for total xylenes were used as a surrogate for this compound.

Appendix F-5 – Facility Worker Exposure and Risk Estimates

Table F-5 - Exposure and Risk Calculations for a Facility Worker - Inhalation (Indoor Air) Pathway

Medium:	Sub-slab Vapor
Exposure Medium:	Indoor Air
Receptor Population:	**Facility Worker**
Exposure Route:	Inhalation

Exposure Concentration:

EC = (CA x ET x EF x ED)/(AT x 24 hours/day)

Parameter Code	Parameter Definition	Units	Value	Rationale/Reference (a)
CA	Chemical Concentration in Indoor Air	mg/m^3	Chemical-specific	Calculated (see Table 7-7 and Appendix F-3)
EF	Exposure Frequency	days/year	250	EPA 2014b
ED	Exposure Duration	years	25	EPA 2014b
ET	Exposure Time	hours/day	8	EPA 2014b
AT-C	Averaging Time (Cancer)	days	25,550	EPA 2014b
AT-N	Averaging Time (Non-Cancer)	days	9,125	EPA 2014b

a/ See report for full reference.

Chemical of Potential Concern	Exposure Point Concentration (CA) mg/m^3	Exposure Concentration (EC) cancer mg/m^3	Inhalation Unit Risk (IUR) $(mg/m^3)^{-1}$	Cancer Risk (EC*IUR) unitless	Exposure Concentration (EC) non-cancer mg/m^3	Inhalation Reference Concentration (chronic) (RfCi) mg/m^3	Hazard Quotient (EC/RfCi) unitless
Acetone	-	-	-	-	-	3.09E+01	-
Benzene	7.80E-04	6.36E-05	7.80E-03	4.96E-07	1.78E-04	3.00E-02	5.94E-03
cis-1,2-Dichloroethene	-	-	-	-	-	-	-
Ethylbenzene	7.00E-04	5.71E-05	2.50E-03	1.43E-07	1.60E-04	1.00E+00	1.60E-04
4-Ethyl toluene	7.50E-04	6.12E-05	-	-	1.71E-04	4.00E-01	4.28E-04
2-Hexanone	1.00E-02	8.15E-04	-	-	2.28E-03	3.00E-02	7.61E-02
Tetrachloroethene	1.60E-01	1.30E-02	2.60E-04	3.39E-06	3.65E-02	4.00E-02	9.13E-01
Toluene	-	-	-	-	-	5.00E+00	-
Trichloroethene	6.40E-03	5.22E-04	4.10E-03	2.14E-06	1.46E-03	2.00E-03	7.31E-01
Vinyl chloride	-	-	4.40E-03	-	-	1.00E-01	-
m&p-Xylene	-	-	-	-	-	1.00E-01	-
o-Xylene	-	-	-	-	-	1.00E-01	-
			TOTAL INHALATION PATHWAY	**6.17E-06**			**1.73E+00**

Appendix F-6 – Construction and Utility Worker Exposure and Risk Estimates

Table F-6A - Exposure and Risk Calculations for a Contruction/Utility Worker - Ingestion (Soil) Pathway

Medium:	Subsurface Soil
Exposure Medium:	Soil
Receptor Population:	**Construction/Utility Worker**
Exposure Route:	Ingestion

Intake Equation:
CDI = CS x IF
Intake Factor Equation:
IF= IR x x FI x EF x ED x CF x 1/BW x 1/AT

Parameter Code	Parameter Definition	Units	Value	Rationale/Reference (a)
CDI	Chronic Daily Intake	mg/kg-day	Chemical-specific	Calculated
CS	Chemical Concentration in Soil	mg/kg	Chemical-specific	See Table 7-6
CF	Conversion Factor	kg/mg	1E-06	
IR	Ingestion Rate - Soil	mg/day	330	EPA 2014b
FI	Fraction Ingested	unitless	0.5	VADEQ 2014
EF	Exposure Frequency	days/years	125	VADEQ 2014
ED	Exposure Duration	years	1	EPA 2014b
BW	Body Weight	kg	80	EPA 2014b
AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989
AT-N	Averaging Time (Non-Cancer)	days	365	EPA 1989
IF-C	Intake Factor (Cancer)	$days^{-1}$	1.01E-08	Calculated
IF-N	Intake Factor (Non-cancer)	$days^{-1}$	7.06E-07	Calculated

a/ See report for full reference.

