# Periodic Review Report

## *Review Period July 2020 – November 2022*

Swivelier Company

33 Route 304, Nanuet, Rockland County, New York 10954

NYSDEC Site Nos. 3-44-036 & V00520

**Submitted to:**
S.F. Properties, LLC
627 South Main Street
New City, New York 10956

**Submitted by:**
EWMA
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Parsippany, NJ 07054
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November 2022

Project 202530
Volume 1 of 1

Prepared by Jacob M. Strauss, PE
Senior Project Engineer

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# Certification

I, Jacob M. Strauss, certify that I am currently a New York State Registered Professional Engineer. In accordance with the DER Technical Guidance for Site Remediation (DER-10) Section 1.5 Certification Requirement 1.5(b)5, for each institutional or engineering control identified for the Site, I certify that all of the following statements are true:

(a) the institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by NYSDEC;

(b) nothing has occurred that would impair the ability of such control to protect public health and the environment;

(c) nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control;

(d) access to the Site will continue to be provided to NYSDEC to evaluate the remedy, including access to evaluate the continued maintenance of this control.

By: EWMA Engineering Services LLC

NYS Certificate of Authorization No. 0016891

Jacob M. Strauss 11/14/2022

Jacob M. Strauss, NYSPE No. 097765

EWMA Project No. 202530


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# 1. Executive Summary

## 1.1 Containment Conditions and Remedial History

The Property, which housed the former Swivelier Company, is listed as a Class 2 site on the New York State Registry of Inactive Disposal Waste Sites. The Property is located at 33 Route 304 in an industrial/commercial area of Nanuet, Rockland County, New York. A 132,000 square-foot building is located on a six-acre parcel surrounded by paved parking lots. The Site is zoned commercial and industrial and is currently utilized for commercial and industrial uses.

The Swivelier Company operated in a portion of the building for the assembly, manufacture, warehousing and distribution of lighting fixtures from 1956 to 1997. Non-contact process water and cooling water, as well as wastewater from the building floor drain system, was discharged to a drainage ditch on the western portion of the property. In 1979, the Rockland County Department of Health received a complaint citing discolored water flowing in the ditch. Samples collected by the Spring Valley Water Company in 1980 from the outfall pipe and in the surface waters indicated total volatile organic compounds (VOC) of 14,425 parts per billion (ppb)and 8,962 ppb, respectively. In 1980, Swivelier eliminated the use of the VOC compounds TCE and methylene chloride (MCl) in their processes and directed the site process, process waters, and waste waters to the municipal sewer system rather than to the on-site drainage ditch.

In 1991, the Rockland County Department of Health (RCDH) collected groundwater samples from several businesses and residential wells in this area. TCE was detected at 5,400 ppb in a sample from the L.A. Woman nightclub, located 0.4 miles to the south of the Property. Several other wells in the vicinity of L.A. Woman also contained TCE, but at lower concentrations. The RCDH identified numerous potential sources, including Swivelier, for the TCE contamination in the L.A. Woman well. The New York State Department of Environmental Conservation (NYSDEC) listed the Property on the New York State Registry of Inactive Waste Sites in July 1991 as a Class 2 site.

The NYSDEC retained Camp Dresser & McKee (CDM) to perform a Remedial Investigation/Feasibility Study (RI/FS) at the Property. The RI/FS was completed in two separate phases in 1994 and 1995. The results of the RI/FS identified VOC contaminated soils in the drainage ditch (discharge area) and VOC contamination in the underlying bedrock aquifer.

A hot spot excavation and soil removal was performed at the source area (on-site drainage ditch) in June 1999 by CDM. Soils were excavated within and adjacent to the ditch

to the zone of saturation, approximately 8-feet below ground surface (bgs). All soils were transported off-site and disposed of at a licensed waste handling facility.

Post excavation sample results of 1,100 parts per million (ppm) indicated that a small area of impacted soils approximately 10 by 10-feet by the former discharge pipe location remained in the subsurface soils below the water table. No further remediation activities were carried out at this location by CDM. S.F. Properties, LLC (S.F. Properties) entered into a Voluntary Cleanup Agreement (VCA) in April 2002 with the NYSDEC to remediate the site.

In-Situ Oxidation Technologies, Inc. (ISOTEC) in-situ chemox treatment processes were conducted in November 2002 for the field pilot study, and again in May 2005 for the full-scale treatment program, to remediate subsurface contamination via injection of peroxide and proprietary catalysts, thereby oxidizing contamination using Fenton's Reaction.

In accordance with the November 2004 RAWP, an SSDS was installed in March 2008 to address concerns regarding a potential source of vapor intrusion beneath the building. The results of the diagnostic field pilot test, conducted by EWMA on August 23, 2004, provided a basis to determine the locations and number of extraction points necessary to achieve adequate depressurization underneath the entire building. Upon instructions from the property representative, all SSDS installation activities were conducted within the empty warehouse portion of the building.

Long-term monitored natural attenuation (MNA) of groundwater within the overburden aquifers is currently being utilized, relying on natural attenuation processes to achieve applicable groundwater remediation standards.

This Periodic Review Report (PRR) is issued for the July 2020 through November 2022 review period.

## 1.2 Effectiveness of the Remedial Program

The impacted media are now either beneath the existing buildings or have been excavated to the groundwater table, a depth of approximately 8-feet bgs in the former drainage ditch (CDM Supplemental Investigation Report, July 2000). The remaining area of the drainage ditch and exposed soils onsite have been covered with either an asphalt parking lot, landscaping, or buildings. The storm water that flowed from the site through an open ditch has been diverted through underground storm sewers to the off-site surface water body. The exposure pathways have been eliminated on-site by engineering controls, which

removed the point of exposure from surficial contact. However, impacted subsurface soil remains on site and constitutes a potential point of exposure through vapor intrusion.

Impacted groundwater at the site can be found within the overlying unconsolidated sediments and within the underlying bedrock. The groundwater is found at depths of 8-feet or greater at the site. No wells, either potable or industrial exist at the site. No groundwater discharge points on the site. Groundwater, and dissolved contaminants associated with the groundwater, flows in the subsurface toward the south-southwest. The contamination appears to be within the unconsolidated sediments, which are not considered a major aquifer in the area, and within the deep underlying bedrock aquifer, which is utilized as a potable water source off-site. Therefore, there are no points of exposure related to the on-site groundwater, except through potential vapor intrusion.

The approved ROD included No Action, i.e. natural attenuation for treatment of the groundwater contamination in the on-site overburden aquifers. Continued natural attenuation of the groundwater within the overburden aquifers is proposed based upon the current contamination concentrations.

## 1.3 Compliance Status

The Site is being managed in compliance with the NYSDEC approved SMP. EWMA conducted site inspections on June 2 and 9, 2022 and found that the SSDS was damaged and not operational. Repairs were completed in September 2022. EWMA returned to conduct the annual site inspection on September 22, 2022 and confirmed that the SSDS had been repaired and was now fully operational. Additionally, eight new permanent sub-slab monitoring points were installed on September 22 and 23, 2022, **Figure 3**.

## 1.4 Conclusions and Recommendations

During the review period from July 2020 through November 2022, the SMP has been implemented and the remedy, along with the institutional and engineering controls, continues to be protective of human health and the environment.

**Other SMP Elements** – Operation and monitoring information as specified in the SMP for this PRR period is detailed in this document.

**Periodic Review Report Schedule** – The next PRR will be prepared to cover the November 2022 through November 2023 reporting period.

**Site Management Plan Implementation** – Based on the continued need for institutional controls and engineering controls, it is recommended that the SMP remain in effect.

# 2. Site Overview

## 2.1 Description

The approximately six-acre Site contains a 132,000 square-foot building surrounded by paved parking lots. The Site is zoned commercial and industrial and is currently utilized for commercial and industrial uses. The Site is bordered by Demarest Mill Road to the north; Route 304 to the east; West Nyack Road to the south; and Teplitz Inc., an auto salvage facility to the west, **Figure 1**. Commercial enterprises, including a gas station and an automobile dealership, are located along the eastern side of Route 304. A bakery, delicatessen, and commercial buildings are located to the North across Demarest Road. An abandoned house is located on the southeast corner of Route 304 and Nyack Road, and an auto repair shop is located along Nyack Road directly adjacent to the Property. Apartment buildings are located to the south across Nyack Road. Directly adjacent to the Property on the west is Teplitz Salvage Yard. Further west of Teplitz along Nyack Road are additional automobile salvage/repair shops and trucking/shipping companies.

The Swivelier Company operated in a portion of the building for the assembly, manufacture, warehousing, and distribution of lighting fixtures from 1956 to 1997. Non-contact process water and cooling water, as well as wastewater from the building floor drain system, was discharged to a drainage ditch on the western portion of the property.

## 2.2 Chronology, Remedy Components, Remediation Goals, and Remedy Changes

A chronology of significant site compliance milestones is provided as follows:

In 1979, the Rockland County Department of Health received a complaint citing discolored water flowing in the ditch. Samples collected by the Spring Valley Water Company in 1980 from the outfall pipe and in the surface waters indicated total volatile organic compounds (VOC) of 14,425 parts per billion (ppb)and 8,962 ppb, respectively. In 1980, Swivelier eliminated the use of the VOC compounds TCE and methylene chloride (MCl) in their processes and directed the site process, process waters, and waste waters to the municipal sewer system rather than to the on-site drainage ditch.

In 1991, the Rockland County Department of Health (RCDH) collected groundwater samples from several businesses and residential wells in this area. TCE was detected at 5,400 ppb in a sample from the L.A. Woman nightclub, located 0.4 miles to the south of the Property. Several other wells in the vicinity of L.A. Woman also contained TCE, but at lower concentrations. The RCDH identified numerous potential sources, including Swivelier, for the

TCE contamination in the L.A. Woman well. The New York State Department of Environmental Conservation (NYSDEC) listed the Property on the New York State Registry of Inactive Waste Sites in July 1991 as a Class 2 site.

The NYSDEC retained Camp Dresser & McKee (CDM) to perform a Remedial Investigation/Feasibility Study (RI/FS) at the Property. The RI/FS was completed in two separate phases in 1994 and 1995. The results of the RI/FS identified VOC contaminated soils in the drainage ditch (discharge area) and VOC contamination in the underlying bedrock aquifer.

In 1995 two concrete lined pits located in a retail store on the Property were identified as containing TCE and 1,2-DCE and the contents were subsequently removed. A soil gas survey was performed at the concrete lined pits and based on this survey the NYSDEC required no further action at this area. Soils in the drainage ditch located on the western portion of the Property were identified as a source area for the VOC contamination to the underlying bedrock aquifer. In addition, sediments carried to the drainage ditch located across Nyack Road were identified as being above the NYSDEC action levels. The on-site drainage ditch and the off-site drainage ditch were identified as environmental areas of concern. Groundwater within the shallow unconsolidated zone and the deeper bedrock aquifer were identified as areas of environmental concern. Groundwater in the shallow unconsolidated zone was identified as moving slowly south-southeast. Petroleum impacts to the shallow groundwater were attributed to the Teplitz auto salvage facility on the adjacent property to the southwest. A plume of contaminated groundwater was identified in the deeper bedrock aquifer and was noted to be moving in a south-southwest direction. NYSDEC concluded that this plume was not the cause of the VOC contamination discovered in the L.A. Woman well. No receptors of the groundwater contamination from the subject were identified in the vicinity.

In March 1996, the NYSDEC presented a selected remedial action for the Property in a ROD. The approved ROD included No Action, i.e. natural attenuation for treatment of the groundwater contamination in the on-site overburden aquifers. The drainage ditch is shallow pathway designed to transport with no known recreational uses. CDM completed a remediation of the sediments by excavating impacted sediments and constructing a temporary streambed in June 1999. Post excavation analysis indicated that the remaining sediments were below NY SCC.

A hot spot excavation and soil removal was performed at the source area (on-site drainage ditch) in June 1999 by CDM. Soils were excavated within and adjacent to the ditch to the zone of saturation, approximately 8-feet below ground surface (bgs). All soils were transported off-site and disposed of at a licensed waste handling facility. Post excavation sample results of 1,100 parts per million (ppm) indicated that a small area of impacted soils approximately 10 by 10-feet by the former discharge pipe location remained in the subsurface soils below the water table. No further remediation activities were carried out at this location by CDM.

Groundwater samples were collected in November 1999 by CDM. TCE was identified in MW-3S, 3I, 6I, 6R, 8DI, 9ID, and 9D at concentrations of 22, 18, 130, 200, 160, 68, and 13,300 ppb, respectively. Based upon the results of the November 1999 post-excavation well sampling, CDM performed a Supplemental Groundwater Investigation from April 19, 2000 to May 25, 2000. The supplemental investigation consisted of the installation of MW-10D and collection of groundwater samples from MW-6I, 6R, 8I, 9I, 9D and 10D. TCE was identified in all samples with concentrations of 56, 25, 200, 33, 5,300 and 3,100 ppb, respectively.

In-Situ Oxidation Technologies, Inc. (ISOTEC) in-situ chemox treatment processes were conducted in November 2002 for the field pilot study, and again in May 2005 for the full-scale treatment program, to remediate subsurface contamination via injection of peroxide and proprietary catalysts, thereby oxidizing contamination using Fenton's Reaction.

In accordance with the November 2004 RAWP, an SSDS was installed in March 2008 to address concerns regarding a potential source of vapor intrusion beneath the building. The results of the diagnostic field pilot test, conducted by EWMA on August 23, 2004, provided a basis to determine the locations and number of extraction points necessary to achieve adequate depressurization underneath the entire building. Upon instructions from the property representative, all SSDS installation activities were conducted within the empty warehouse portion of the building.

The impacted media are now either beneath the existing buildings or have been excavated to the groundwater table, a depth of approximately 8-feet bgs in the former drainage ditch (CDM Supplemental Investigation Report, July 2000). The remaining area of the drainage ditch and exposed soils onsite have been covered with either an asphalt parking lot, landscaping, or buildings. The storm water that flowed from the site through an open ditch has been diverted through underground storm sewers to the off-site surface water body. However, impacted subsurface soil remains on site and constitutes a potential point of exposure through vapor intrusion, as discussed later.

Impacted groundwater at the site can be found within the overlying unconsolidated sediments and within the underlying bedrock. The groundwater is found at depths of 8-feet or greater at the site. No wells, either potable or industrial exist at the site. No groundwater discharge points on the site. Groundwater, and dissolved contaminants associated with the groundwater, flows in the subsurface toward the south-southwest. The contamination appears to be within the unconsolidated sediments, which are not considered a major aquifer in the area, and within the deep underlying bedrock aquifer, which is utilized as a potable water source off-site. Therefore, there are no points of exposure related to the on-site groundwater, except through potential vapor intrusion, as discussed later.

Long-term monitored natural attenuation (MNA) of groundwater within the overburden aquifers is currently being utilized, relying on natural attenuation processes to achieve applicable groundwater remediation standards.

Site activities have been documented in the following reports; Final Remediation Report prepared by CDM dated February 2000; a Supplemental Investigation Report prepared by CDM dated July 2000; five Voluntary Cleanup Program Remedial Action Workplan-Groundwater prepared by EWMA dated June 18, 2002, February 2003, July 2003, November 2004 and December 2004; an Environmental Status Update prepared by EWMA dated June 7, 2013; a Voluntary Cleanup Program Remedial Action Workplan prepared by EWMA dated August 2013, a Voluntary Cleanup Program RAW Addendum prepared by EWMA dated November 25, 2013; two Voluntary Cleanup Program Revised RI Progress Report prepared by EWMA dated May 4, 2015 and August 16, 2015; a Voluntary Cleanup Program revised Supplemental RI Progress Report prepared by EWMA dated August 26, 2015; a Site Management Plan prepared by EWMA dated June 2018; Field Sampling Plan prepared by EWMA dated November 2018; Annual Inspection Report prepared by EWMA dated January 24, 2019.

The key components of the remedy were excavation with end-point soil sampling, backfilling with certified clean fill, groundwater sampling and annual engineering inspections, engineering controls that include a cover system, a sub-slab depressurization system, and compliance with the SMP.

The goals of the remedy were:

1. Reducing, controlling, or eliminating the contamination present within the on-site soils and sediments;
2. Eliminating the threat to surface waters by remediating any contaminated sediments and soils on-site;
3. Eliminating the potential for direct human or animal contact with contaminated soils, sediments and groundwater on-site; and
4. Mitigating continuing impacts to contaminated groundwater.

In summary, during the July 2020 through November 2022 PRR period, the following deliverables were submitted and the following activities occurred:

- A site-wide inspection was conducted in September 2022 and the findings confirmed that IC/ECs, including the sub-slab vapor intrusion (VIC) system, are performing properly and remain effective;
- Sampling of monitoring wells MW-10D, 11D and 13D in June 2022, (Section 4.1.3); and
- This PRR was prepared for the July 2020 – November 2022 period.

Refer to **Figure 2** for the current monitoring well locations as of the date of this PRR.

The sub-slab vapor mitigation control system (installed beneath the building) was subjected to quality assurance testing and remains effective. The annual inspection results are provided in **Appendix 2**.

## 2.3 Remedy Performance, Effectiveness and Protectiveness

As of the date of this PRR submittal, the remedy has been performed as required and has been effective and protective in achieving the remedy goals as follows:

1. Reducing, controlling, or eliminating the contamination present within the on-site soils and sediments;
2. Eliminating the threat to surface waters by remediating any contaminated sediments and soils on-site;
3. Eliminating the potential for direct human or animal contact with contaminated soils, sediments and groundwater on-site; and
4. Mitigating continuing impacts to contaminated groundwater.

Supportive data is provided in the figures and appendices to this PRR for the purpose of demonstrating the remedy performance, effectiveness and protectiveness.