Chemical of Potential Concern	Exposure Point Concentration (Oral) (CS) mg/kg	Chronic Daily Intake (Cancer) (CDIc) mg/kg-day	Oral Cancer Slope Factor (CSFo) 1/(mg/kg-day)	Cancer Risk (CDIc*CSFo) Oral unitless	Chronic Daily Intake (Non-Cancer) (CDIn) mg/kg-day	Oral Reference Dose (chronic) (RfDo) mg/kg-day	Hazard Quotient (CDIn/RfDo) Oral unitless
Acetone	0.663	6.69E-09	-	-	4.68E-07	9.00E-01	5.20E-07
Benzene	0.003977	4.01E-11	5.50E-02	2.21E-12	2.81E-09	4.00E-03	7.02E-07
cis-1,2-Dichloroethene	0.08994	9.08E-10	-	-	6.35E-08	2.00E-03	3.18E-05
Ethylbenzene	0.01142	1.15E-10	1.10E-02	1.27E-12	8.07E-09	1.00E-01	8.07E-08
4-Ethyl toluene	-	-	-	-	-	1.00E-01	-
2-Hexanone	-	-	-	-	-	5.00E-03	-
Tetrachloroethene	-	-	2.10E-03	-	-	6.00E-03	-
Toluene	1134.659	1.14E-05	-	-	8.01E-04	8.00E-02	1.00E-02
Trichloroethene	-	-	4.60E-02	-	-	5.00E-04	-
Vinyl chloride	-	-	7.20E-01	-	-	3.00E-03	-
m&p-Xylene	0.0845	8.53E-10	-	-	5.97E-08	2.00E-01	2.98E-07
o-Xylene	0.0796	8.03E-10	-	-	5.62E-08	2.00E-01	2.81E-07
		TOTAL INGESTION PATHWAY		**3.47E-12**			**1.01E-02**

Table F-6B - Exposure and Risk Calculations for a Contruction/Utility Worker - Inhalation (Volatiles in Soil) Pathway

Medium:	Subsurface Soil
Exposure Medium:	Air (volatiles)
Receptor Population:	**Construction/Utility Worker**
Exposure Route:	Inhalation

Intake Equation (Volatiles in Soil):

EC=(CS x 1/VF x ET x EF x ED)/(AT x 24 hrs/day)

Parameter Code	Parameter Definition	Units	Value	Rationale/Reference (a)
EC	Exposure Concentration	m^3/kg	Chemical-specific	Calculated
CS	Chemical Concentration in Soil	mg/kg	Chemical-specific	See Table 7-6
VF	Volatilization Factor	m^3/kg	Chemical-specific	EPA 2014b
EF	Exposure Frequency	days/year	125	VADEQ 2014
ED	Exposure Duration	years	1	EPA 2014b
ET	Exposure Time	hours/day	4	VADEQ 2014
AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989
AT-N	Averaging Time (Non-Cancer)	days	365	EPA 1989

a/ See report for full reference.

Chemical of Potential Concern	Soil Concentration (CS) mg/kg	CS x (1/VF) mg/m³	Exposure Concentration (ECc) (cancer) mg/m³	Inhalation Unit Risk IUR $(mg/m^3)^{-1}$	Cancer Risk (ECc*IUR) unitless	Exposure Concentration (ECn) (non-cancer) mg/m³	Inhalation Reference Concentration (RfCi) mg/m³	Hazard Quotient (ECn/RfCi) unitless	Volatilization Factor (VF) m^3/kg
Acetone	0.663	4.64E-05	3.78E-08	-	-	2.65E-06	3.09E+01	8.57E-08	1.43E+04
Benzene	0.003977	1.07E-06	8.72E-10	7.80E-03	6.80E-12	6.10E-08	3.00E-02	2.03E-06	3.72E+03
cis-1,2-Dichloroethene	0.08994	3.43E-05	2.80E-08	-	-	1.96E-06	-	-	2.62E+03
Ethylbenzene	0.01142	1.92E-06	1.57E-09	2.50E-03	3.91E-12	1.10E-07	1.00E+00	1.10E-07	5.95E+03
4-Ethyl toluene	-	-	-	-	-	-	4.00E-01	-	-
2-Hexanone	-	-	-	-	-	-	3.00E-02	-	-
Tetrachloroethene	-	-	-	2.60E-04	-	-	4.00E-02	-	-
Toluene	1134.659	2.52E-01	2.05E-04	-	-	1.44E-02	5.00E+00	2.87E-03	4.51E+03
Trichloroethene	-	-	-	4.10E-03	-	-	2.00E-03	-	-
Vinyl chloride	-	-	-	4.40E-03	-	-	1.00E-01	-	-
m&p-Xylene	0.0845	1.44E-05	1.18E-08	-	-	8.23E-07	1.00E-01	8.23E-06	5.86E+03
o-Xylene	0.0796	1.17E-05	9.57E-09	-	-	6.70E-07	1.00E-01	6.70E-06	6.78E+03
		TOTAL INHALATION (VOLATILES) PATHWAY			**1.07E-11**			**2.89E-03**	

Table F-6C - Exposure and Risk Calculations for a Contruction/Utility Worker - Inhalation (Particulates in Soil) Pathway

Medium:	Subsurface Soil
Exposure Medium:	Air (particulates)
Receptor Population:	**Construction/Utility Worker**
Exposure Route:	Inhalation

Intake Equation (Particulates in Soil):

EC=(CS x 1/PEF x ET x EF x ED)/(AT x 24 hrs/day)

Parameter Code	Parameter Definition	Units	Value	Rationale/Reference (a)
EC	Exposure Concentration	m^3/kg	Chemical-specific	Calculated
CS	Chemical Concentration in Soil	mg/kg	Chemical-specific	See Table 7-6
PEF	Particulate Emission Factor	m^3/kg	5.93E+10	EPA 2014b
EF	Exposure Frequency	days/year	125	VADEQ 2014
ED	Exposure Duration	years	1	EPA 2014b
ET	Exposure Time	hours/day	4	VADEQ 2014
AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989
AT-N	Averaging Time (Non-Cancer)	days	365	EPA 1989

a/ See report for full reference.

Chemical of Potential Concern	Soil Concentration (CS) mg/kg	CS x (1/PEF) mg/m3	Exposure Concentration (ECc) (cancer) mg/m3	Inhalation Unit Risk (IUR) $(mg/m^3)^{-1}$	Cancer Risk (ECc*IUR) unitless	Exposure Concentration (ECn) (non-cancer) mg/m3	Inhalation Reference Concentration (RfCi) mg/m^3	Hazard Quotient (ECn/RfCi) unitless
Acetone	0.663	1.12E-11	9.12E-15	-	-	6.38E-13	3.09E+01	2.07E-14
Benzene	0.003977	6.71E-14	5.47E-17	7.80E-03	4.27E-19	3.83E-15	3.00E-02	1.28E-13
cis-1,2-Dichloroethene	0.08994	1.52E-12	1.24E-15	-	-	8.66E-14	-	-
Ethylbenzene	0.01142	1.93E-13	1.57E-16	2.50E-03	3.93E-19	1.10E-14	1.00E+00	1.10E-14
4-Ethyl toluene	-	-	-	-	-	-	4.00E-01	-
2-Hexanone	-	-	-	-	-	-	3.00E-02	-
Tetrachloroethene	-	-	-	2.60E-04	-	-	4.00E-02	-
Toluene	1134.659	1.91E-08	1.56E-11	-	-	1.09E-09	5.00E+00	2.18E-10
Trichloroethene	-	-	-	4.10E-03	-	-	2.00E-03	-
Vinyl chloride	-	-	-	4.40E-03	-	-	1.00E-01	-
m&p-Xylene	0.0845	1.42E-12	1.16E-15	-	-	8.13E-14	1.00E-01	8.13E-13
o-Xylene	0.0796	1.34E-12	1.09E-15	-	-	7.66E-14	1.00E-01	7.66E-13
		TOTAL INHALATION (PARTICULATES) PATHWAY			**8.19E-19**			**2.20E-10**

Table F-6D - Exposure and Risk Calculations for a Contruction/Utility Worker - Ingestion (Groundwater) Pathway

Medium:	Groundwater
Exposure Medium:	Shallow Groundwater
Receptor Population:	**Construction/Utility Worker**
Exposure Route:	Ingestion
Receptor Age:	**Adult**

Intake Equation:
CDI=CW x IF

Intake Factor Equation:
IF = IR x EF x ED x 1/BW x 1/AT

Parameter Code	Parameter Definition	Units	Value	Rationale/ Reference (a)
CDI	Chronic Daily Intake	mg/kg-day	Chemical-specific	Calculated
CW	Chemical Concentration in Water	mg/L	Chemical-specific	See Table 7-6
IR	Ingestion Rate of Water	liters/day	0.02	VADEQ 2014
EF	Exposure Frequency	days/year	125	VADEQ 2014
ED	Exposure Duration	years	1	EPA 2014b
BW	Body Weight	kg	80	EPA 2014b
AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989
AT-N	Averaging Time (Non-Cancer)	days	365	EPA 1989
IF-C	Intake Factor (Cancer)	liters/kg-day	1.22E-06	Calculated
IF-N	Intake Factor (Non-Cancer)	liters/kg-day	8.56E-05	Calculated

a/ See report for full reference.