# 3. IC/EC Plan Compliance Report

## 3.1 IC/EC Requirements and Compliance

To address residual contaminated soil, groundwater and soil vapor beneath the Site, the SMP provided for several ECs and ICs to protect human health and the environment. ECs include a cover system and a Sub-Slab Depressurization System (SSDS). ICs include implementation, maintenance and monitoring of all ECs, compliance with the SMP, permitted uses of the property, limited disturbance of the remaining impacts in the subsurface, inspections, media monitoring, and reporting of data.

### *3.1.1 Cover System*

Exposure to remaining contamination in groundwater at the site is prevented by asphalt pavement, concrete-covered sidewalks, and concrete building slabs. The cover system is a permanent EC designed to prevent exposure to soil contamination.

The cover system is inspected annually by a licensed professional engineer, including a Site walk, visual examination of cover integrity, and interviews with personnel familiar with Site operations. A summary of the annual inspection results is provided in **Appendix 2**. See Section 4.1.1 below, for a discussion of the recent inspection of the composite cover system.

### *3.1.2 Sub-Slab Depressurization System (SSDS)*

In accordance with the November 2004 RAWP, an SSDS was installed in March 2008 to address concerns regarding a potential source of vapor intrusion beneath the building.

The results of the diagnostic field pilot test, conducted by EWMA on August 23, 2004, provided a basis to determine the locations and number of extraction points necessary to achieve adequate depressurization underneath the entire building. Upon instructions from the property representative, all SSDS installation activities were conducted within the empty warehouse portion of the building.

The following provides a summary of the SSDS design:
- Two (2) separate SSDSs are installed along the western and eastern portions of the building and connected to vacuum blower #1 and #2, respectively, which are located on the roof of the building;

• Each SSDS consists of a 4-inch PVC main header pipe installed along the ceiling in order to connect all extraction points to the header pipe, and extending to the outside of the building into the vacuum blower;

• A total of nine (9) extraction points were connected to the western SSDS and eight (8) extraction points were connected to the eastern SSDS, each via 2-inch PVC connecting pipes extending upwards from the extraction points along the walls and corner and along the ceiling to the 4-inch PVC main header pipe;

• Extraction point connecter pipes and main header inlets to the vacuum blowers were equipped with ball valves and sampling ports in order to optimize the vacuum and flow through all points, and collect flow readings and air samples, as necessary;

• The vacuum blowers are 7.5 HP Regenerative Blowers capable of providing a total flow rate of 250 to 300 CFM.

Vapor intrusion controls beneath the subject building slab and above-slab mechanical portion of the system (piping, suction blowers, and valves) have been installed, and the SSDS is currently operational. See **Appendix 2** for a discussion of the recent inspection of the SSDS. Vapor intrusion controls will be integrated with all future building construction at the Site.

### *3.1.3 Institutional and Engineering Controls*

- Cover System
- Sub-Slab Depressurization System

These ICs/ECs remain in place and are being implemented at the Site and annual testing was completed during this PRR period. Currently, the building is occupied and the VIC system is operating in accordance with the SMP.

## 3.2 IC/EC Certification

The required IC/EC Certifications are provided in **Appendix 1** of this PRR.

# 4. Monitoring Plan Compliance Report

## 4.1 Components of the Monitoring Plan

The components of the monitoring plan are set forth below. A summary of the monitoring efforts specific to each monitoring plan component is provided below, along with the location of the associated monitoring data within this PRR:

- *Cover System* – The cover was monitored visually for integrity during an annual inspection in May 2021 (see **Appendix 2** for annual inspection results);
- *Sub-Slab Depressurization System* – The Sub-Slab Depressurization System (SSDS) is currently operating. Monitoring is ongoing and inspections are conducted on an annual basis to ensure proper functionality (see **Appendix 2** for annual inspection results);
- *Sampling of Monitoring Wells* – Groundwater monitoring wells associated with natural attenuation (MW-10D, 11D and 13D) were sampled in June 2022.

### *4.1.1 Cover System Monitoring*

The quality and integrity of the cover system was inspected (monitored) annually and deemed intact and protective by the EWMA Certifying Engineer of Record.

### *4.1.2 Vapor Intrusion Control System Monitoring*

The construction and effectiveness of the vapor intrusion control system installed beneath the building was inspected by qualified EWMA field technicians to ensure proper functionality. The system components and monitoring points have been inspected in September 2022, vacuum and air flow measurements confirm that the system is operating in conformance with the design requirements (see **Appendix 2 and Figure 3**), and the system has been certified.

### *4.1.3 Groundwater Monitoring*

On June 1 and 9, 2022, EWMA collected ground water samples from on-site monitoring wells MW-10D, MW-11D, and MW-13D for TCL VO+15 laboratory analysis. **Figure 2** depicts the wells at the Site and **Table 1** illustrates the sample results. The ground water sampling activities were conducted in accordance with the ground water monitoring program approved by the NYSDEC.

The monitoring wells were purged utilizing a Grundfos Redi-Flow 2-inch diameter submersible pump equipped with a variable speed control box via three-volume purge rate to purge the monitoring wells. The Redi-Flow pump and electrical line was field decontaminated between

each well in accordance with pump decontamination procedures. No sheen or free phase product was observed and no odors were detected during the June 2022 ground water sampling event. The field sampling observations are summarized on the Purge Guide provided in **Appendix 4**.

As illustrated on **Table 1**, analytical results for MW-11D were all reported as non-detect or below the New York State Ambient Water Quality Standards and Guidance Values. MW-10D reported cis-1,2-dichloroethene (cis-1,2-DCE) and trichloroethene (TCE) was detected above the New York State Ambient Water Quality Standard (AWQS) of 5 ug/l. MW-13D reported concentrations of cis-1,2-DCE, TCE, vinyl chloride and tetrachloroethene (PCE) above the New York State Ambient Water Quality Standards and Guidance Values. The laboratory analytical packages are provided in **Appendix 3**.

As illustrated on the Historic Ground Water Results Table (**Table 2**), historically, MW-10D, MW-11D, and MW-13D have had fluctuating chlorinated solvent concentrations which is consistent with the June 2022 sampling event.

## 4.2 Summary of Monitoring Completed During the Reporting Period

The monitoring during the reporting period was completed as set forth above. The monitoring data is presented in the figures and appendices of this PRR.

## 4.3 Comparison with Remedial Objectives

Based on the monitoring data collected during the reporting period and presented in the figures and appendices of this PRR, the remedial objectives are being met. The cover system is effectively preventing exposure to residual contamination; and the VIC system is maintaining sub-slab de-pressurization and operating in conformance with the design and as required by NYSDOH and NYSDEC.

## 4.4 Monitoring Deficiencies

There are currently no known monitoring deficiencies. During this PRR reporting period, it was found that the SSDS was damaged and not operational. Repairs were completed in September 2022 and it is confirmed that the SSDS had been repaired and was now fully operational. Additionally, eight new permanent sub-slab monitoring points were installed on September 22 and 23, 2022.

## 4.5 Conclusions

All monitoring was performed in accordance with the NYSDEC approved SMP and pursuant to subsequent work plans and monitoring enhancements that have been approved by the NYSDEC.

# 5. Operation and Maintenance Plan (O&M) Compliance Report

## 5.1 Components of the O&M Plan

The components of the O&M Plan include inspections and completion of inspection forms.

### *5.1.1 Summary of O&M Activities and Data Collected During the Reporting Period*

The inspection forms and records that were generated for the Site during the reporting period include the following:

- Annual Inspection of Cover System and VIC System (**Appendix 2**).

### *5.1.2 O&M Deficiencies*

EWMA conducted initial site inspections on June 2 and 9, 2022 and found that the SSDS was damaged and not operational. Repairs were completed in September 2022. EWMA returned to conduct the annual site inspection on September 22, 2022 and confirmed that the SSDS had been repaired and was now fully operational. Additionally, eight new permanent sub-slab monitoring points were installed on September 22 and 23, 2022.

## 5.2 Conclusions and Recommendations for Improvements

**Project Review Report Schedule** – The next PRR will be prepared to cover the November 2022 through November 2023 reporting period.

**Site Management Plan Implementation –** Based on the continued need for institutional controls and engineering controls, it is recommended that the SMP remain in effect.

# 6. Overall PRR Conclusions and Recommendations

## 6.1 Compliance with SMP

As of the date of this PRR, the remedy has been performed as required under the SMP and has been effective and protective in achieving the remedy goals as follows:

1. Reducing, controlling, or eliminating the contamination present within the on-site soils and sediments;
2. Eliminating the threat to surface waters by remediating any contaminated sediments and soils on-site;
3. Eliminating the potential for direct human or animal contact with contaminated soils, sediments and groundwater on-site; and
4. Mitigating continuing impacts to contaminated groundwater.

Supportive data is provided in the tables, figures and appendices to this PRR for the purpose of demonstrating the remedy performance, effectiveness and protectiveness.

## 6.2 Performance and Effectiveness of the Remedy

The performance and effectiveness of the remedy are in conformance with the project objectives.

## 6.3 Future PRR Submittals

The next PRR to be prepared and submitted will cover the period from November 2022 through November 2023.

# Periodic Review Report – Review Period July 2021 to November 2022

*Property Known As:*

**Swivelier Company**
**33 Route 304**
**Nanuet, Rockland County, New York 10954**
**NYSDEC Site Nos. 3-44-036 & V00520**
**EWMA Project No. 202530**

Table 1 – June 2022 Groundwater Results Summary

November 2022

**Table 1**
**Groundwater Results Summary**
**June 1 and 9, 2022**
**Swivelier Company**
**33 Route 304, Nanuet, Rockland County, NY**
**EWMA Project No. 202530**