Chemical of Potential Concern	Exposure Point Concentration (Oral) (CW) mg/L	Chronic Daily Intake (Cancer) (CDIc) mg/kg-day	Oral Cancer Slope Factor (CSFo) 1/(mg/kg-day)	Cancer Risk (CDIc*CSFo) unitless	Chronic Daily Intake (Non-Cancer) (CDIn) mg/kg-day	Oral Reference Dose RfDo mg/kg-day	Hazard Quotient (CDIn/RfDo) unitless
Acetone	2.03E+00	2.49E-06	-	-	1.74E-04	9.00E-01	1.93E-04
Benzene	1.23E-02	1.50E-08	5.50E-02	8.26E-10	1.05E-06	4.00E-03	2.63E-04
cis-1,2-Dichloroethene	9.07E-01	1.11E-06	-	-	7.76E-05	2.00E-03	3.88E-02
Ethylbenzene	2.09E-02	2.56E-08	1.10E-02	2.82E-10	1.79E-06	1.00E-01	1.79E-05
4-Ethyl toluene	-	-	-	-	-	1.00E-01	-
2-Hexanone	-	-	-	-	-	5.00E-03	-
Tetrachloroethene	-	-	2.10E-03	-	-	6.00E-03	-
Toluene	4.61E+02	5.63E-04	-	-	3.94E-02	8.00E-02	4.93E-01
Trichloroethene	6.90E-04	8.44E-10	4.60E-02	3.88E-11	5.91E-08	5.00E-04	1.18E-04
Vinyl chloride	2.00E-03	2.45E-09	7.20E-01	1.76E-09	1.71E-07	3.00E-03	5.71E-05
m&p-Xylene	2.30E-02	2.81E-08	-	-	1.97E-06	2.00E-01	9.84E-06
o-Xylene	8.64E-03	1.06E-08	-	-	7.39E-07	2.00E-01	3.70E-06
			TOTAL INGESTION PATHWAY	**2.91E-09**			**5.32E-01**

Table F-6E - Exposure and Risk Calculations for a Contruction/Utility Worker - Dermal Contact (Groundwater) Pathway

Medium:	Groundwater
Exposure Medium:	Shallow Groundwater
Receptor Population:	**Construction/Utility Worker**
Exposure Route:	Dermal
Receptor Age:	**Adult**

Intake Equation: DAD=DAevent x IF
Intake Factor Equation: IF=EV x SA x EF x ED x 1/BW x 1/AT
DAevent Equation:
For inorganic compounds: DAevent = Kp x CW x tevent
For organic compounds, see EPA RAGS Part E, equations 3.2 and 3.3.

Parameter Code	Parameter Definition	Units	Value	Rationale/ Reference (a)
DAD	Dermally Absorbed Dose	mg/kg-day	Chemical-specific	Calculated
DAevent	Absorbed dose per event	mg/cm^2-event	Chemical-specific	Calculated; (see Appendix F-7)
EV	Event frequency	events/day	1	EPA 2002
SA	Skin Surface Area Available for Contact	cm^2	3,470	EPA 2014b
EF	Exposure Frequency	days/years	125	VADEQ 2014
ED	Exposure Duration	years	1	EPA 2014b
BW	Body Weight	kg	80	EPA 2014b
AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989
AT-N	Averaging Time (Non-cancer)	days	365	EPA 1989
Kp	Dermal Permeability Coefficient	cm/hr	Chemical-specific	See Appendix F-7
CW	Chemical Concentration in Water	mg/cm^3	Chemical-specific	See Table 7-6 and Appendix F-7
tevent	Event Duration	hr/day	4	VADEQ 2014
IF-C	Intake Factor (Cancer)	event-cm^2/kg-day	2.12E-01	Calculated
IF-N	Intake Factor (Non-cancer)	event-cm^2/kg-day	1.49E+01	Calculated

a/ See report for full reference.

Chemical of Potential Concern	Groundwater Concentration (CW) mg/cm^3	Absorbed Dose per Event (DAevent) mg/cm^2-event	Dermally Absorbed Dose (Cancer) (DADc) mg/kg-day	Adjusted Dermal Cancer Slope Factor CSFd 1/(mg/kg-day)	Cancer Risk (DADc*CSFd) unitless	Dermally Absorbed Dose (Non-Cancer) (DADn) mg/kg-day	Adjusted Dermal Reference Dose (chronic) RfDd mg/kg-day	Hazard Quotient (DADn/RfDd) unitless
Acetone	2.03E-03	4.62E-06	-	-	-	6.86E-05	9.00E-01	7.63E-05
Benzene	1.23E-05	8.08E-07	1.71E-07	5.50E-02	9.43E-09	1.20E-05	4.00E-03	3.00E-03
cis-1,2-Dichloroethene	9.07E-04	4.01E-05	-	-	-	5.96E-04	2.00E-03	2.98E-01
Ethylbenzene	2.09E-05	4.47E-06	9.49E-07	1.10E-02	1.04E-08	6.64E-05	1.00E-01	6.64E-04
4-Ethyl toluene	-	-	-	-	-	-	1.00E-01	-
2-Hexanone	-	-	-	-	-	-	5.00E-03	-
Tetrachloroethene	-	-	-	2.10E-03	-	-	6.00E-03	-
Toluene	4.61E-01	6.25E-02	-	-	-	9.28E-01	8.00E-02	1.16E+01
Trichloroethene	6.90E-07	4.04E-08	8.57E-09	4.60E-02	3.94E-10	6.00E-07	5.00E-04	1.20E-03
Vinyl chloride	2.00E-06	7.35E-08	1.56E-08	7.20E-01	1.12E-08	1.09E-06	3.00E-03	3.64E-04
m&p-Xylene	2.30E-05	5.28E-06	-	-	-	7.84E-05	2.00E-01	3.92E-04
o-Xylene	8.64E-06	1.88E-06	-	-	-	2.79E-05	2.00E-01	1.40E-04
				TOTAL DERMAL PATHWAY	**3.15E-08**			**1.19E+01**

Table F-6F - Exposure and Risk Calculations for a Contruction/Utility Worker - Inhalation (Trench Air) Pathway

Medium:	Shallow Groundwater
Exposure Medium:	Trench Air
Receptor Population:	**Construction and Utility Worker**
Exposure Route:	Inhalation

Exposure Concentration:
EC=(CA x ET x EF x ED)/(AT x 24 hours/day)

Parameter Code	Parameter Definition	Units	Value	Rationale/Reference (a)
CA	Chemical Concentration in Trench Air	mg/m^3	Chemical-specific	Calculated (see Table 7-8 and Appendix F-4)
EF	Exposure Frequency	days/year	125	VADEQ 2014
ED	Exposure Duration	years	1	EPA 2014b
ET	Exposure Time	hours/day	4	VADEQ 2014
AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989
AT-N	Averaging Time (Non-Cancer)	days	365	EPA 1989

a/ See report for full reference.

Chemical of Potential Concern	Exposure Point Concentration (CA) mg/m^3	Exposure Concentration (EC) cancer mg/m^3	Inhalation Unit Risk (IUR) $(mg/m^3)^{-1}$	Cancer Risk (EC*IUR) unitless	Exposure Concentration (EC) non-cancer mg/m^3	Inhalation Reference Concentration (chronic) (RfCi) mg/m^3	Hazard Quotient (EC/RfCi) unitless
Acetone	8.37E+00	6.83E-03	-	-	4.78E-01	3.09E+01	1.55E-02
Benzene	1.15E-01	9.38E-05	7.80E-03	7.31E-07	6.56E-03	3.00E-02	2.19E-01
cis-1,2-Dichloroethene	7.58E+00	6.18E-03	-	-	4.33E-01	-	-
Ethylbenzene	1.68E-01	1.37E-04	2.50E-03	3.42E-07	9.59E-03	1.00E+00	9.59E-03
4-Ethyl toluene	-	-	-	-	-	4.00E-01	-
2-Hexanone	-	-	-	-	-	3.00E-02	-
Tetrachloroethene	-	-	2.60E-04	-	-	4.00E-02	-
Toluene	3.97E+03	3.24E+00	-	-	2.27E+02	5.00E+00	4.53E+01
Trichloroethene	5.00E-03	4.08E-06	4.10E-03	1.67E-08	2.85E-04	2.00E-03	1.43E-01
Vinyl chloride	2.10E-02	1.71E-05	4.40E-03	7.53E-08	1.20E-03	1.00E-01	1.20E-02
m&p-Xylene	1.84E-01	1.50E-04	-	-	1.05E-02	1.00E-01	1.05E-01
o-Xylene	6.90E-02	5.63E-05	-	-	3.94E-03	1.00E-01	3.94E-02
		TOTAL INHALATION PATHWAY		**1.17E-06**			**4.59E+01**