| Sample #: / Field ID: / Lab ID: / Date Sampled: / Depth(ft): | CAS | TOGs - Table 1 Ambient Water Quality Standards And Guidance Values (ug/L) | MW10D 03403-002 06/09/2022 | | | | MW11D 03403-001 06/09/2022 | | | | MW-13D-060122 03213-001 06/01/2022 | | | | FB-060122 03213-002 06/01/2022 | | | | FIELD BLANK 03403-003 06/09/2022 | | | | TB-060122 03213-003 06/01/2022 | | | | TRIP BLANK 03403-004 06/09/2022 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatiles (ug/L)** | | | **Conc** | **Q** | RL | MDL | Conc | Q | RL | MDL | Conc | Q | RL | MDL | Conc | Q | RL | MDL | Conc | Q | RL | MDL | Conc | Q | RL | MDL | Conc | Q | RL | MDL |
| Dichlorodifluoromethane | 75-71-8 | **5** | ND | | 50.0 | 27.6 | ND | | 1.00 | 0.552 | ND | | 100 | 55.2 | ND | | 1.00 | 0.552 | ND | | 1.00 | 0.552 | ND | | 1.00 | 0.552 | ND | | 1.00 | 0.552 |
| Chloromethane | 74-87-3 | **5** | ND | | 25.0 | 15.5 | ND | | 0.500 | 0.309 | ND | | 50.0 | 30.9 | ND | | 0.500 | 0.309 | ND | | 0.500 | 0.309 | ND | | 0.500 | 0.309 | ND | | 0.500 | 0.309 |
| Vinyl chloride | 75-01-4 | **2** | ND | | **50.0** | **17.6** | ND | | 1.00 | 0.352 | **43.3** | DJ | **100** | **35.2** | ND | | 1.00 | 0.352 | ND | | 1.00 | 0.352 | ND | | 1.00 | 0.352 | ND | | 1.00 | 0.352 |
| Bromomethane | 74-83-9 | **5** | ND | | **50.0** | **19.3** | ND | | 1.00 | 0.386 | ND | | **100** | **38.6** | ND | | 1.00 | 0.386 | ND | | 1.00 | 0.386 | ND | | 1.00 | 0.386 | ND | | 1.00 | 0.386 |
| Chloroethane | 75-00-3 | **5** | ND | | **25.0** | **16.2** | ND | | 0.500 | 0.324 | ND | | **50.0** | **32.4** | ND | | 0.500 | 0.324 | ND | | 0.500 | 0.324 | ND | | 0.500 | 0.324 | ND | | 0.500 | 0.324 |
| Trichlorofluoromethane | 75-69-4 | **5** | ND | | 50.0 | 25.2 | ND | | 1.00 | 0.503 | ND | | 100 | 50.3 | ND | | 1.00 | 0.503 | ND | | 1.00 | 0.503 | ND | | 1.00 | 0.503 | ND | | 1.00 | 0.503 |
| 1,1-Dichloroethene | 75-35-4 | **0.07** | ND | | **25.0** | **18.2** | ND | | 0.500 | 0.363 | ND | | **50.0** | **36.3** | ND | | 0.500 | 0.363 | ND | | 0.500 | 0.363 | ND | | 0.500 | 0.363 | ND | | 0.500 | 0.363 |
| Acetone | 67-64-1 | **NS** | ND | | 100 | 42.4 | ND | | 2.00 | 0.847 | ND | | 200 | 84.7 | ND | | 2.00 | 0.847 | ND | | 2.00 | 0.847 | ND | | 2.00 | 0.847 | ND | | 2.00 | 0.847 |
| Carbon disulfide | 75-15-0 | **NS** | ND | | 50.0 | 20.2 | ND | | 1.00 | 0.403 | ND | | 100 | 40.3 | ND | | 1.00 | 0.403 | ND | | 1.00 | 0.403 | ND | | 1.00 | 0.403 | ND | | 1.00 | 0.403 |
| Methylene chloride | 75-09-2 | **5** | ND | | **50.0** | **25.0** | ND | | 1.00 | 0.500 | ND | | **100** | **50.0** | ND | | 1.00 | 0.500 | ND | | 1.00 | 0.500 | ND | | 1.00 | 0.500 | ND | | 1.00 | 0.500 |
| trans-1,2-Dichloroethene | 156-60-5 | **5** | ND | | 25.0 | 18.6 | ND | | 0.500 | 0.372 | ND | | 50.0 | 37.2 | ND | | 0.500 | 0.372 | ND | | 0.500 | 0.372 | ND | | 0.500 | 0.372 | ND | | 0.500 | 0.372 |
| Methyl tert-butyl ether (MTBE) | 1634-04-4 | **NS** | ND | | 25.0 | 12.3 | 0.330 | J | 0.500 | 0.245 | ND | | 50.0 | 24.5 | ND | | 0.500 | 0.245 | ND | | 0.500 | 0.245 | ND | | 0.500 | 0.245 | ND | | 0.500 | 0.245 |
| 1,1-Dichloroethane | 75-34-3 | **5** | ND | | 25.0 | 14.3 | ND | | 0.500 | 0.285 | ND | | 50.0 | 28.5 | ND | | 0.500 | 0.285 | ND | | 0.500 | 0.285 | ND | | 0.500 | 0.285 | ND | | 0.500 | 0.285 |
| cis-1,2-Dichloroethene | 156-59-2 | **5** | **2990** | D | 25.0 | 13.9 | 1.16 | | 0.500 | 0.277 | **4550** | D | 50.0 | 27.7 | ND | | 0.500 | 0.277 | ND | | 0.500 | 0.277 | ND | | 0.500 | 0.277 | ND | | 0.500 | 0.277 |
| 2-Butanone (MEK) | 78-93-3 | **NS** | ND | | 100 | 40.1 | ND | | 2.00 | 0.802 | ND | | 200 | 80.2 | ND | | 2.00 | 0.802 | ND | | 2.00 | 0.802 | ND | | 2.00 | 0.802 | ND | | 2.00 | 0.802 |
| Bromochloromethane | 74-97-5 | **NS** | ND | | 50.0 | 19.0 | ND | | 1.00 | 0.379 | ND | | 100 | 37.9 | ND | | 1.00 | 0.379 | ND | | 1.00 | 0.379 | ND | | 1.00 | 0.379 | ND | | 1.00 | 0.379 |
| Chloroform | 67-66-3 | **7** | ND | | 25.0 | 14.3 | ND | | 0.500 | 0.285 | ND | | 50.0 | 28.5 | ND | | 0.500 | 0.285 | ND | | 0.500 | 0.285 | ND | | 0.500 | 0.285 | ND | | 0.500 | 0.285 |
| 1,1,1-Trichloroethane | 71-55-6 | **5** | ND | | 25.0 | 19.1 | ND | | 0.500 | 0.381 | ND | | **50.0** | **38.1** | ND | | 0.500 | 0.381 | ND | | 0.500 | 0.381 | ND | | 0.500 | 0.381 | ND | | 0.500 | 0.381 |
| Carbon tetrachloride | 56-23-5 | **0.4** | ND | | **25.0** | **17.5** | ND | | 0.500 | 0.349 | ND | | **50.0** | **34.9** | ND | | 0.500 | 0.349 | ND | | 0.500 | 0.349 | ND | | 0.500 | 0.349 | ND | | 0.500 | 0.349 |
| 1,2-Dichloroethane (EDC) | 107-06-2 | **0.6** | ND | | **25.0** | **13.7** | ND | | 0.500 | 0.273 | ND | | **50.0** | **27.3** | ND | | 0.500 | 0.273 | ND | | 0.500 | 0.273 | ND | | 0.500 | 0.273 | ND | | 0.500 | 0.273 |
| Benzene | 71-43-2 | **NS** | ND | | 25.0 | 13.5 | ND | | 0.500 | 0.270 | ND | | 50.0 | 27.0 | ND | | 0.500 | 0.270 | ND | | 0.500 | 0.270 | ND | | 0.500 | 0.270 | ND | | 0.500 | 0.270 |
| Trichloroethene | 79-01-6 | **5** | **6260** | D | **25.0** | **17.4** | 1.47 | | 0.500 | 0.347 | **9980** | D | **50.0** | **34.7** | ND | | 0.500 | 0.347 | ND | | 0.500 | 0.347 | ND | | 0.500 | 0.347 | ND | | 0.500 | 0.347 |
| 1,2-Dichloropropane | 78-87-5 | **1** | ND | | **25.0** | **13.6** | ND | | 0.500 | 0.272 | ND | | **50.0** | **27.2** | ND | | 0.500 | 0.272 | ND | | 0.500 | 0.272 | ND | | 0.500 | 0.272 | ND | | 0.500 | 0.272 |
| 1,4-Dioxane | 123-91-1 | **NS** | ND | | 5000 | 2560 | ND | | 100 | 51.1 | ND | | 10000 | 5110 | ND | | 100 | 51.1 | ND | | 100 | 51.1 | ND | | 100 | 51.1 | ND | | 100 | 51.1 |
| Bromodichloromethane | 75-27-4 | **50** | ND | | 25.0 | 12.9 | ND | | 0.500 | 0.258 | ND | | 50.0 | 25.8 | ND | | 0.500 | 0.258 | ND | | 0.500 | 0.258 | ND | | 0.500 | 0.258 | ND | | 0.500 | 0.258 |
| cis-1,3-Dichloropropene | 10061-01-5 | **NS** | ND | | 50.0 | 13.2 | ND | | 1.00 | 0.264 | ND | | 100 | 26.4 | ND | | 1.00 | 0.264 | ND | | 1.00 | 0.264 | ND | | 1.00 | 0.264 | ND | | 1.00 | 0.264 |
| 4-Methyl-2-pentanone (MIBK) | 108-10-1 | **NS** | ND | | 50.0 | 30.6 | ND | | 1.00 | 0.611 | ND | | 100 | 61.1 | ND | | 1.00 | 0.611 | ND | | 1.00 | 0.611 | ND | | 1.00 | 0.611 | ND | | 1.00 | 0.611 |
| Toluene | 108-88-3 | **NS** | ND | | 25.0 | 15.1 | ND | | 0.500 | 0.302 | ND | | 50.0 | 30.2 | ND | | 0.500 | 0.302 | ND | | 0.500 | 0.302 | ND | | 0.500 | 0.302 | ND | | 0.500 | 0.302 |
| trans-1,3-Dichloropropene | 10061-02-6 | **NS** | ND | | 50.0 | 16.5 | ND | | 1.00 | 0.330 | ND | | 100 | 33.0 | ND | | 1.00 | 0.330 | ND | | 1.00 | 0.330 | ND | | 1.00 | 0.330 | ND | | 1.00 | 0.330 |
| 1,1,2-Trichloroethane | 79-00-5 | **1** | ND | | **25.0** | **15.7** | ND | | 0.500 | 0.313 | ND | | **50.0** | **31.3** | ND | | 0.500 | 0.313 | ND | | 0.500 | 0.313 | ND | | 0.500 | 0.313 | ND | | 0.500 | 0.313 |
| Tetrachloroethene | 127-18-4 | **0.7** | **27.8** | D | **25.0** | **18.3** | ND | | 0.500 | 0.365 | **42.5** | DJ | **50.0** | **36.5** | ND | | 0.500 | 0.365 | ND | | 0.500 | 0.365 | ND | | 0.500 | 0.365 | ND | | 0.500 | 0.365 |
| 2-Hexanone | 591-78-6 | **NS** | ND | | 50.0 | 40.9 | ND | | 1.00 | 0.818 | ND | | 100 | 81.8 | ND | | 1.00 | 0.818 | ND | | 1.00 | 0.818 | ND | | 1.00 | 0.818 | ND | | 1.00 | 0.818 |
| Dibromochloromethane | 124-48-1 | **50** | ND | | 25.0 | 13.2 | ND | | 0.500 | 0.263 | ND | | 50.0 | 26.3 | ND | | 0.500 | 0.263 | ND | | 0.500 | 0.263 | ND | | 0.500 | 0.263 | ND | | 0.500 | 0.263 |
| 1,2-Dibromoethane (EDB) | 106-93-4 | **NS** | ND | | 25.0 | 14.5 | ND | | 0.500 | 0.289 | ND | | 50.0 | 28.9 | ND | | 0.500 | 0.289 | ND | | 0.500 | 0.289 | ND | | 0.500 | 0.289 | ND | | 0.500 | 0.289 |
| Chlorobenzene | 108-90-7 | **5** | ND | | 25.0 | 15.2 | ND | | 0.500 | 0.304 | ND | | 50.0 | 30.4 | ND | | 0.500 | 0.304 | ND | | 0.500 | 0.304 | ND | | 0.500 | 0.304 | ND | | 0.500 | 0.304 |
| Ethylbenzene | 100-41-4 | **NS** | ND | | 25.0 | 15.7 | ND | | 0.500 | 0.313 | ND | | 50.0 | 31.3 | ND | | 0.500 | 0.313 | ND | | 0.500 | 0.313 | ND | | 0.500 | 0.313 | ND | | 0.500 | 0.313 |
| Total Xylenes | 1330-20-7 | **NS** | ND | | 50.0 | 17.3 | ND | | 1.00 | 0.345 | ND | | 100 | 34.5 | ND | | 1.00 | 0.345 | ND | | 1.00 | 0.345 | ND | | 1.00 | 0.345 | ND | | 1.00 | 0.345 |
| Styrene | 100-42-5 | **NS** | ND | | 50.0 | 15.9 | ND | | 1.00 | 0.317 | ND | | 50.0 | 31.7 | ND | | 0.500 | 0.317 | ND | | 1.00 | 0.317 | ND | | 0.500 | 0.317 | ND | | 1.00 | 0.317 |
| Bromoform | 75-25-2 | **50** | ND | | 25.0 | 16.4 | ND | | 0.500 | 0.328 | ND | | 50.0 | 32.8 | ND | | 0.500 | 0.328 | ND | | 0.500 | 0.328 | ND | | 0.500 | 0.328 | ND | | 0.500 | 0.328 |
| Isopropylbenzene | 98-82-8 | **NS** | ND | | 50.0 | 16.6 | ND | | 1.00 | 0.332 | ND | | 50.0 | 33.2 | ND | | 0.500 | 0.332 | ND | | 1.00 | 0.332 | ND | | 0.500 | 0.332 | ND | | 1.00 | 0.332 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | **0.2** | ND | | 50.0 | 14.2 | ND | | 1.00 | 0.284 | ND | | 100 | 28.4 | ND | | 1.00 | 0.284 | ND | | 1.00 | 0.284 | ND | | 1.00 | 0.284 | ND | | 1.00 | 0.284 |
| 1,3-Dichlorobenzene | 541-73-1 | **3** | ND | | 25.0 | 19.3 | ND | | 0.500 | 0.386 | ND | | 50.0 | 38.6 | ND | | 0.500 | 0.386 | ND | | 0.500 | 0.386 | ND | | 0.500 | 0.386 | ND | | 0.500 | 0.386 |
| 1,4-Dichlorobenzene | 106-46-7 | **3** | ND | | 25.0 | 19.9 | ND | | 0.500 | 0.397 | ND | | 50.0 | 39.7 | ND | | 0.500 | 0.397 | ND | | 0.500 | 0.397 | ND | | 0.500 | 0.397 | ND | | 0.500 | 0.397 |
| 1,2-Dichlorobenzene | 95-50-1 | **3** | ND | | 25.0 | 17.7 | ND | | 0.500 | 0.354 | **101** | D | 50.0 | 35.4 | ND | | 0.500 | 0.354 | ND | | 0.500 | 0.354 | ND | | 0.500 | 0.354 | ND | | 0.500 | 0.354 |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | **NS** | ND | | 50.0 | 20.5 | ND | | 1.00 | 0.410 | ND | | 100 | 41.0 | ND | | 1.00 | 0.410 | ND | | 1.00 | 0.410 | ND | | 1.00 | 0.410 | ND | | 1.00 | 0.410 |
| 1,2,4-Trichlorobenzene | 120-82-1 | **NS** | ND | | 50.0 | 17.9 | ND | | 1.00 | 0.358 | ND | | 100 | 35.8 | ND | | 1.00 | 0.358 | ND | | 1.00 | 0.358 | ND | | 1.00 | 0.358 | ND | | 1.00 | 0.358 |
| 1,2,3-Trichlorobenzene | 87-61-6 | **NS** | ND | | 50.0 | 20.3 | ND | | 1.00 | 0.406 | ND | | 100 | 40.6 | ND | | 1.00 | 0.406 | ND | | 1.00 | 0.406 | ND | | 1.00 | 0.406 | ND | | 1.00 | 0.406 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 76-13-1 | **NS** | ND | | 50.0 | 26.9 | ND | | 1.00 | 0.538 | ND | | 100 | 53.8 | ND | | 1.00 | 0.538 | ND | | 1.00 | 0.538 | ND | | 1.00 | 0.538 | ND | | 1.00 | 0.538 |
| Methyl acetate | 79-20-9 | **NS** | ND | | 25.0 | 17.3 | ND | | 0.500 | 0.345 | ND | | 50.0 | 34.5 | ND | | 0.500 | 0.345 | ND | | 0.500 | 0.345 | ND | | 0.500 | 0.345 | ND | | 0.500 | 0.345 |
| Cyclohexane | 110-82-7 | **NS** | ND | | 50.0 | 23.5 | ND | | 1.00 | 0.469 | ND | | 100 | 46.9 | ND | | 1.00 | 0.469 | ND | | 1.00 | 0.469 | ND | | 1.00 | 0.469 | ND | | 1.00 | 0.469 |
| Methylcyclohexane | 108-87-2 | **NS** | ND | | 50.0 | 21.1 | ND | | 1.00 | 0.421 | ND | | 100 | 42.1 | ND | | 1.00 | 0.421 | ND | | 1.00 | 0.421 | ND | | 1.00 | 0.421 | ND | | 1.00 | 0.421 |
| 1,3-Dichloropropene (cis- and trans-) | 542-75-6 | **NS** | ND | | 50.0 | 13.2 | ND | | 1.00 | 0.264 | ND | | 100 | 26.4 | ND | | 1.00 | 0.264 | ND | | 1.00 | 0.264 | ND | | 1.00 | 0.264 | ND | | 1.00 | 0.264 |
| TOTAL VO's: | | **NS** | 9280 | D | | NA | 2.96 | J | | NA | 14700 | DJ | | NA | ND | | | NA | ND | | | NA | ND | | | NA | ND | | | NA |
| TOTAL TIC's: | | **NS** | ND | | | NA | ND | | | NA | ND | | | NA | ND | | | NA | 7.70 | JN | | NA | ND | | | NA | ND | | | NA |
| TOTAL VO's & TIC's: | | **NS** | 9280 | D | | NA | 2.96 | J | | NA | 14700 | DJ | | NA | ND | | | NA | 7.70 | | | NA | ND | | | NA | ND | | | NA |

New York State Division of Water Technical and Operational Guidance Series (TOGS), Issued October 22, 1993, Reissued June 1998.

| | |
|---|---|
| **BOLD Conc** | Indicates a concentration that exceeds the applicable criteria. |
| **BOLD RL** | Indicates RL that exceeds applicable criteria. |
| **BOLD MDL** | Indicates MDL that exceeds applicable criteria. |

NS = No Standard Available
ND = Analyzed for but Not Detected at the MDL
J = Indicates an estimated value either when the concentration in the sample is greater than MDL and less than RL, or for qualification of TICs
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
N = Presumptive evidence of a compound from the use of GC/MS library search.

# Periodic Review Report – Review Period July 2021 to November 2022

*Property Known As:*

**Swivelier Company**
**33 Route 304**
**Nanuet, Rockland County, New York 10954**
**NYSDEC Site Nos. 3-44-036 & V00520**
**EWMA Project No. 202530**

Table 2 – Historical Groundwater Results Summary

November 2022

**Table 2 - Historic Groundwater Results**
**Former Swivelier Site**
**Route 304, Nanuet NY**
**EWMA Project No. 205548**

| Well Information (ft.) | Sampling Date | Acetone | Vinyl Chloride | Chloroethane | Chloroform | cis-1,2-Dichloroethene | trans-1,2-Dichloroethene | 2-Butanone | Methyl tert-butyl ether (MTBE) | Benzene | Trichloroethene | Bromodichloromethane | Tetrachloroethene | 1,4-Dichlorobenzene | 1,2-Dichlorobenzene | Toluene | 1,1-Dichloroethene | TOTAL VO's: | TOTAL TIC's: | TOTAL VO's & TIC's: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TOGS 1.1.1 GW STANDARDS GA CLASS** | | **50*** | **2** | **5** | **7** | **5** | **5** | **50*** | **NS** | **1** | **5** | **50*** | **5** | **3** | **3** | **5** | **5** | **NS** | **NS** | **NS** |
| **MW-10D** | 9/2/2005 | ND | ND | ND | ND | NA | ND | ND | NA | ND | **249** | ND | ND | ND | **2.03** | ND | ND | 262 | 97 | 359 |
| | 12/21/2005 | ND | ND | ND | ND | **4390** | ND | ND | ND | ND | **14500** | ND | ND | ND | ND | ND | ND | 18,900 | ND | 18,900 |
| | 8/9/2006 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **131** | ND | ND | ND | 1.13 | ND | ND | 132 | 44.0 | 176 |
| | 3/14/2007 | 23.4 | ND | ND | ND | ND | **73** | ND | ND | ND | **10900** | ND | **32.6** | **12.9** | **95.7** | ND | ND | 11,100 | NA | NA |
| | 10/16/2007 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **861** | ND | ND | ND | ND | ND | ND | 861 | 232 | 861 |
| | 5/5/2008 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **330** | ND | ND | ND | ND | ND | ND | 330 | 58.0 | 388 |
| | 10/29/2008 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **2920** | ND | ND | ND | ND | ND | ND | 2,920 | 875 | 3,800 |
| | 5/14/2009 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **4260** | ND | ND | ND | ND | ND | ND | 4,260 | 1,800 | 6,060 |
| | 11/10/2009 | ND | ND | ND | ND | **2010** | ND | ND | ND | ND | **5000** | ND | ND | ND | ND | ND | ND | 7,010 | ND | 7,010 |
| | 4/29/2014 | ND | ND | ND | ND | **1720** | **9.6** | ND | ND | ND | **3700** | ND | ND | ND | ND | ND | ND | 5,430 | NA | NA |
| | 10/16/2015 | ND | ND | ND | ND | **1960** | ND | ND | ND | ND | **4420** | ND | ND | ND | ND | ND | ND | 6,380 | NA | NA |
| | 5/18/2017 | ND | ND | ND | ND | **3760** | **29.8** | ND | ND | ND | **7480** | ND | **24.6** | ND | ND | ND | ND | 11,300 | NA | NA |
| | 11/21/2017 | ND | ND | ND | ND | **3620** | ND | ND | ND | ND | **7210** | ND | ND | ND | ND | ND | ND | 10,800 | ND | 10,800 |
| | 11/27/2018 | NA | ND | ND | ND | **2960** | ND | NA | NA | NA | **4950** | ND | ND | ND | ND | NA | ND | 7910 | NA | NA |
| | 6/9/2022 | ND | ND | ND | ND | **2990** | ND | ND | ND | ND | **6260** | ND | **27.8** | ND | ND | ND | ND | 9280 | ND | 9280 |
| **MW-11D** | 11/19/2002 | ND | ND | ND | ND | **91** | ND | ND | ND | ND | **617** | ND | 4.24 | 2.12 | **9.4** | 2.66 | ND | 635 | 91 | 726 |
| | 9/2/2005 | ND | ND | ND | ND | NA | ND | ND | NA | ND | **6.86** | ND | ND | ND | ND | ND | ND | 6.86 | 27.8 | 34.7 |
| | 12/21/2005 | ND | ND | ND | ND | **13.6** | ND | ND | ND | ND | **10.9** | ND | ND | ND | ND | ND | ND | 24.5 | 6.8 | 31.3 |
| | 8/9/2006 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 2.82 | ND | ND | ND | ND | ND | ND | 2.82 | 201 | 204 |
| | 3/14/2007 | 11.3 | ND | ND | ND | ND | ND | 13.0 | ND | ND | **8.72** | ND | ND | ND | ND | ND | ND | 33.0 | NA | NA |
| | 10/16/2007 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **25.0** | ND | ND | ND | ND | ND | ND | 25.0 | 99.4 | 124 |
| | 5/5/2008 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **5.29** | ND | ND | ND | ND | ND | ND | 5.29 | ND | 5.29 |
| | 10/29/2008 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **7.62** | ND | ND | ND | ND | ND | ND | 7.62 | ND | 7.62 |
| | 5/14/2009 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **6.00** | ND | ND | ND | ND | ND | ND | 6.00 | ND | 6.00 |
| | 11/10/2009 | ND | ND | ND | ND | 2.07 | ND | ND | ND | ND | **17.0** | ND | ND | ND | ND | ND | ND | 19.1 | ND | 19.1 |
| | 4/29/2014 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 3.37 | ND | ND | ND | ND | ND | ND | 3.37 | NA | NA |
| | 10/16/2015 | ND | ND | ND | ND | 2.69 | ND | ND | ND | ND | 3.08 | ND | ND | ND | ND | ND | ND | 5.77 | NA | NA |
| | 5/18/2017 | ND | ND | ND | ND | 1.95 | ND | ND | ND | ND | 4.64 | ND | ND | ND | ND | ND | ND | 6.59 | NA | NA |
| | 11/21/2017 | ND | ND | ND | ND | 1.72 | ND | ND | 0.575 | ND | 1.84 | ND | ND | ND | ND | ND | ND | 4.14 | ND | 4.14 |
| | 11/28/2018 | NA | ND | ND | ND | 1.58 | ND | NA | NA | NA | **7.79** | ND | ND | ND | ND | NA | ND | 9.37 | NA | NA |
| | 6/9/2022 | ND | ND | ND | ND | 1.16 | ND | ND | 0.33 | ND | 1.47 | ND | ND | ND | ND | ND | ND | 2.96 | ND | 2.96 |
| **MW-12D** | 11/19/2002 | ND | ND | ND | ND | **9.7** | ND | ND | **222** | ND | **9.45** | ND | ND | ND | 0.35 | ND | ND | 9.8 | 232 | 242 |
| | 9/2/2005 | ND | ND | ND | ND | NA | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | 23.1 | 23.1 |
| | 12/21/2005 | ND | ND | ND | ND | 1.59 | ND | ND | ND | ND | 2.09 | ND | ND | ND | ND | ND | ND | 3.68 | 82.2 | 85.9 |
| | 8/9/2006 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 21.1 | 21.1 |
| | 3/13/2007 | 8.05 | ND | ND | ND | ND | ND | ND | ND | ND | 1.14 | ND | ND | ND | ND | ND | ND | 9.19 | NA | NA |
| | 10/16/2007 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | 5/2/2008 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | 10/29/2008 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | 5/14/2009 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.587 | ND | ND | ND | ND | ND | ND | 0.587 | 5.50 | 6.09 |
| | 11/21/2017 | ND | ND | ND | ND | 3.33 | ND | ND | 0.733 | ND | 3.90 | ND | ND | ND | ND | ND | ND | 7.69 | ND | 7.69 |