Appendix F-7 – Estimated Dermally Absorbed Doses for COPCs in Shallow Groundwater

```
                  Kp (est): 0.000512 cm/hr

SMILES : O=C(C)C
CHEM   : 2-Propanone
MOL FOR: C3 H6 O1
MOL WT : 58.08
------------------------------ Dermwin v2.02 ----------------------------------
Log Kow  (estimated)  :  -0.23
Log Kow (experimental):  -0.24   (used in Kp calculations)
    Cas No: 000067-64-1
    Name  : ACETONE
    Refer : HANSCH,C ET AL. (1995)

GENERAL Equation:   log Kp = -2.80 + 0.66 log Kow - 0.0056 MW
    Kp (predicted): 0.000512  cm/hr

Dermally Absorbed Dose per Event for Organic Compounds - Water Contact:
   Water Conc (mg/cm3): 0.00203  (entered by user)
   Fraction Absorbed  : 1.0000

   DA(event):  4.62e-006 mg/cm2-event (using eqn 3.2 & 3.3)
                   (tau = 0.225 hr,  t* = 0.541 hr)

Dermally Absorbed Dose (80.00 kg Human) - Water Contact:
   DAD:  6.87e-005 mg/kg-day (using eqn 3.1)
      using:
        SA: 3470.0 cm2  (skin surface area)
        EV: 1.00 event/day  (event freq)
        ED: 1.0 years  (exposure duration)
        EF: 125.0 day/year  (exposure freq)
        BW: 80.00 kg  (body weight)
        AT: 365.00 days  (averaging time)
```

```
                  Kp (est): 0.0149 cm/hr

SMILES : c(cccc1)c1
CHEM   : Benzene
MOL FOR: C6 H6
MOL WT : 78.11
------------------------------ Dermwin v2.02 ----------------------------------
Log Kow  (estimated)  :  1.99
Log Kow (experimental):  2.13   (used in Kp calculations)
    Cas No: 000071-43-2
    Name  : BENZENE
    Refer : HANSCH,C ET AL. (1995)

GENERAL Equation:   log Kp = -2.80 + 0.66 log Kow - 0.0056 MW
    Kp (predicted): 0.0149  cm/hr

Dermally Absorbed Dose per Event for Organic Compounds - Water Contact:
   Water Conc (mg/cm3): 1.23e-005  (entered by user)
   Fraction Absorbed  : 1.0000

   DA(event):  8.08e-007 mg/cm2-event (using eqn 3.2 & 3.3)
                   (tau = 0.292 hr,  t* = 0.701 hr)

Dermally Absorbed Dose (80.00 kg Human) - Water Contact:
   DAD:  1.72e-007 mg/kg-day (using eqn 3.1)
      using:
        SA: 3470.0 cm2  (skin surface area)
        EV: 1.00 event/day  (event freq)
        ED: 1.0 years  (exposure duration)
        EF: 125.0 day/year  (exposure freq)
        BW: 80.00 kg  (body weight)
        AT: 25550.00 days  (averaging time)
```

```
                  Kp (est): 0.00955 cm/hr

SMILES : C(=CCL)CL
CHEM   : Ethene, 1,2-dichloro-, (Z)-
MOL FOR: C2 H2 CL2
MOL WT : 96.94
------------------------------ Dermwin v2.02 ----------------------------------
Log Kow  (estimated)  :  1.98
Log Kow (experimental):  2.00   (used in Kp calculations)
    Cas No: 000540-59-0
    Name  : 1,2-DICHLOROETHYLENE
    Refer : HANSCH,C ET AL. (1995); isomer avg.

GENERAL Equation:   log Kp = -2.80 + 0.66 log Kow - 0.0056 MW
    Kp (predicted): 0.00955  cm/hr

Dermally Absorbed Dose per Event for Organic Compounds - Water Contact:
   Water Conc (mg/cm3): 0.000907  (entered by user)
   Fraction Absorbed  : 1.0000

   DA(event):  4.01e-005 mg/cm2-event (using eqn 3.2 & 3.3)
                   (tau = 0.372 hr,  t* = 0.894 hr)

Dermally Absorbed Dose (80.00 kg Human) - Water Contact:
   DAD:  0.000596 mg/kg-day (using eqn 3.1)
      using:
        SA: 3470.0 cm2  (skin surface area)
        EV: 1.00 event/day  (event freq)
        ED: 1.0 years  (exposure duration)
        EF: 125.0 day/year  (exposure freq)
        BW: 80.00 kg  (body weight)
        AT: 365.00 days  (averaging time)
```

```
                  Kp (est): 0.0493 cm/hr

SMILES : c(cccc1)(c1)CC
CHEM   : Benzene, ethyl-
MOL FOR: C8 H10
MOL WT : 106.17
------------------------------ Dermwin v2.02 ----------------------------------
Log Kow  (estimated)  :  3.03
Log Kow (experimental):  3.15   (used in Kp calculations)
    Cas No: 000100-41-4
    Name  : ETHYLBENZENE
    Refer : HANSCH,C ET AL. (1995)

GENERAL Equation:   log Kp = -2.80 + 0.66 log Kow - 0.0056 MW
    Kp (predicted): 0.0493  cm/hr

Dermally Absorbed Dose per Event for Organic Compounds - Water Contact:
   Water Conc (mg/cm3): 2.09e-005  (entered by user)
   Fraction Absorbed  : 1.0000

   DA(event):  4.47e-006 mg/cm2-event (using eqn 3.2 & 3.3)
                  (tau = 0.419 hr,  t* = 1.01 hr)

Dermally Absorbed Dose (80.00 kg Human) - Water Contact:
   DAD:  6.65e-005 mg/kg-day (using eqn 3.1)
      using:
        SA: 3470.0 cm2  (skin surface area)
        EV: 1.00 event/day  (event freq)
        ED: 1.0 years  (exposure duration)
        EF: 125.0 day/year  (exposure freq)
        BW: 80.00 kg  (body weight)
        AT: 365.00 days  (averaging time)
```

```
                  Kp (est): 0.0311 cm/hr

SMILES : c(cccc1)(c1)C
CHEM   : Benzene, methyl-
MOL FOR: C7 H8
MOL WT : 92.14
------------------------------ Dermwin v2.02 ----------------------------------
Log Kow  (estimated)  :  2.54
Log Kow (experimental):  2.73   (used in Kp calculations)
    Cas No: 000108-88-3
    Name  : TOLUENE
    Refer : HANSCH,C ET AL. (1995)

GENERAL Equation:   log Kp = -2.80 + 0.66 log Kow - 0.0056 MW
    Kp (predicted): 0.0311  cm/hr

Dermally Absorbed Dose per Event for Organic Compounds - Water Contact:
   Water Conc (mg/cm3): 0.461  (entered by user)
   Fraction Absorbed  : 1.0000

   DA(event):  0.0625 mg/cm2-event (using eqn 3.2 & 3.3)
                   (tau = 0.35 hr,  t* = 0.84 hr)

Dermally Absorbed Dose (80.00 kg Human) - Water Contact:
   DAD:  0.929 mg/kg-day (using eqn 3.1)
      using:
        SA: 3470.0 cm2  (skin surface area)
        EV: 1.00 event/day  (event freq)
        ED: 1.0 years  (exposure duration)
        EF: 125.0 day/year  (exposure freq)
        BW: 80.00 kg  (body weight)
        AT: 365.00 days  (averaging time)
```

```
                  Kp (est): 0.0116 cm/hr

SMILES : C(=CCL)(CL)CL
CHEM   : Ethene, trichloro-
MOL FOR: C2 H1 CL3
MOL WT : 131.39
------------------------------ Dermwin v2.02 ----------------------------------
Log Kow  (estimated)  :  2.47
Log Kow (experimental):  2.42   (used in Kp calculations)
    Cas No: 000079-01-6
    Name  : TRICHLOROETHENE
    Refer : HANSCH,C ET AL. (1995)

GENERAL Equation:   log Kp = -2.80 + 0.66 log Kow - 0.0056 MW
    Kp (predicted): 0.0116  cm/hr

Dermally Absorbed Dose per Event for Organic Compounds - Water Contact:
   Water Conc (mg/cm3): 6.9e-007  (entered by user)
   Fraction Absorbed  : 1.0000

   DA(event):  4.04e-008 mg/cm2-event (using eqn 3.2 & 3.3)
                  (tau = 0.581 hr,  t* = 1.39 hr)

Dermally Absorbed Dose (80.00 kg Human) - Water Contact:
   DAD:  8.57e-009 mg/kg-day (using eqn 3.1)
      using:
        SA: 3470.0 cm2  (skin surface area)
        EV: 1.00 event/day  (event freq)
        ED: 1.0 years  (exposure duration)
        EF: 125.0 day/year  (exposure freq)
        BW: 80.00 kg  (body weight)
        AT: 25550.00 days  (averaging time)
```

```
                  Kp (est): 0.00838 cm/hr

SMILES : C(=C)CL
CHEM   : Ethene, chloro-
MOL FOR: C2 H3 CL1
MOL WT : 62.50
------------------------------ Dermwin v2.02 ----------------------------------
Log Kow  (estimated)  :  1.62
Log Kow (experimental):  not available

GENERAL Equation:   log Kp = -2.80 + 0.66 log Kow - 0.0056 MW
    Kp (predicted): 0.00838  cm/hr

Dermally Absorbed Dose per Event for Organic Compounds - Water Contact:
   Water Conc (mg/cm3): 2e-006  (entered by user)
   Fraction Absorbed  : 1.0000

   DA(event):  7.35e-008 mg/cm2-event (using eqn 3.2 & 3.3)
                   (tau = 0.239 hr,  t* = 0.573 hr)

Dermally Absorbed Dose (80.00 kg Human) - Water Contact:
   DAD:  1.56e-008 mg/kg-day (using eqn 3.1)
      using:
        SA: 3470.0 cm2  (skin surface area)
        EV: 1.00 event/day  (event freq)
        ED: 1.0 years  (exposure duration)
        EF: 125.0 day/year  (exposure freq)
        BW: 80.00 kg  (body weight)
        AT: 25550.00 days  (averaging time)
```