**Table 2 - Historic Groundwater Results**
**Former Swivelier Site**
**Route 304, Nanuet NY**
**EWMA Project No. 205548**

| Well Information (ft.) | Sampling Date | Acetone | Vinyl Chloride | Chloroethane | Chloroform | cis-1,2-Dichloroethene | trans-1,2-Dichloroethene | 2-Butanone | Methyl tert-butyl ether (MTBE) | Benzene | Trichloroethene | Bromodichloromethane | Tetrachloroethene | 1,4-Dichlorobenzene | 1,2-Dichlorobenzene | Toluene | 1,1-Dichloroethene | TOTAL VO's: | TOTAL TIC's: | TOTAL VO's & TIC's: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TOGS 1.1.1 GW STANDARDS GA CLASS** | | **50*** | **2** | **5** | **7** | **5** | **5** | **50*** | **NS** | **1** | **5** | **50*** | **5** | **3** | **3** | **5** | **5** | **NS** | **NS** | **NS** |
| **MW-13D** | 11/19/2002 | ND | ND | ND | ND | **58.5** | ND | ND | ND | ND | **255** | ND | ND | ND | 2.14 | ND | ND | 257 | 58.5 | 316 |
| | 9/2/2005 | ND | ND | ND | ND | NA | ND | ND | NA | ND | **39.4** | ND | ND | ND | ND | ND | ND | 39 | 5.8 | 45.2 |
| | 12/21/2005 | ND | ND | ND | ND | 1.95 | ND | ND | ND | ND | **9.00** | ND | ND | ND | ND | ND | ND | 11.0 | ND | 11.0 |
| | 8/9/2006 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **32.6** | ND | ND | ND | ND | ND | ND | 32.6 | 9.00 | 41.6 |
| | 3/13/2007 | 2.12 | ND | ND | ND | ND | 1.75 | ND | ND | ND | **208** | ND | 0.722 | ND | 1.57 | ND | ND | 214 | NA | NA |
| | 10/16/2007 | ND | 0.637 | ND | ND | ND | ND | ND | ND | ND | **130** | ND | 0.827 | ND | 1.99 | ND | ND | 133 | 86.2 | 219 |
| | 5/2/2008 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **22.0** | ND | ND | ND | ND | ND | ND | 22.0 | 10.6 | 32.6 |
| | 10/29/2008 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **4120** | ND | ND | ND | ND | ND | ND | 4120 | 1130 | 5250 |
| | 5/14/2009 | ND | ND | ND | ND | ND | ND | ND | ND | ND | **337** | ND | 2 | ND | ND | ND | ND | 339 | 309 | 648 |
| | 11/10/2009 | ND | ND | ND | ND | **24.4** | ND | ND | ND | ND | 1.72 | ND | ND | ND | ND | ND | ND | 26.1 | ND | 26.1 |
| | 4/29/2014 | ND | ND | ND | ND | **15.20** | ND | ND | ND | ND | **36.1** | ND | ND | ND | ND | ND | ND | 51.3 | NA | NA |
| | 10/16/2015 | ND | ND | ND | ND | **1750** | ND | ND | ND | ND | **4300** | ND | ND | ND | ND | ND | ND | 6050 | NA | NA |
| | 5/18/2017 | ND | ND | ND | ND | **1830** | ND | ND | ND | ND | **3910** | ND | **16.2** | ND | ND | ND | ND | 5790 | NA | NA |
| | 11/20/2017 | ND | ND | ND | ND | **517** | ND | ND | ND | ND | **1350** | ND | ND | ND | ND | ND | ND | 1870 | ND | 1870 |
| | 11/29/2018 | NA | ND | ND | ND | **5920** | ND | NA | NA | NA | **13000** | ND | **61** | ND | **143** | NA | ND | 19100 | NA | NA |
| | 6/1/2022 | ND | **43.3** | ND | ND | **4550** | ND | ND | ND | ND | **9980** | ND | **42.5** | ND | **101** | ND | ND | 14700 | ND | 14700 |
| **MW-1R** | 9/2/2005 | ND | ND | ND | ND | NA | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | 12/21/2005 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | 8/9/2006 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 27.2 | 27.2 |
| | 3/13/2007 | 2.76 | ND | ND | ND | ND | ND | ND | ND | ND | 0.770 | ND | ND | ND | ND | ND | ND | 3.53 | NA | NA |
| | 11/22/2017 | ND | ND | ND | ND | ND | ND | ND | 3.26 | ND | 0.531 | ND | ND | ND | ND | ND | ND | 3.79 | ND | 3.79 |
| **MW-6I** | 9/2/2005 | ND | ND | ND | ND | NA | ND | ND | NA | ND | **54.7** | ND | ND | ND | ND | ND | ND | 54.7 | ND | 54.7 |
| | 12/21/2005 | ND | **60.6** | ND | ND | **153** | ND | ND | ND | ND | **24.5** | ND | ND | ND | ND | ND | ND | 238 | ND | 238 |
| | 8/9/2006 | ND | **15.1** | 0.911 | ND | ND | ND | ND | ND | ND | **33.1** | ND | ND | ND | ND | ND | ND | 49.1 | 65.4 | 115 |
| | 3/14/2007 | 4.50 | **4.04** | ND | ND | ND | ND | ND | ND | ND | 1.95 | ND | ND | ND | ND | ND | ND | 10.5 | NA | NA |
| | 11/21/2017 | ND | **121** | ND | ND | **170** | ND | ND | 0.940 | ND | **17.2** | ND | ND | ND | ND | ND | 0.546 | 310 | ND | 310 |
| **MW-6R** | 9/2/2005 | ND | ND | ND | ND | NA | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | 12/21/2005 | ND | ND | ND | ND | **22.8** | ND | ND | ND | ND | **83.6** | ND | ND | ND | ND | ND | ND | 106 | 58.5 | 165 |
| | 8/9/2006 | ND | ND | ND | 0.929 | ND | ND | ND | ND | ND | **8.14** | 0.33 | ND | ND | ND | ND | ND | 9.40 | 55.1 | 64.5 |
| | 3/13/2007 | **186** | ND | ND | 0.776 | ND | ND | 6.88 | ND | **2.12** | **6.54** | ND | ND | ND | ND | ND | ND | 202 | NA | NA |
| | 11/21/2017 | ND | ND | ND | ND | **7.39** | ND | ND | 8.29 | 0.544 | **10.2** | ND | ND | ND | ND | 1.09 | ND | 27.5 | ND | 27.5 |
| **MW-1N** | 11/22/2017 | ND | ND | ND | ND | **5.12** | ND | ND | 1.37 | ND | ND | ND | ND | ND | ND | ND | ND | 6.49 | ND | 6.49 |
| | 11/27/2018 | NA | ND | ND | ND | 3.45 | ND | NA | NA | NA | ND | ND | ND | ND | ND | NA | ND | 3.45 | NA | NA |
| **MW-1S** | 11/22/2017 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| **MW-1SE** | 11/22/2017 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.719 | ND | ND | ND | ND | ND | ND | 0.719 | ND | 0.719 |
| **MW-2I** | 11/22/2017 | ND | ND | ND | ND | ND | ND | ND | 6.43 | ND | ND | ND | ND | ND | ND | ND | ND | 6.43 | ND | 6.43 |
| **MW-2N** | 11/22/2017 | ND | ND | ND | ND | ND | ND | ND | 0.504 | ND | ND | ND | ND | ND | ND | ND | ND | 0.504 | 39.4 | 39.9 |
| | 11/27/2018 | NA | ND | ND | ND | ND | ND | NA | NA | NA | ND | ND | ND | ND | ND | NA | ND | ND | NA | NA |
| **MW-2S** | 11/22/2017 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

**Table 2 - Historic Groundwater Results**
**Former Swivelier Site**
**Route 304, Nanuet NY**
**EWMA Project No. 205548**

| Well Information (ft.) | Sampling Date | Acetone | Vinyl Chloride | Chloroethane | Chloroform | cis-1,2-Dichloroethene | trans-1,2-Dichloroethene | 2-Butanone | Methyl tert-butyl ether (MTBE) | Benzene | Trichloroethene | Bromodichloromethane | Tetrachloroethene | 1,4-Dichlorobenzene | 1,2-Dichlorobenzene | Toluene | 1,1-Dichloroethene | TOTAL VO's: | TOTAL TIC's: | TOTAL VO's & TIC's: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TOGS 1.1.1 GW STANDARDS GA CLASS** | | **50*** | **2** | **5** | **7** | **5** | **5** | **50*** | **NS** | **1** | **5** | **50*** | **5** | **3** | **3** | **5** | **5** | **NS** | **NS** | **NS** |
| **MW-3N** | 11/22/2017 | ND | **2.08** | ND | ND | **9.93** | ND | ND | 2.47 | ND | ND | ND | ND | ND | ND | ND | 1.39 | 15.9 | 131 | 147 |
| | 11/28/2018 | NA | ND | ND | ND | **7.89** | ND | NA | NA | NA | 0.32J | ND | ND | ND | ND | NA | ND | 9.4 J | NA | NA |
| **MW-4I** | 11/22/2017 | ND | ND | ND | ND | ND | ND | ND | 66.6 | ND | ND | ND | ND | ND | ND | ND | ND | 66.6 | 14.7 | 81.3 |
| **MW-4S** | 11/21/2017 | ND | ND | ND | ND | ND | ND | ND | 13.7 | ND | ND | ND | ND | ND | ND | ND | ND | 13.7 | ND | 13.7 |
| **MW-7I** | 11/21/2017 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 1.31 | ND | ND | ND | ND | ND | ND | 1.31 | ND | 1.31 |
| **MW-7SE** | 11/21/2017 | ND | 1.20 | ND | ND | 4.50 | ND | ND | 7.32 | ND | ND | ND | ND | ND | ND | ND | ND | 13.0 | ND | 13.0 |
| **MW-7SW** | 11/21/2017 | ND | ND | ND | ND | ND | ND | ND | 46.2 | ND | ND | ND | ND | ND | ND | ND | ND | 46.2 | ND | 46.2 |
| | 11/28/2018 | NA | ND | ND | ND | ND | ND | NA | NA | NA | ND | ND | ND | ND | ND | NA | ND | ND | NA | NA |
| **MW-8DI** | 11/21/2017 | ND | **17.9** | ND | ND | **1660** | ND | ND | **90.8** | ND | **3780** | ND | ND | ND | ND | ND | ND | 5550 | ND | 5550 |
| | 11/28/2018 | NA | ND | ND | ND | **68.1** | 0.514 | NA | NA | NA | **143** | ND | ND | ND | ND | NA | 0.554 | 212 | NA | NA |
| **MW-9D** | 11/21/2017 | 15.7 | ND | ND | ND | **6.79** | ND | ND | ND | ND | **84.2** | ND | ND | ND | ND | ND | ND | 107 | ND | 107 |
| | 11/28/2018 | NA | ND | ND | ND | **212** | ND | NA | NA | NA | **1080** | ND | ND | ND | ND | NA | ND | 1290 | NA | NA |
| **MW-9DI** | 11/21/2017 | ND | ND | ND | ND | 1.37 | ND | ND | 58.4 | ND | **82.9** | ND | ND | ND | ND | ND | ND | 143 | ND | 143 |
| **MW-9SI** | 11/21/2017 | ND | ND | ND | ND | ND | ND | ND | 3.53 | ND | ND | ND | ND | ND | ND | ND | ND | 3.53 | ND | 3.53 |
| **TW-1** | 4/29/2014 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| **TW-2** | 4/29/2014 | ND | ND | ND | ND | 1.14 | ND | ND | ND | ND | 4.95 | ND | ND | ND | ND | ND | ND | 6.09 | ND | ND |
| **TW-3** | 4/29/2014 | ND | ND | ND | ND | 4.33 | ND | ND | ND | ND | 3.48 | ND | ND | ND | ND | ND | ND | 7.81 | ND | ND |
| **TW-4** | 4/29/2014 | ND | ND | ND | ND | 1.5 | ND | ND | ND | ND | 0.993 | ND | ND | ND | ND | ND | ND | 2.49 | ND | ND |
| **TW-5** | 4/29/2014 | ND | ND | ND | ND | **5.21** | ND | ND | ND | ND | **15** | ND | ND | ND | ND | ND | ND | 20.2 | ND | ND |
| **TW-6** | 4/29/2014 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| **TW-7** | 4/29/2014 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| **TW-8** | 4/29/2014 | ND | ND | ND | ND | 3.61 | ND | ND | ND | ND | 0.48 | ND | ND | ND | ND | ND | ND | 4.09 | ND | ND |

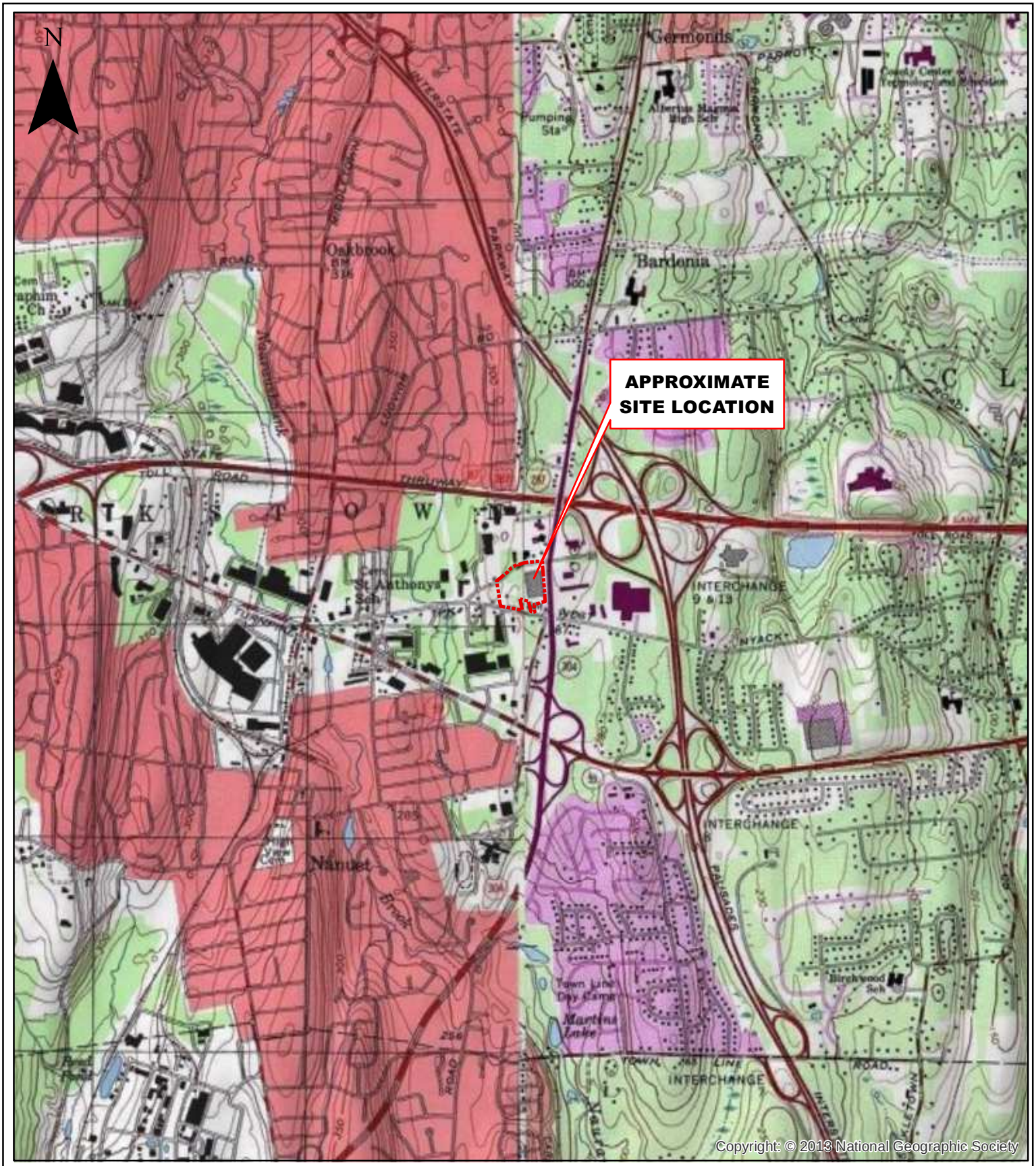
# Periodic Review Report – Review Period July 2021 to November 2022

*Property Known As:*

**Swivelier Company**
**33 Route 304**
**Nanuet, Rockland County, New York 10954**
**NYSDEC Site Nos. 3-44-036 & V00520**
**EWMA Project No. 202530**

Figure 1 – Site Location Map

November 2022




NEW JERSEY QUADRANGLE LOCATION

2,000 1,000 0 2,000 Feet

SOURCE: USGS PARK RIDGE, N.J.-N.Y. 7.5 MINUTE. QUADRANGLE, TOPOGRAPHIC IMAGERY OBTAINED FROM ARCGIS ONLINE

EWMA
INNOVATIVE | EXPERIENCED | RESPONSIVE

100 MISTY LANE
P.O. BOX 5430
PARSIPPANY, NEW JERSEY

| DATE: | PROJECT # |
|---|---|
| 1/29/18 | 205548 |

DRAWN BY: RR
CHECKED BY: JS

Document Path: G:\Job Data\205000\205548\Drawings\205548F1 Site Loation map.mxd

**SITE LOCATION**
**FORMER SWIVELIER COMPANY SITE**
**33 ROUTE 304**
**VILLAGE OF NANUET, NEW YORK**

Figure # 1

# Periodic Review Report – Review Period July 2021 to November 2022

*Property Known As:*

**Swivelier Company**
**33 Route 304**
**Nanuet, Rockland County, New York 10954**
**NYSDEC Site Nos. 3-44-036 & V00520**
**EWMA Project No. 202530**

Figure 2 – Well Location Map

November 2022

MW-9DI
MW-9D
MW-9SI

ACTUAL LOCATION OF MW-9 CLUSTER IS 70' WEST OF MW-9D

SECT. 33, BLK. B, LOT 19
N/F
SIMMON TOV PROPERTIES, LTD.
Tepiltz

PROPERTY BOUNDARY
LANDSCAPED BUFFER AREA
DUMPSTER 20' x 60'
GRASS
U.P. W/ LIGHT
MW-13D
MW-5S
MW-1S
MW-1R
MW-10D
MW-8DI
GRASS
24" x 24" box culvert replace w/ new 24" RCP
centerline new 24" RCP
centerline new 24" RCP
ex.INV=86.30
ex.INV=85.69
ex. 12"-24" RCP to remain
new drainage precast conc. catch basin
connect new roof drains to drainage mh
MW-12D
MW-7I
MW-7SW
MW-3I
MW-3S
MW-6R
MW-7SE
CONCRETE CURB
ROAD
NYACK
WEST
ex. drainage swale to be piped
MW-6I
MW-11D/ESB-2
MW-6S
NYSDOT DRAINAGE EASEMENT
DEMAREST MILL ROAD
U.P. W/ LIGHT
EXISTING MACADAM AREA
ex.CONC. HEADWALL to be removed
NYSDOT drainage easement
MW-2N
MW-1N
MW-3N
EX.CB
EX.DMH TOP=91.53
FENCE (TYP.)
LIGHT POLE
SECT. 33, BLK. B, LOT 17
N/F
J.N.T. PROPERTIES CORP.
1 STORY FRAME BUILDING
ROCKLAND GYMNASTICS
EMPTY
1 STORY
BLOCK AND METAL
18,000 SQ. FT.
PHASE I – VERIZON
VERIZON
EXISTING MACADAM
METAL SHED
WOOD SHED
WOOD POLE
SIGN
U.P. W/ LIGHTS
MW-4I
MW-4S
C.O.
U.P.
MACADAM
EDGE OF PAVEMENT
M.K.
1 STORY FRAME BRAING
EXISTING MACADAM
LOWER ELEVATION AREA
EMPTY
MW-2SW
WEE PLAY
1 STORY
BRICK BUILDING
102,500 SQ. FT.
BALANCE OF BUILDING
MW-1SE
STEPS TO GRADE
NEW STONE WALL
LAZY BOY
EMPTY
BASSET FURNITURE DIRECT
MW-2S
MW-2I
METAL COVER
SECT. 33, BLK. B, LOT 16
N/F
JOHN & ROBERT MAIER
EDGE OF PAVEMENT
MACADAM
GRASS
FLAG POLE
U.P. W/ LIGHT
METAL POLE
SIGN
BUS SHELTER
TMH
TRAFFIC POLE
MAC. WALK
MACADAM WALKWAY
CONCRETE CURB

N. Y. S. HIGHWAY ROUTE 304

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)

| | | |
|---|---|---|
| **Environmental Waste Management Associates, LLC**<br>P.O. Box 5430<br>Parsippany, NJ 07054<br>Tel: (973) 560-1400 | SCALE: AS SHOWN<br>DATE:<br>DRAWN BY:<br>CHECKED BY:<br>FILE: k:\drawings\202000\202530\20253012.dwg | PROJECT# 202530 |
| WELL LOCATION MAP<br>FORMER SWIVELIER COMPANY SITE<br>ROUTE 304<br>VILLAGE OF NANUET, NEW YORK | | FIGURE# 2 |

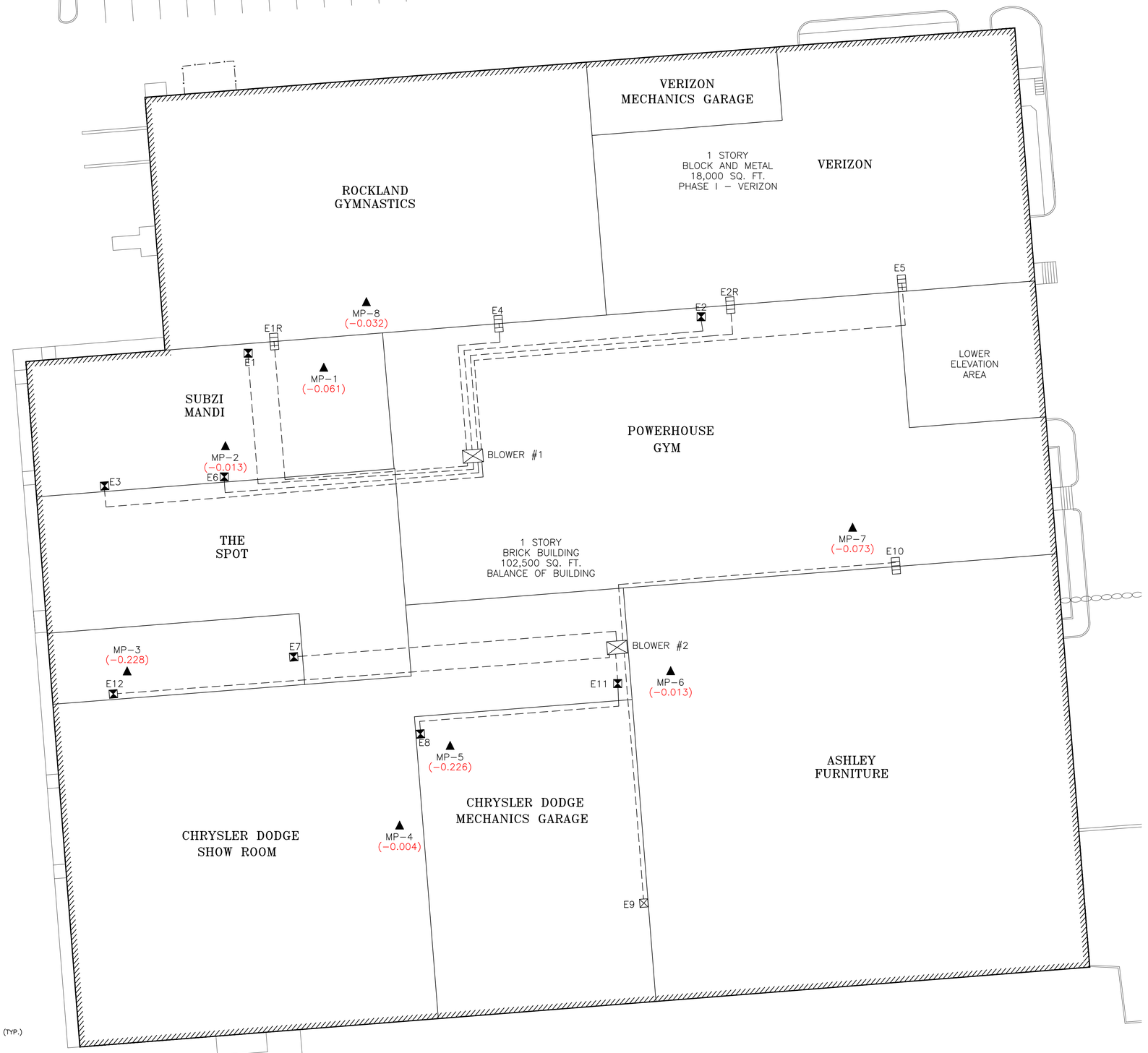
# Periodic Review Report – Review Period July 2021 to November 2022

*Property Known As:*

**Swivelier Company**
**33 Route 304**
**Nanuet, Rockland County, New York 10954**
**NYSDEC Site Nos. 3-44-036 & V00520**
**EWMA Project No. 202530**

Figure 3 – Sub-Slab Depressurization System & Vacuum Readings September 2022

November 2022




**LEGEND**

- ⊠ VERTICAL 4" PVC EXTRACTION POINT LOCATION
- ▲ MP–1 (–0.004) SUB–SLAB MONITORING POINT LOCATION – INSTALLED SEPTEMBER 2022 (TYP.) WITH SEPTEMBER 2022 VACUUM READING ("WC)
- LATERAL (3') 4" SLOTTED PVC EXTRACTION POINT LOCATION
- – — – — 2" PVC SCH.40 CONNECTOR PIPE ALONG THE CEILING
- ⊠ VACUUM BLOWER LOCATION

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)

NOTE: AS–BUILT PLAN HAS BEEN MAPPED TO THE BEST OF EWMA'S ABILITY BASED ON SITE VISITS PERFORMED BY EWMA IN MAY AND NOVEMBER 2017. DURING THESE SITE VISITS, LIMITED OR NO ACCESS WAS PERMITTED FOR SOME FACILITIES, AND THEREFORE NOT ALL POINTS WERE ABLE TO BE MAPPED. IT IS BELIEVED THAT THERE ARE A TOTAL OF 9 POINTS CONNECTED TO BLOWER #1, AND 8 POINTS CONNECTED TO BLOWER #2.

EWMA
INNOVATIVE | EXPERIENCED | RESPONSIVE
100 Misty Lane
P.O. Box 5430
Parsippany, NJ 07054

| | |
|---|---|
| SCALE: AS SHOWN | PROJECT# 202530 |
| DATE: 10/20/22 | |
| DRAWN BY: CL/JS | |
| CHECKED BY: JS | |
| FILE: X:\Drawings\202500\202530\202530_2022\202530_2022 VAC.dwg | |

*SUB–SLAB DEPRESSURIZATION SYSTEM (SSDS)*
*VACUUM READINGS – SEPTEMBER 2022*
FORMER SWIVELIER COMPANY SITE
ROUTE 304
VILLAGE OF NANUET, NEW YORK

FIGURE# 3

# Periodic Review Report – Review Period July 2021 to November 2022

*Property Known As:*

**Swivelier Company**
**33 Route 304**
**Nanuet, Rockland County, New York 10954**
**NYSDEC Site Nos. 3-44-036 & V00520**
**EWMA Project No. 202530**

Appendix 1 – IC/EC Certifications

November 2022

**Enclosure 2**
**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**
**Site Management Periodic Review Report Notice**
**Institutional and Engineering Controls Certification Form**

**Site Details** **Box 1**

**Site No.** **V00520**

**Site Name Swivelier Company**

Site Address: 33 Route 304 Zip Code: 10954
City/Town: Nanuet
County: Rockland
Site Acreage:

Reporting Period: ~~July 13, 2018 to November 13, 2019~~
July 13, 2020 to November 13, 2022

| | YES | NO |
|---|---|---|
| 1. Is the information above correct? | ☐ | ✓ |
| If NO, include handwritten above or on a separate sheet. | | |
| 2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period? | ☐ | ✓ |
| 3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))? | ☐ | ✓ |
| 4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period? | ☐ | ✓ |
| **If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.** | | |
| 5. Is the site currently undergoing development? | ☐ | ✓ |

**Box 2**

| | YES | NO |
|---|---|---|
| 6. Is the current site use consistent with the use(s) listed below? Industrial | ✓ | ☐ |
| 7. Are all ICs/ECs in place and functioning as designed? | ✓ | ☐ |

**IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

**A Corrective Measures Work Plan must be submitted along with this form to address these issues.**

Signature of Owner, Remedial Party or Designated Representative Date

**SITE NO. V00520** **Box 3**

**Description of Institutional Controls**

| Parcel | Owner | Institutional Control |
|---|---|---|
| | S.F Properties LLC | Ground Water Use Restriction<br>Soil Management Plan<br>Landuse Restriction<br>Building Use Restriction<br>Surface Water Use Restriction<br>Monitoring Plan<br>Site Management Plan<br>O&M Plan<br>IC/EC Plan |

Commercial development, Land and GW restrictions Soil Management Plan under SMP

**Box 4**

**Description of Engineering Controls**

| Parcel | Engineering Control |
|---|---|
| | Vapor Mitigation<br>Cover System<br>Fencing/Access Control<br>Monitoring Wells |

Controlled access, SSDS operational in building, Monitoring well sampling, Cover system with asphalt pavement

**Box 5**

**Periodic Review Report (PRR) Certification Statements**

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

| YES | NO |
|---|---|
| ✓ | ☐ |

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

| YES | NO |
|---|---|
| ✓ | ☐ |

**IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

**A Corrective Measures Work Plan must be submitted along with this form to address these issues.**

Signature of Owner, Remedial Party or Designated Representative

Date

**IC CERTIFICATIONS**
**SITE NO. V00520**

**Box 6**

**SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE**

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Jacob M. Strauss (print name) at EWMA 100 Misty Lane, P.O. Box 5430 Parsippany, NJ 07054 (print business address),

am certifying as Designated Representative of (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Jacob M. Strauss
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

11/4/2022
Date

## IC/EC CERTIFICATIONS

**Box 7**

**Signature**

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Jacob M. Strauss (print name) at EWMA, LLC and EWMA Engineering Services, LLC 100 Misty Lane, P.O. Box 5430 Parsippany, NJ 07054 (print business address),

am certifying as a Professional Engineer for the Owner (Owner or Remedial Party)


Jacob M. Strauss
Signature of , for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

11/4/2022
Date

# Periodic Review Report – Review Period July 2021 to November 2022

*Property Known As:*

**Swivelier Company**
**33 Route 304**
**Nanuet, Rockland County, New York 10954**
**NYSDEC Site Nos. 3-44-036 & V00520**
**EWMA Project No. 202530**

Appendix 2 – Annual Inspection of Cover System and Vapor Intrusion Control System

November 2022

**APPENDIX 2**

**FORMER SWIVELIER COMPANY**

**ANNUAL SITE INSPECTION REPORT/CHECKLIST**

| | |
|---|---|
| Date: | September 22, 2022 |
| Inspector: | Jacob Strauss, EWMA, Sr. Project Engineer |
| Reason for Inspection: | 2022 Annual Site Inspection Checklist |

1. *Is the Site compliant with all Institutional Controls, including Site usage (yes/no)?* Yes.
   *If no, describe:*

2. *Provide a general evaluation of Site conditions:*
   The site was secure and in good condition. The subject building is approximately 32,000 square feet, consisting of multiple commercial and light industrial office tenants, and is surrounded by paved asphalt parking areas.

3. *Provide a general evaluation of the condition and effectiveness of composite cover systems:*
   The cover system for the Property consists of asphalt pavement, concrete sidewalks, and concrete building slabs, and was found to be intact and functional during our annual inspection.

4. *Provide a general evaluation of the condition and effectiveness of Vapor Intrusion Controls:*
   Eight (8) new permanent sub-slab monitoring points were installed on September 22 and 23, 2022. The VMS is performing in compliance with SMP requirements, NYSDOH guidelines, and good vapor intrusion control practices. See attached Annual Inspection Report for sub-slab vacuum measurements.

5. *Provide a general evaluation of the condition of monitoring wells:*
   All monitoring wells located onsite are in good condition.

6. *Are Site management activities being conducted according to Site Management Plan (yes/no)?* Yes.
   *If no, describe:*

7. *Is Site documentation as required by the Site Management Plan up to date (yes/no)?* Yes.
   *If no, describe:*

8. *Are any changes to the monitoring program recommended (yes/no)?* No.
   *If yes, describe:*

EWMA
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Fax: (973) 560-0400

*Provided as Appendix 2 to the July 2020 – November 2022 Periodic Review Report*

November 4, 2022

Mr. Salvatore F. Priore, P.E.
Project Manager
NYSDEC
Division of Environmental Remediation
Remedial Bureau C
625 Broadway, 11th Floor
Albany, NY 12233-7014

**Re: Annual Inspection Report for Vapor Mitigation System & Cover System**
Swivelier Company
33 Route 304, Nanuet, Rockland County, New York 11101
NYSDEC Site Nos. 3-44-036 & V00520
EWMA Project No. 202530

Dear Mr. Priore:

EWMA is submitting this Annual Inspection Report, prepared in accordance with NYSDEC and Site Management Plan (SMP) requirements, for the vapor mitigation system (VMS) and cover system at the Former Swivelier Company site (Property).

The VMS for the subject building includes sub-slab de-pressurization, and is fully operational on continuous duty. EWMA conducted initial site inspections on June 2 and 9, 2022 and found that the SSDS was damaged and not operational. Repairs were completed in September 2022. EWMA returned to conduct the annual site inspection on September 22, 2022 and confirmed that the SSDS had been repaired and was now fully operational. Additionally, eight new permanent sub-slab monitoring points were installed on September 22 and 23, 2022.