(Vinyl Chloride)

```
                  Kp (est): 0.0532 cm/hr

SMILES : c(cccc1C)(c1)C
CHEM   : Benzene, 1,3-dimethyl-
MOL FOR: C8 H10
MOL WT : 106.17
------------------------------ Dermwin v2.02 ----------------------------------
Log Kow  (estimated)  :  3.09
Log Kow (experimental):  3.20   (used in Kp calculations)
    Cas No: 000108-38-3
    Name  : M-XYLENE
    Refer : HANSCH,C ET AL. (1995)

GENERAL Equation:   log Kp = -2.80 + 0.66 log Kow - 0.0056 MW
    Kp (predicted): 0.0532  cm/hr

Dermally Absorbed Dose per Event for Organic Compounds - Water Contact:
   Water Conc (mg/cm3): 2.3e-005  (entered by user)
   Fraction Absorbed  : 1.0000

   DA(event):  5.28e-006 mg/cm2-event (using eqn 3.2 & 3.3)
                   (tau = 0.419 hr,  t* = 1.01 hr)

Dermally Absorbed Dose (80.00 kg Human) - Water Contact:
   DAD:  7.84e-005 mg/kg-day (using eqn 3.1)
      using:
        SA: 3470.0 cm2  (skin surface area)
        EV: 1.00 event/day  (event freq)
        ED: 1.0 years  (exposure duration)
        EF: 125.0 day/year  (exposure freq)
        BW: 80.00 kg  (body weight)
        AT: 365.00 days  (averaging time)
```

(m&p-Xylenes)

```
                  Kp (est): 0.05 cm/hr

SMILES : c(c(ccc1)C)(c1)C
CHEM   : Benzene, 1,2-dimethyl-
MOL FOR: C8 H10
MOL WT : 106.17
------------------------------ Dermwin v2.02 ----------------------------------
Log Kow  (estimated)  :  3.09
Log Kow (experimental):  3.16   (used in Kp calculations)
    Cas No: 001330-20-7
    Name  : XYLENES (Isomer Mixture)
    Refer : HANSCH,C ET AL. (1995);avg

GENERAL Equation:   log Kp = -2.80 + 0.66 log Kow - 0.0056 MW
    Kp (predicted): 0.05  cm/hr

Dermally Absorbed Dose per Event for Organic Compounds - Water Contact:
   Water Conc (mg/cm3): 8.64e-006  (entered by user)
   Fraction Absorbed  : 1.0000

   DA(event):  1.88e-006 mg/cm2-event (using eqn 3.2 & 3.3)
                   (tau = 0.419 hr,  t* = 1.01 hr)

Dermally Absorbed Dose (80.00 kg Human) - Water Contact:
   DAD:  2.79e-005 mg/kg-day (using eqn 3.1)
      using:
        SA: 3470.0 cm2  (skin surface area)
        EV: 1.00 event/day  (event freq)
        ED: 1.0 years  (exposure duration)
        EF: 125.0 day/year  (exposure freq)
        BW: 80.00 kg  (body weight)
        AT: 365.00 days  (averaging time)
```

(o-Xylene)

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