The VMS is performing in compliance with SMP requirements, NYSDOH guidelines, and good vapor intrusion control practices. During the September 22 and 23, 2022 inspection, vacuum measurements in inches of water column (inch wc) were obtained at permanent sub-slab monitoring points as follows:

| **Vapor Mitigation System Sub-Slab Vacuum Measurements** | | |
|---|---|---|
| **Monitoring Point ID** | **Location** | **Vacuum (inch wc)** |
| MP-1 | Subzi Mandi | -0.061 |
| MP-2 | Subzi Mandi | -0.013 |
| MP-3 | Construction Hallway | -0.228 |
| MP-4 | Chrysler Dodge Showroom | -0.004 |
| MP-5 | Chrysler Dodge Maintenance Garage | -0.226 |
| MP-6 | Ashley Furniture Electrical Closet | -0.013 |
| MP-7 | Powerhouse Gym Break Room | -0.073 |

| | | |
|---|---|---|
| MP-8 | Gymnastics Academy Utility Closet | -0.032 |

The cover system for the Property consists of asphalt pavement, concrete sidewalks, and concrete building slabs, and was found to be intact and functional during our annual inspection.

If you have any questions or require any additional information please feel free to contact the undersigned at our Parsippany, New Jersey office, (973) 560-1400, ext. 195.

Sincerely,
**EWMA**

Jacob Strauss
Senior Project Engineer

Att: Site Inspection Checklist

Cc: NYSDEC
NYSDOH
Client
Cathy Bryant, Director, EWMA

J:\Jobs\202000s\202500S\202530\REPORTS\Periodic Review Report\Appendices\Appendix 2 - Annual Inspection Report\App 2 - Swivelier Annual Inspection Letter 2022.docx

# Periodic Review Report – Review Period July 2021 to November 2022

*Property Known As:*

**Swivelier Company**
**33 Route 304**
**Nanuet, Rockland County, New York 10954**
**NYSDEC Site Nos. 3-44-036 & V00520**
**EWMA Project No. 202530**

Appendix 3 – Laboratory Analytical Packages & Electronic Data Deliverable Submittals

November 2022

Integrated Analytical Laboratories LLC

# *ANALYTICAL DATA REPORT*

Environmental Waste Management Associates, LLC.
Lanidex Center
100 Misty Lane
Parsippany, NJ 07054

Project Name: **SWIVELIER - 202530**
IAL Case Number: **E22-03213**

These data have been reviewed and accepted by:

Michael H. Leffin, Ph.D.
Laboratory Director



273 Franklin Road
Randolph, NJ 07869
Phone: 973 361 4252

IAL is a NELAP accredited lab (TNI01264) and maintains certification in Connecticut (PH-0699), New Jersey (14751), New York (11402) and Pennsylvania (68-00773).

# Integrated Analytical Laboratories - Table of Contents

# Sample Summary

*IAL Case No.*
**E22-03213**

*Client* EWMA - HQ

*Project* SWIVELIER - 202530

*Received On* 6/ 1/2022@17:55

| *Lab ID* | *Client Sample ID* | *Depth Top/Bottom* | *Sampling Time* | *Matrix* | *# of Container* |
|---|---|---|---|---|---|
| 03213-001 | MW-13D-060122 | n/a | 6/ 1/2022@13:15 | Aqueous | 3 |
| 03213-002 | FB-060122 | n/a | 6/ 1/2022@09:45 | Aqueous | 2 |
| 03213-003 | TB-060122 | n/a | 6/ 1/2022 | Aqueous | 2 |



*Integrated Analytical Labs ~ 273 Franklin Road, Randolph, NJ 07869 ~ (973) 361-4252*

## DATA QUALIFIERS AND FLAGS

| | |
|---|---|
| **B** | Indicates the analyte found in the associated method blank and in the sample due to potential lab contamination. |
| **C** | Indicates analyte is a common laboratory contaminant. |
| **D** | Indicates analyte was reported from diluted analysis. |
| **E** | Identifies a compound concentration that exceeds the upper level of the calibration range of the instrument |
| **J** | Indicates an estimated value either when the concentration in the sample is less than the RL or for qualification of TICs |
| **J1** | Indicates an estimated value when ICC or CCV did not meet the criteria. |
| **M** | Indicates matrix interference |
| **N** | Presumptive evidence of a compound from the use of GC/MS library search. |
| **T** | Sample analyzed outside of holding time |
| **X** | Indicates samples analyzed for total and dissolved metals differ at ≤20% RPD. |
| **Y** | Indicates DO depletion in the BOD blank is >0.20ppm |
| **Z** | Indicates internal standard failure. Sample results are either biased high or biased low. |
| **$** | Value outside NJDEP DKQP Limits |
| * | Result outside of QC limits |

## PROJECT NOTES

- All results for soils, solids, and sludges are reported on a dry-weight basis except where noted
- All test results and QC are compliant with TNI or other applicable state agency requirements/guidance unless otherwise notated in the case narrative and/or project information page.
- The case narrative for this SDG should be consulted to determine any non-conformances.
- Any samples with 15-minute or "analyze immediately" holding times (e.g. pH, Dissolved Oxygen, Sulfite, etc.) which are analyzed in the laboratory are considered out of holding time.
- IAL is a NELAP/TNI certified laboratory (TNI ID# TNI01284). IAL retains certification in Connecticut (PH-0699), New Jersey (14751), New York (11402), and Pennsylvania (68-00773).
- Certification is not required to perform analyses in the following states: AL, CO, DE, GA, HI, ID, IN, KY, MD, MI, MS, MO, MT, NE, NM, SD and TN. IAL can perform all analyses, except Drinking Water, within its scope of capabilities in these states.

## ACRONYMS AND ABBREVIATIONS

| | | | |
|---|---|---|---|
| **CFU** | Colony Forming Unit | **ND** | Indicates analyte was analyzed for but not detected at MDL or RL (only if MDL is not used) |
| **CCB** | Continuing Calibration Blank | | |
| **CCV** | Continuing Calibration Verification | **NTU** | Nephelometric Turbidity Units |
| **DF** | Dilution Factor | **ppb** | Parts per billion. Reported as µg/L or µg/kg |
| **DL** | Attached as a suffix to a diluted sample | **ppm** | Parts per million. Reported as mg/L, µg/mL or mg/kg |
| **DUP** | Duplicate | **QC** | Quality Control |
| **ICB** | Initial Calibration Blank | **% Rec** | Percent Recovery |
| **ICC** | Initial Calibration Curve | **RL** | Reporting Limit. The RL is typically determined by the concentration of the lowest standard in the calibration curve |
| **ICV** | Initial Calibration Verification | | |
| **kg** | kilogram | | |
| **L** | Liter | **RPD** | Relative Percent Difference |
| **LCS** | Laboratory Control Sample | **RSD** | Relative Standard Deviation |
| **LCSD** | Laboratory Control Sample Duplicate | **RT** | Retention Time |
| **MDL** | Method Detection Limit as determined according to 40 CFR Part 136 Appendix B | **SU** | Standard Units |
| | | **TIC** | Tentatively Identified Compound AKA Library Search Compounds |
| **MF** | Membrane Filter | | |
| **mg** | milligram (1000mg = 1g) | **TNI** | The NELAC (National Environmental Laboratory Accreditation Council) Institute |
| **µg** | microgram (1000µg = 1mg) | | |
| **ml** | milliliter (1000ml = 1L) | **TNTC** | Too numerous to count |
| **µl** | microliter (1000µl = 1ml) | * | When attached to a compound name, indicates this analyte was analyzed by Method SW-846 8270 SIM |
| **µmhos** | Conductivity units - resistance expressed in ohms | | |
| **MPN** | Most Probable Number | ^ | When attached to a compound name, indicates this analyte was analyzed by Method SW-846 8011 or EPA 504.1 |
| **MS** | Matrix Spike | | |
| **MSD** | Matrix Spike Duplicate | | |
| **NA** | Not applicable | < | Less than; In conjunction with a numerical value, indicates a concentration less than the RL or MDL |
| **NC** | Not calculated | | |

SAMPLE DELIVERY GROUP CASE NARRATIVE
(Conformance / Non-Conformance Summary)

# SAMPLE DELIVERY GROUP CASE NARRATIVE

## SDG#: E22-03213

Integrated Analytical Laboratories, LLC. received three (3) samples** from EWMA - HQ (IAL SDG# **E22-03213**, Project: SWIVELIER - 202530) on June 1, 2022 for the analysis of :

( 3 ) TCL VO + 15

**Number of samples listed above may be greater than what is listed on the chain of custody. Any samples that require in-house filtration or splitting will be counted as separate samples.

Samples were received in good condition with documentation in order.
Cooler temperature was acceptable at 4 ± 2 degree C.

| **Volatiles By SW 8260D** | **Batch: 220606-01** | **Matrix: Aqueous** |
|---|---|---|

**QC**

- Calibration curve met QC criteria.
- Internal standards recovery met QC criteria.
- Surrogate percent recovery met QC criteria.
- Method blank met QC criteria.
- LCS percent recovery met QC criteria.
- MS/MSD RPD met QC criteria.
- MS/MSD percent recovery met QC criteria.

**E22-03213**

- All samples were received within holding time.
- All samples were analyzed within holding time.

Dilution Summary:

| Sample ID | DF(s) | Dilution For |
|---|---|---|
| E22-03213-001 | 100 | Target compound(s). |
| E22-03213-002 | 1 | NA |
| E22-03213-003 | 1 | NA |

A review of the QA/QC measures for the analysis of the sample(s) contained in this report has been performed by:

Tom Mulinski
Reviewed by

6/16/2022
Date

# DATA OF KNOWN QUALITY CONFORMANCE/NON-CONFORMANCE SUMMARY QUESTIONNAIRE

***Laboratory Name:*** Integrated Analytical Laboratories
***Client:*** Environmental Waste Management Associates, LLC.
***Project Location:*** SWIVELIER - 202530
***IAL Project #:*** E22-03213
***IAL Sample ID(s):*** E22-03213-001 ~ -003
***Sampling Date(s):*** 6/1/2022

***List of DKQP Method Used:***
TCL VO by 8260D

***Notes:*** For all questions to which the response was "No" (with the exception of question #7), additional information is provided in the case narrative. If the answer to question #1, #1A, or #1B is "No", the data package does not meet the requirements for "Data of Known Quality."

| | | YES | NO | N/A |
|---|---|---|---|---|
| 1 | For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP | X | | |
| 1A | Were the method specified handling, preservation, and holding time requirements met? | X | | |
| 1B | EPH Method: Was the EPH method conducted without significant modifications? (see Section 11.3 of respective DKQ methods) | | | X |
| 2 | Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)? | X | | |
| 3 | Were samples received at an appropriate temperature (4±2° C)? | X | | |
| 4 | Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved? | X | | |
| 5A | Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt? | X | | |
| 5B | Were these reporting limits met? | | X | |
| 6 | For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP? | X | | |
| 7 | Are project-specific matrix spikes and/or laboratory duplicates included in this data set? | | X | |

RESULTS SUMMARY REPORT

**SUMMARY REPORT**
**Client: Environmental Waste Management Associates, LLC.**
**Project: SWIVELIER - 202530**
**Lab Case No.: E22-03213**

| | Lab ID: | 03213-001 | | | 03213-002 | | | 03213-003 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Client ID: | MW-13D-060122 | | | FB-060122 | | | TB-060122 | | |
| | Matrix: | Aqueous | | | Aqueous | | | Aqueous | | |
| | Sampled Date | 6/1/22 | | | 6/1/22 | | | 6/1/22 | | |
| PARAMETER(Units) | | Conc | Q | MDL | Conc | Q | MDL | Conc | Q | MDL |
| **Volatiles (Units)** | | *(ug/L)* | | | *(ug/L)* | | | *(ug/L)* | | |
| Vinyl chloride | | 43.3 | DJ | 35.2 | ND | | 0.352 | ND | | 0.352 |
| cis-1,2-Dichloroethene | | 4550 | D | 27.7 | ND | | 0.277 | ND | | 0.277 |
| Trichloroethene | | 9980 | D | 34.7 | ND | | 0.347 | ND | | 0.347 |
| Tetrachloroethene | | 42.5 | DJ | 36.5 | ND | | 0.365 | ND | | 0.365 |
| 1,2-Dichlorobenzene | | 101 | D | 35.4 | ND | | 0.354 | ND | | 0.354 |
| **TOTAL VO's:** | | 14700 | DJ | | ND | | | ND | | |
| **TOTAL TIC's:** | | ND | | | ND | | | ND | | |
| **TOTAL VO's & TIC's:** | | 14700 | DJ | | ND | | | ND | | |

ND = Analyzed for but Not Detected at the MDL
J = Indicates an estimated value either when the concentration in the sample is greater than MDL and less than RL, or for qualification of TICs
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

ANALYTICAL RESULTS

## VOLATILE ORGANICS

Lab ID: E22-03213-001
Client ID: MW-13D-06012
Date Received: 06/01/2022
Date Analyzed: 06/07/2022
Data file: K6345.D 06/07/2022 00:10

GC/MS Column: DB-624
Sample wt/vol: 0.05mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 100

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Dichlorodifluoromethane | ND | | 100 | 55.2 |
| Chloromethane | ND | | 50.0 | 30.9 |
| Vinyl chloride | 43.3 | DJ | 100 | 35.2 |
| Bromomethane | ND | | 100 | 38.6 |
| Chloroethane | ND | | 50.0 | 32.4 |
| Trichlorofluoromethane | ND | | 100 | 50.3 |
| 1,1-Dichloroethene | ND | | 50.0 | 36.3 |
| Acetone | ND | | 200 | 84.7 |
| Carbon disulfide | ND | | 100 | 40.3 |
| Methylene chloride | ND | | 100 | 50.0 |
| trans-1,2-Dichloroethene | ND | | 50.0 | 37.2 |
| Methyl tert-butyl ether (MTBE) | ND | | 50.0 | 24.5 |
| 1,1-Dichloroethane | ND | | 50.0 | 28.5 |
| cis-1,2-Dichloroethene | 4550 | D | 50.0 | 27.7 |
| 2-Butanone (MEK) | ND | | 200 | 80.2 |
| Bromochloromethane | ND | | 100 | 37.9 |
| Chloroform | ND | | 50.0 | 28.5 |
| 1,1,1-Trichloroethane | ND | | 50.0 | 38.1 |
| Carbon tetrachloride | ND | | 50.0 | 34.9 |
| 1,2-Dichloroethane (EDC) | ND | | 50.0 | 27.3 |
| Benzene | ND | | 50.0 | 27.0 |
| Trichloroethene | 9980 | D | 50.0 | 34.7 |
| 1,2-Dichloropropane | ND | | 50.0 | 27.2 |
| 1,4-Dioxane | ND | | 10000 | 5110 |
| Bromodichloromethane | ND | | 50.0 | 25.8 |
| cis-1,3-Dichloropropene | ND | | 100 | 26.4 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 100 | 61.1 |

## VOLATILE ORGANICS

Lab ID: E22-03213-001
Client ID: MW-13D-06012
Date Received: 06/01/2022
Date Analyzed: 06/07/2022
Data file: K6345.D 06/07/2022 00:10

GC/MS Column: DB-624
Sample wt/vol: 0.05mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 100

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Toluene | ND | | 50.0 | 30.2 |
| trans-1,3-Dichloropropene | ND | | 100 | 33.0 |
| 1,1,2-Trichloroethane | ND | | 50.0 | 31.3 |
| Tetrachloroethene | 42.5 | DJ | 50.0 | 36.5 |
| 2-Hexanone | ND | | 100 | 81.8 |
| Dibromochloromethane | ND | | 50.0 | 26.3 |
| 1,2-Dibromoethane (EDB) | ND | | 50.0 | 28.9 |
| Chlorobenzene | ND | | 50.0 | 30.4 |
| Ethylbenzene | ND | | 50.0 | 31.3 |
| Total Xylenes | ND | | 100 | 34.5 |
| Styrene | ND | | 50.0 | 31.7 |
| Bromoform | ND | | 50.0 | 32.8 |
| Isopropylbenzene | ND | | 50.0 | 33.2 |
| 1,1,2,2-Tetrachloroethane | ND | | 100 | 28.4 |
| 1,3-Dichlorobenzene | ND | | 50.0 | 38.6 |
| 1,4-Dichlorobenzene | ND | | 50.0 | 39.7 |
| 1,2-Dichlorobenzene | 101 | D | 50.0 | 35.4 |
| 1,2-Dibromo-3-chloropropane | ND | | 100 | 41.0 |
| 1,2,4-Trichlorobenzene | ND | | 100 | 35.8 |
| 1,2,3-Trichlorobenzene | ND | | 100 | 40.6 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 100 | 53.8 |
| Methyl acetate | ND | | 50.0 | 34.5 |
| Cyclohexane | ND | | 100 | 46.9 |
| Methylcyclohexane | ND | | 100 | 42.1 |
| 1,3-Dichloropropene (cis- and trans-) | ND | | 100 | 26.4 |
| Total Target Compounds (52): | 14700 | DJ | | |

D --- Dilution Performed
J --- Value Less than RL & greater than MDL
E --- Exceeds upper level of Calibration curve

B --- Compound detected in Blank
C --- Common laboratory contamination

## VOLATILE ORGANICS
### Tentatively Identified Compounds

Lab ID: E22-03213-001
Client ID: MW-13D-06012
Date Received: 06/01/2022
Date Analyzed: 06/07/2022
Date File: K6345.D

GC/MS Column: DB-624
Sample wt/vol: 0.05mL
Matrix-Units: Aqueous-µg/L
Dilution Factor: 100
% Moisture: 100

| CAS # | Compound | Estimated Concentration | Q | Retention Time |
|---|---|---|---|---|

No peaks detected

Total TICs = 0

D --- Dilution Performed

J --- Estimated concentration for TICs

N --- Presumptive evidence of a compound from the use of GC/MS NIST library search

## VOLATILE ORGANICS

Lab ID: E22-03213-002
Client ID: FB-060122
Date Received: 06/01/2022
Date Analyzed: 06/07/2022
Data file: K6346.D 06/07/2022 00:39

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Dichlorodifluoromethane | ND | | 1.00 | 0.552 |
| Chloromethane | ND | | 0.500 | 0.309 |
| Vinyl chloride | ND | | 1.00 | 0.352 |
| Bromomethane | ND | | 1.00 | 0.386 |
| Chloroethane | ND | | 0.500 | 0.324 |
| Trichlorofluoromethane | ND | | 1.00 | 0.503 |
| 1,1-Dichloroethene | ND | | 0.500 | 0.363 |
| Acetone | ND | | 2.00 | 0.847 |
| Carbon disulfide | ND | | 1.00 | 0.403 |
| Methylene chloride | ND | | 1.00 | 0.500 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 0.372 |
| Methyl tert-butyl ether (MTBE) | ND | | 0.500 | 0.245 |
| 1,1-Dichloroethane | ND | | 0.500 | 0.285 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 0.277 |
| 2-Butanone (MEK) | ND | | 2.00 | 0.802 |
| Bromochloromethane | ND | | 1.00 | 0.379 |
| Chloroform | ND | | 0.500 | 0.285 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 0.381 |
| Carbon tetrachloride | ND | | 0.500 | 0.349 |
| 1,2-Dichloroethane (EDC) | ND | | 0.500 | 0.273 |
| Benzene | ND | | 0.500 | 0.270 |
| Trichloroethene | ND | | 0.500 | 0.347 |
| 1,2-Dichloropropane | ND | | 0.500 | 0.272 |
| 1,4-Dioxane | ND | | 100 | 51.1 |
| Bromodichloromethane | ND | | 0.500 | 0.258 |
| cis-1,3-Dichloropropene | ND | | 1.00 | 0.264 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1.00 | 0.611 |

## VOLATILE ORGANICS

Lab ID: E22-03213-002
Client ID: FB-060122
Date Received: 06/01/2022
Date Analyzed: 06/07/2022
Data file: K6346.D 06/07/2022 00:39

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Toluene | ND | | 0.500 | 0.302 |
| trans-1,3-Dichloropropene | ND | | 1.00 | 0.330 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 0.313 |
| Tetrachloroethene | ND | | 0.500 | 0.365 |
| 2-Hexanone | ND | | 1.00 | 0.818 |
| Dibromochloromethane | ND | | 0.500 | 0.263 |
| 1,2-Dibromoethane (EDB) | ND | | 0.500 | 0.289 |
| Chlorobenzene | ND | | 0.500 | 0.304 |
| Ethylbenzene | ND | | 0.500 | 0.313 |
| Total Xylenes | ND | | 1.00 | 0.345 |
| Styrene | ND | | 0.500 | 0.317 |
| Bromoform | ND | | 0.500 | 0.328 |
| Isopropylbenzene | ND | | 0.500 | 0.332 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | 0.284 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 0.386 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 0.397 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 0.354 |
| 1,2-Dibromo-3-chloropropane | ND | | 1.00 | 0.410 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | 0.358 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | 0.406 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 1.00 | 0.538 |
| Methyl acetate | ND | | 0.500 | 0.345 |
| Cyclohexane | ND | | 1.00 | 0.469 |
| Methylcyclohexane | ND | | 1.00 | 0.421 |
| 1,3-Dichloropropene (cis- and trans-) | ND | | 1.00 | 0.264 |

Total Target Compounds (52): 0

D --- Dilution Performed
J --- Value Less than RL & greater than MDL
E --- Exceeds upper level of Calibration curve

B --- Compound detected in Blank
C --- Common laboratory contamination

## VOLATILE ORGANICS
### Tentatively Identified Compounds

Lab ID: E22-03213-002
Client ID: FB-060122
Date Received: 06/01/2022
Date Analyzed: 06/07/2022
Date File: K6346.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
Dilution Factor: 1
% Moisture: 100

| CAS # | Compound | Estimated Concentration | Q | Retention Time |
|---|---|---|---|---|
| | Column/Septa bleed | 0 | J | 5.35 |

Total TICs = 0

D --- Dilution Performed

J --- Estimated concentration for TICs

N --- Presumptive evidence of a compound from the use of GC/MS NIST library search

## VOLATILE ORGANICS

Lab ID: E22-03213-003
Client ID: TB-060122
Date Received: 06/01/2022
Date Analyzed: 06/07/2022
Data file: K6347.D 06/07/2022 01:08

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Dichlorodifluoromethane | ND | | 1.00 | 0.552 |
| Chloromethane | ND | | 0.500 | 0.309 |
| Vinyl chloride | ND | | 1.00 | 0.352 |
| Bromomethane | ND | | 1.00 | 0.386 |
| Chloroethane | ND | | 0.500 | 0.324 |
| Trichlorofluoromethane | ND | | 1.00 | 0.503 |
| 1,1-Dichloroethene | ND | | 0.500 | 0.363 |
| Acetone | ND | | 2.00 | 0.847 |
| Carbon disulfide | ND | | 1.00 | 0.403 |
| Methylene chloride | ND | | 1.00 | 0.500 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 0.372 |
| Methyl tert-butyl ether (MTBE) | ND | | 0.500 | 0.245 |
| 1,1-Dichloroethane | ND | | 0.500 | 0.285 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 0.277 |
| 2-Butanone (MEK) | ND | | 2.00 | 0.802 |
| Bromochloromethane | ND | | 1.00 | 0.379 |
| Chloroform | ND | | 0.500 | 0.285 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 0.381 |
| Carbon tetrachloride | ND | | 0.500 | 0.349 |
| 1,2-Dichloroethane (EDC) | ND | | 0.500 | 0.273 |
| Benzene | ND | | 0.500 | 0.270 |
| Trichloroethene | ND | | 0.500 | 0.347 |
| 1,2-Dichloropropane | ND | | 0.500 | 0.272 |
| 1,4-Dioxane | ND | | 100 | 51.1 |
| Bromodichloromethane | ND | | 0.500 | 0.258 |
| cis-1,3-Dichloropropene | ND | | 1.00 | 0.264 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1.00 | 0.611 |

## VOLATILE ORGANICS

Lab ID: E22-03213-003
Client ID: TB-060122
Date Received: 06/01/2022
Date Analyzed: 06/07/2022
Data file: K6347.D 06/07/2022 01:08

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Toluene | ND | | 0.500 | 0.302 |
| trans-1,3-Dichloropropene | ND | | 1.00 | 0.330 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 0.313 |
| Tetrachloroethene | ND | | 0.500 | 0.365 |
| 2-Hexanone | ND | | 1.00 | 0.818 |
| Dibromochloromethane | ND | | 0.500 | 0.263 |
| 1,2-Dibromoethane (EDB) | ND | | 0.500 | 0.289 |
| Chlorobenzene | ND | | 0.500 | 0.304 |
| Ethylbenzene | ND | | 0.500 | 0.313 |
| Total Xylenes | ND | | 1.00 | 0.345 |
| Styrene | ND | | 0.500 | 0.317 |
| Bromoform | ND | | 0.500 | 0.328 |
| Isopropylbenzene | ND | | 0.500 | 0.332 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | 0.284 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 0.386 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 0.397 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 0.354 |
| 1,2-Dibromo-3-chloropropane | ND | | 1.00 | 0.410 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | 0.358 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | 0.406 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 1.00 | 0.538 |
| Methyl acetate | ND | | 0.500 | 0.345 |
| Cyclohexane | ND | | 1.00 | 0.469 |
| Methylcyclohexane | ND | | 1.00 | 0.421 |
| 1,3-Dichloropropene (cis- and trans-) | ND | | 1.00 | 0.264 |

Total Target Compounds (52): 0

D --- Dilution Performed
J --- Value Less than RL & greater than MDL
E --- Exceeds upper level of Calibration curve

B --- Compound detected in Blank
C --- Common laboratory contamination

## VOLATILE ORGANICS
### Tentatively Identified Compounds

Lab ID: E22-03213-003
Client ID: TB-060122
Date Received: 06/01/2022
Date Analyzed: 06/07/2022
Date File: K6347.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
Dilution Factor: 1
% Moisture: 100

| CAS # | Compound | Estimated Concentration | Q | Retention Time |
|---|---|---|---|---|

No peaks detected

Total TICs = 0

D --- Dilution Performed

J --- Estimated concentration for TICs

N --- Presumptive evidence of a compound from the use of GC/MS NIST library search

VOLATILE ORGANICS

VOLATILE ORGANICS QC SUMMARY

## VOLATILE SURROGATE PERCENT RECOVERY SUMMARY

**Date Analyzed:** 06/06/2022

| Lab Sample ID | Matrix | File ID | SMC1 # | SMC2 # | SMC3 # |
|---|---|---|---|---|---|
| BLKA220606-01 | AQUEOUS | K6336.D | 99 | 95 | 96 |
| LCSA220606-01 | AQUEOUS | K6337.D | 96 | 101 | 101 |
| E22-03122-001MS | AQUEOUS | K6338.D | 94 | 104 | 102 |
| E22-03195-001 | AQUEOUS | K6340.D | 99 | 94 | 96 |
| E22-03195-002 | AQUEOUS | K6341.D | 97 | 99 | 95 |
| E22-03122-001 | AQUEOUS | K6342.D | 100 | 96 | 95 |
| E22-03122-002 | AQUEOUS | K6343.D | 98 | 99 | 94 |
| E22-03122-003 | AQUEOUS | K6344.D | 98 | 101 | 94 |
| E22-03213-001 | AQUEOUS | K6345.D | 96 | 100 | 95 |
| E22-03213-002 | AQUEOUS | K6346.D | 99 | 101 | 96 |
| E22-03213-003 | AQUEOUS | K6347.D | 100 | 102 | 96 |
| E22-03226-001 | AQUEOUS | K6348.D | 102 | 100 | 96 |
| E22-03226-002 | AQUEOUS | K6349.D | 98 | 101 | 101 |
| E22-03226-002DUP | AQUEOUS | K6350.D | 98 | 102 | 102 |
| E22-03226-003 | AQUEOUS | K6351.D | 97 | 98 | 95 |
| E22-03226-004 | AQUEOUS | K6352.D | 98 | 101 | 95 |
| E22-03269-001 | AQUEOUS | K6353.D | 99 | 102 | 96 |
| E22-03269-002 | AQUEOUS | K6354.D | 99 | 99 | 94 |
| E22-03269-003 | AQUEOUS | K6355.D | 102 | 101 | 97 |
| E22-03269-004 | AQUEOUS | K6356.D | 99 | 97 | 97 |

| | Concentration | DKQPs | Leachate Aqueous/Meoh | Soil |
|---|---|---|---|---|
| SMC1 = 1,2-Dichloroethane-d4 | 50 ppb | 70-130 | 61-147 | 33-166 |
| SMC2 = Toluene-d8 | 50 ppb | 70-130 | 58-143 | 48-142 |
| SMC3 = Bromofluorobenzene | 50 ppb | 70-130 | 64-144 | 42-149 |

# Column used to flag recovery values that did not meet criteria
* Values outside of QC limits
$ Values outside of NJ DKQP limits
D Surrogate diluted out
M Matrix interference

FORM 2

8260

## LCS ACCURACY REPORT

Lab ID: LCSA220606-01
Date Received: NA
Date Analyzed: 06/06/2022
LCS Data file: K6337.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Conc. Add | Conc. LCS | %Rec. LCS | # | Limits |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 50.0 | 52.1 | 104 | | 37-146 |
| Chloromethane | 50.0 | 47.5 | 95 | | 34-141 |
| Vinyl chloride | 50.0 | 49.1 | 98 | | 60-130 |
| Bromomethane | 50.0 | 47.9 | 96 | | 58-143 |
| Chloroethane | 50.0 | 47.4 | 95 | | 57-154 |
| Trichlorofluoromethane | 50.0 | 53.4 | 107 | | 41-139 |
| 1,1-Dichloroethene | 50.0 | 49.6 | 99 | | 51-151 |
| Acetone | 100 | 83.8 | 84 | | 61-144 |
| Carbon disulfide | 50.0 | 49.2 | 98 | | 52-156 |
| Vinyl acetate | 50.0 | 51.2 | 102 | | 43-148 |
| Methylene chloride | 50.0 | 50.7 | 101 | | 50-145 |
| Acrylonitrile | 150.0 | 155.9 | 104 | | 52-158 |
| tert-Butyl alcohol (TBA) | 100.0 | 101.4 | 101 | | 60-140 |
| trans-1,2-Dichloroethene | 50.0 | 48.9 | 98 | | 50-149 |
| Methyl tert-butyl ether (MTBE) | 50.0 | 52.6 | 105 | | 62-132 |
| 1,1-Dichloroethane | 50.0 | 49.0 | 98 | | 62-132 |
| Diisopropyl ether (DIPE) | 50.0 | 50.8 | 102 | | 38-148 |
| cis-1,2-Dichloroethene | 50.0 | 49.5 | 99 | | 64-133 |
| 2,2-Dichloropropane | 50.0 | 53.2 | 106 | | 37-153 |
| 2-Butanone (MEK) | 100 | 87.0 | 87 | | 55-135 |
| Bromochloromethane | 50.0 | 49.2 | 98 | | 56-138 |
| Chloroform | 50.0 | 49.0 | 98 | | 57-133 |
| 1,1,1-Trichloroethane | 50.0 | 54.6 | 109 | | 42-142 |
| Carbon tetrachloride | 50.0 | 55.4 | 111 | | 40-144 |
| 1,1-Dichloropropene | 50.0 | 48.7 | 97 | | 57-133 |
| 1,2-Dichloroethane (EDC) | 50.0 | 49.1 | 98 | | 43-143 |
| Benzene | 50.0 | 50.3 | 101 | | 53-140 |
| Trichloroethene | 50.0 | 53.1 | 106 | | 42-139 |
| 1,2-Dichloropropane | 50.0 | 47.9 | 96 | | 62-137 |
| Dibromomethane | 50.0 | 51.4 | 103 | | 50-140 |
| 1,4-Dioxane | 1500 | 1134 | 76 | | 62-131 |
| Bromodichloromethane | 50.0 | 53.3 | 107 | | 50-139 |
| 2-Chloroethyl vinyl ether | 100 | 95.7 | 96 | | 32-150 |
| cis-1,3-Dichloropropene | 50.0 | 51.9 | 104 | | 41-152 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 107.4 | 107 | | 41-146 |
| Toluene | 50.0 | 50.5 | 101 | | 42-150 |
| trans-1,3-Dichloropropene | 50.0 | 50.5 | 101 | | 40-149 |
| 1,1,2-Trichloroethane | 50.0 | 50.0 | 100 | | 59-137 |
| Tetrachloroethene | 50.0 | 54.4 | 109 | | 51-131 |
| 1,3-Dichloropropane | 50.0 | 48.7 | 97 | | 50-147 |

## LCS ACCURACY REPORT

Lab ID: LCSA220606-01
Date Received: NA
Date Analyzed: 06/06/2022
LCS Data file: K6337.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Conc. Add | Conc. LCS | %Rec. LCS | # | Limits |
|---|---|---|---|---|---|
| 2-Hexanone | 100 | 88.3 | 88 | | 57-139 |
| Dibromochloromethane | 50.0 | 56.7 | 113 | | 36-150 |
| 1,2-Dibromoethane (EDB) | 50.0 | 52.5 | 105 | | 46-149 |
| Chlorobenzene | 50.0 | 49.5 | 99 | | 46-148 |
| 1,1,1,2-Tetrachloroethane | 50.0 | 53.6 | 107 | | 62-138 |
| Ethylbenzene | 50.0 | 50.0 | 100 | | 46-156 |
| m,p-Xylene | 100.0 | 101.2 | 101 | | 55-142 |
| o-Xylene | 50.0 | 50.9 | 102 | | 43-166 |
| Styrene | 50.0 | 52.4 | 105 | | 50-161 |
| Bromoform | 50.0 | 53.2 | 106 | | 31-149 |
| Isopropylbenzene | 50.0 | 54.4 | 109 | | 70-130 |
| 1,1,2,2-Tetrachloroethane | 50.0 | 46.5 | 93 | | 51-131 |
| Bromobenzene | 50.0 | 50.8 | 102 | | 65-132 |
| 1,2,3-Trichloropropane | 50.0 | 50.5 | 101 | | 57-144 |
| n-Propylbenzene | 50.0 | 51.3 | 103 | | 63-132 |
| 2-Chlorotoluene | 50.0 | 49.4 | 99 | | 38-161 |
| 1,3,5-Trimethylbenzene | 50.0 | 52.2 | 104 | | 59-147 |
| 4-Chlorotoluene | 50.0 | 49.4 | 99 | | 52-141 |
| tert-Butylbenzene | 50.0 | 53.8 | 108 | | 49-143 |
| 1,2,4-Trimethylbenzene | 50.0 | 51.8 | 104 | | 56-147 |
| sec-Butylbenzene | 50.0 | 53.5 | 107 | | 51-143 |
| 1,3-Dichlorobenzene | 50.0 | 48.4 | 97 | | 59-131 |
| 4-Isopropyltoluene | 50.0 | 54.1 | 108 | | 51-143 |
| 1,4-Dichlorobenzene | 50.0 | 49.7 | 99 | | 65-131 |
| n-Butylbenzene | 50.0 | 52.8 | 106 | | 55-142 |
| 1,2-Dichlorobenzene | 50.0 | 48.6 | 97 | | 64-132 |
| 1,2-Dibromo-3-chloropropane | 50.0 | 44.2 | 88 | | 33-161 |
| 1,2,4-Trichlorobenzene | 50.0 | 43.1 | 86 | | 32-148 |
| Hexachlorobutadiene | 50.0 | 48.7 | 97 | | 19-151 |
| Naphthalene | 50.0 | 39.9 | 80 | | 67-141 |
| 1,2,3-Trichlorobenzene | 50.0 | 39.2 | 78 | | 34-156 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 50.0 | 52.3 | 105 | | 56-154 |
| Methyl acetate | 50.0 | 49.8 | 100 | | 41-147 |
| Cyclohexane | 50.0 | 55.9 | 112 | | 38-150 |
| Methylcyclohexane | 50.0 | 58.1 | 116 | | 48-138 |

# Column used to flag recovery and RPD values that did not meet criteria
* Values outside of QC limits
$ Values outside of NJ DKQP limits

## LCS ACCURACY REPORT

Lab ID: LCSA220606-01
Date Received: NA
Date Analyzed: 06/06/2022
LCS Data file: K6337.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Conc. Add | LCS | MS Conc. | %Rec | # |
|---|---|---|---|---|---|

As per SW-846 8260C, up to 10% of the compounds may be out , but must be within 40-160%
As per NJDEP DKQPs, only the following compounds may be in the 40-160% range:
Acetone; Bromomethane; 2-Butanone (MEK); Carbon disulfide; Chloroethane; Chloromethane
1,2-Dibromo-3-chloropropane; Dichlorodifluoromethane; 1,4-Dioxane; 2-Hexanone
Naphthalene; 4-Methyl-2-pentanone (MIBK); Trichlorofluoromethane

| | Leachate Aqueous/Meoh | Soil/Sediment |
|---|---|---|
| LCS ACCURACY (%REC) | 70-130 | 70-130 |

# Column used to flag recovery values that did not meet criteria
* Values outside of QC limits
$ Values outside of NJ DKQP limits
NC Not calculable

8260

## SAMPLE MS RESULTS SUMMARY

Lab ID: E22-03122-001
Client ID: MW-1
Date Received: NA
Date Analyzed: 06/06/2022
Sample Data file: K6342.D
Sample MS Data file: K6338.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1
Dilution Factor: 1

| Compound | Conc. Add | Sample | Conc. MS | %Rec. MS | # | Rec. Limits |
|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 50.0 | 0.00 | 56.80 | 114 | | 46-125 |
| Chloromethane | 50.0 | 0.00 | 47.90 | 96 | | 42-131 |
| Vinyl chloride | 50.0 | 0.00 | 51.80 | 104 | | 49-146 |
| Bromomethane | 50.0 | 0.00 | 48.80 | 98 | | 44-159 |
| Chloroethane | 50.0 | 0.00 | 48.20 | 96 | | 43-160 |
| Trichlorofluoromethane | 50.0 | 0.00 | 55.30 | 111 | | 47-153 |
| Acrolein | 150.0 | 0.00 | 145.50 | 97 | | 9-162 |
| 1,1-Dichloroethene | 50.0 | 0.00 | 49.60 | 99 | | 49-155 |
| Acetone | 100.0 | 0.00 | 83.50 | 84 | | 29-181 |
| Carbon disulfide | 50.0 | 0.00 | 49.50 | 99 | | 48-152 |
| Vinyl acetate | 50.0 | 0.00 | 49.90 | 100 | | 22-176 |
| Methylene chloride | 50.0 | 0.00 | 49.90 | 100 | | 38-160 |
| Acrylonitrile | 150.0 | 0.00 | 157.00 | 105 | | 45-177 |
| tert-Butyl alcohol (TBA) | 100.0 | 0.00 | 111.70 | 112 | | 33-164 |
| trans-1,2-Dichloroethene | 50.0 | 0.00 | 48.50 | 97 | | 45-154 |
| Methyl tert-butyl ether (MTBE | 50.0 | 0.00 | 53.00 | 106 | | 49-153 |
| 1,1-Dichloroethane | 50.0 | 0.00 | 48.50 | 97 | | 43-147 |
| Diisopropyl ether (DIPE) | 50.0 | 0.00 | 50.90 | 102 | | 52-138 |
| cis-1,2-Dichloroethene | 50.0 | 0.00 | 48.30 | 97 | | 49-143 |
| 2,2-Dichloropropane | 50.0 | 0.00 | 52.10 | 104 | | 42-140 |
| 2-Butanone (MEK) | 100.0 | 0.00 | 87.50 | 88 | | 42-141 |
| Bromochloromethane | 50.0 | 0.00 | 49.60 | 99 | | 45-153 |
| Chloroform | 50.0 | 0.00 | 48.60 | 97 | | 40-152 |
| 1,1,1-Trichloroethane | 50.0 | 0.00 | 53.10 | 106 | | 41-151 |
| Carbon tetrachloride | 50.0 | 0.00 | 56.00 | 112 | | 39-153 |
| 1,1-Dichloropropene | 50.0 | 0.00 | 48.60 | 97 | | 44-140 |
| 1,2-Dichloroethane (EDC) | 50.0 | 0.00 | 49.00 | 98 | | 49-140 |
| Benzene | 50.0 | 0.00 | 49.70 | 99 | | 47-145 |
| Trichloroethene | 50.0 | 0.00 | 53.50 | 107 | | 40-158 |
| 1,2-Dichloropropane | 50.0 | 0.00 | 48.10 | 96 | | 44-149 |
| Dibromomethane | 50.0 | 0.00 | 50.90 | 102 | | 48-147 |
| 1,4-Dioxane | 1500.0 | 0.00 | 1252.00 | 83 | | 36-155 |
| Bromodichloromethane | 50.0 | 0.00 | 53.20 | 106 | | 40-159 |
| 2-Chloroethyl vinyl ether | 100.0 | 0.00 | 96.20 | 96 | | 0-176 |
| cis-1,3-Dichloropropene | 50.0 | 0.00 | 52.40 | 105 | | 46-145 |
| 4-Methyl-2-pentanone (MIBK | 100.0 | 0.00 | 111.00 | 111 | | 49-148 |
| Toluene | 50.0 | 0.00 | 51.80 | 104 | | 47-148 |
| trans-1,3-Dichloropropene | 50.0 | 0.00 | 52.10 | 104 | | 43-147 |
| 1,1,2-Trichloroethane | 50.0 | 0.00 | 52.20 | 104 | | 47-147 |
| Tetrachloroethene | 50.0 | 0.00 | 56.40 | 113 | | 35-150 |
| 1,3-Dichloropropane | 50.0 | 0.00 | 50.50 | 101 | | 46-151 |

## SAMPLE MS RESULTS SUMMARY

Lab ID: E22-03122-001
Client ID: MW-1
Date Received: NA
Date Analyzed: 06/06/2022
Sample Data file: K6342.D
Sample MS Data file: K6338.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1
Dilution Factor: 1

| Compound | Conc. Add | Sample | Conc. MS | %Rec. MS | # | Rec. Limits |
|---|---|---|---|---|---|---|
| 2-Hexanone | 100 | 0.00 | 93.70 | 94 | | 49-154 |
| Dibromochloromethane | 50 | 0.00 | 58.60 | 117 | | 39-164 |
| 1,2-Dibromoethane (EDB) | 50 | 0.00 | 54.80 | 110 | | 41-157 |
| Chlorobenzene | 50 | 0.00 | 48.90 | 98 | | 40-150 |
| 1,1,1,2-Tetrachloroethane | 50 | 0.00 | 51.80 | 104 | | 38-162 |
| Ethylbenzene | 50 | 0.00 | 50.30 | 101 | | 39-151 |
| m,p-Xylene | 100 | 0.00 | 102.30 | 102 | | 45-148 |
| o-Xylene | 50 | 0.00 | 50.70 | 101 | | 50-145 |
| Styrene | 50 | 0.00 | 53.50 | 107 | | 44-157 |
| Bromoform | 50 | 0.00 | 53.90 | 108 | | 44-149 |
| Isopropylbenzene | 50 | 0.00 | 53.40 | 107 | | 37-149 |
| 1,1,2,2-Tetrachloroethane | 50 | 0.00 | 44.80 | 90 | | 39-135 |
| Bromobenzene | 50 | 0.00 | 51.30 | 103 | | 47-146 |
| 1,2,3-Trichloropropane | 50 | 0.00 | 50.00 | 100 | | 38-147 |
| n-Propylbenzene | 50 | 0.00 | 51.30 | 103 | | 46-136 |
| 2-Chlorotoluene | 50 | 0.00 | 49.20 | 98 | | 41-143 |
| 1,3,5-Trimethylbenzene | 50 | 0.00 | 51.10 | 102 | | 43-145 |
| 4-Chlorotoluene | 50 | 0.00 | 49.80 | 100 | | 43-140 |
| tert-Butylbenzene | 50 | 0.00 | 52.20 | 104 | | 45-142 |
| 1,2,4-Trimethylbenzene | 50 | 0.00 | 50.70 | 101 | | 43-144 |
| sec-Butylbenzene | 50 | 0.00 | 52.90 | 106 | | 42-137 |
| 1,3-Dichlorobenzene | 50 | 0.00 | 48.40 | 97 | | 50-127 |
| 4-Isopropyltoluene | 50 | 0.00 | 52.80 | 106 | | 50-135 |
| 1,4-Dichlorobenzene | 50 | 0.00 | 49.80 | 100 | | 47-131 |
| n-Butylbenzene | 50 | 0.00 | 51.90 | 104 | | 50-128 |
| 1,2-Dichlorobenzene | 50 | 0.00 | 47.30 | 95 | | 49-134 |
| 1,2-Dibromo-3-chloropropane | 50 | 0.00 | 42.10 | 84 | | 44-134 |
| 1,2,4-Trichlorobenzene | 50 | 0.00 | 41.90 | 84 | | 33-144 |
| Hexachlorobutadiene | 50 | 0.00 | 46.80 | 94 | | 21-166 |
| Naphthalene | 50 | 0.00 | 37.50 | 75 | | 45-134 |
| 1,2,3-Trichlorobenzene | 50 | 0.00 | 37.70 | 75 | | 39-148 |
| 1,1,2-Trichloro-1,2,2-trifluoro | 50 | 0.00 | 49.50 | 99 | | 43-156 |
| Methyl acetate | 50 | 0.00 | 48.00 | 96 | | 36-157 |
| Cyclohexane | 50 | 0.00 | 52.60 | 105 | | 47-132 |
| Methylcyclohexane | 50 | 0.00 | 55.40 | 111 | | 48-131 |

| | Leachate Aqueous/Meoh | Soil/Sediment |
|---|---|---|
| MS Recovery Limits (DKQP) | 70-130 | 70-130 |

# Column used to flag recovery and RPD values that did not meet criteria
* Values outside of QC limits
$ Values outside of NJ DKQP limits
NC Not calculable

## SAMPLE MS RESULTS SUMMARY

Lab ID: E22-03122-001
Client ID: MW-1
Date Received: NA
Date Analyzed: 06/06/2022
Sample Data file: K6342.D
Sample MS Data file: K6338.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1
Dilution Factor: 1

| Compound | Conc. Add | Sample | Conc. MS | %Rec. MS | # | Rec. Limits |
|---|---|---|---|---|---|---|

2-Chloroethyl vinyl ether has zero spike recovery in the MS. This is due to the HCL acid preservation used on the samples. It is a known phenomenon, that this compound decomposes in the presence of acid.

As per SW-846 8260C, up to 10% of the compounds may be out , but may be within 40-160%
As per NJDEP DKQPs, only the following compounds may be in the 40-160% range:
Acetone; Bromomethane; 2-Butanone (MEK); Carbon disulfide; Chloroethane; Chloromethane
1,2-Dibromo-3-chloropropane; Dichlorodifluoromethane; 1,4-Dioxane; 2-Hexanone
Naphthalene; 4-Methyl-2-pentanone (MIBK); Trichlorofluoromethane

| | Leachate Aqueous/Meoh | Soil/Sediment |
|---|---|---|
| MS Recovery Limits (DKQP) | 70-130 | 70-130 |

# Column used to flag recovery and RPD values that did not meet criteria
* Values outside of QC limits
$ Values outside of NJ DKQP limits
NC Not calculable

## SAMPLE DUPLICATE RESULTS SUMMARY

Lab ID: E22-03226-002
Client ID: MW-4
Date Received: 06/02/2022
Date Analyzed: 06/07/2022
Sample Data file: K6349.D
Sample Dup Data file: K6350.D

GC/MS Column: DB-624
Sample wt/vol: 0.25mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 20
Dilution Factor: 20

| Compound | Sample Conc. | Sample Dup Conc. | % RPD # |
|---|---|---|---|
| Dichlorodifluoromethane | 0.00 | 0.00 | NC |
| Chloromethane | 0.00 | 0.00 | NC |
| Vinyl chloride | 0.00 | 0.00 | NC |
| Bromomethane | 0.00 | 0.00 | NC |
| Chloroethane | 0.00 | 0.00 | NC |
| Trichlorofluoromethane | 0.00 | 0.00 | NC |
| Acrolein | 0.00 | 0.00 | NC |
| 1,1-Dichloroethene | 0.00 | 0.00 | NC |
| Acetone | 0.00 | 0.00 | NC |
| Carbon disulfide | 0.00 | 0.00 | NC |
| Vinyl acetate | 0.00 | 0.00 | NC |
| Methylene chloride | 0.00 | 0.00 | NC |
| Acrylonitrile | 0.00 | 0.00 | NC |
| tert-Butyl alcohol (TBA) | 0.00 | 0.00 | NC |
| trans-1,2-Dichloroethene | 0.00 | 0.00 | NC |
| Methyl tert-butyl ether (MTBE) | 0.00 | 0.00 | NC |
| 1,1-Dichloroethane | 0.00 | 0.00 | NC |
| Diisopropyl ether (DIPE) | 0.00 | 0.00 | NC |
| cis-1,2-Dichloroethene | 0.00 | 0.00 | NC |
| 2,2-Dichloropropane | 0.00 | 0.00 | NC |
| 2-Butanone (MEK) | 0.00 | 0.00 | NC |
| Bromochloromethane | 0.00 | 0.00 | NC |
| Chloroform | 0.00 | 0.00 | NC |
| 1,1,1-Trichloroethane | 0.00 | 0.00 | NC |
| Carbon tetrachloride | 0.00 | 0.00 | NC |
| 1,1-Dichloropropene | 0.00 | 0.00 | NC |
| 1,2-Dichloroethane (EDC) | 0.00 | 0.00 | NC |
| Benzene | 2.20 | 2.20 | 0 |
| Trichloroethene | 0.00 | 0.00 | NC |
| 1,2-Dichloropropane | 0.00 | 0.00 | NC |
| Dibromomethane | 0.00 | 0.00 | NC |
| 1,4-Dioxane | 0.00 | 0.00 | NC |
| Bromodichloromethane | 0.00 | 0.00 | NC |
| 2-Chloroethyl vinyl ether | 0.00 | 0.00 | NC |
| cis-1,3-Dichloropropene | 0.00 | 0.00 | NC |
| 4-Methyl-2-pentanone (MIBK) | 0.00 | 0.00 | NC |
| Toluene | 1.00 | 1.10 | 10 |
| trans-1,3-Dichloropropene | 0.00 | 0.00 | NC |
| 1,1,2-Trichloroethane | 0.00 | 0.00 | NC |
| Tetrachloroethene | 0.00 | 0.00 | NC |
| 1,3-Dichloropropane | 0.00 | 0.00 | NC |

## SAMPLE DUPLICATE RESULTS SUMMARY

Lab ID: E22-03226-002
Client ID: MW-4
Date Received: 06/02/2022
Date Analyzed: 06/07/2022
Sample Data file: K6349.D
Sample Dup Data file: K6350.D

GC/MS Column: DB-624
Sample wt/vol: 0.25mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 20
Dilution Factor: 20

| Compound | Sample Conc. | Sample Dup Conc. | % RPD | # |
|---|---|---|---|---|
| 2-Hexanone | 0.00 | 0.00 | NC | |
| Dibromochloromethane | 0.00 | 0.00 | NC | |
| 1,2-Dibromoethane (EDB) | 0.00 | 0.00 | NC | |
| Chlorobenzene | 0.00 | 0.00 | NC | |
| 1,1,1,2-Tetrachloroethane | 0.00 | 0.00 | NC | |
| Ethylbenzene | 84.10 | 84.70 | 1 | |
| m,p-Xylene | 285.60 | 291.10 | 2 | |
| o-Xylene | 20.50 | 20.90 | 2 | |
| Styrene | 0.00 | 0.00 | NC | |
| Bromoform | 0.00 | 0.00 | NC | |
| Isopropylbenzene | 6.30 | 6.60 | 5 | |
| 1,1,2,2-Tetrachloroethane | 0.00 | 0.00 | NC | |
| Bromobenzene | 0.00 | 0.00 | NC | |
| 1,2,3-Trichloropropane | 0.00 | 0.00 | NC | |
| n-Propylbenzene | 0.00 | 0.00 | NC | |
| 2-Chlorotoluene | 0.00 | 0.00 | NC | |
| 1,3,5-Trimethylbenzene | 0.00 | 0.00 | NC | |
| 4-Chlorotoluene | 0.00 | 0.00 | NC | |
| tert-Butylbenzene | 0.00 | 0.00 | NC | |
| 1,2,4-Trimethylbenzene | 146.70 | 149.80 | 2 | |
| sec-Butylbenzene | 0.00 | 0.00 | NC | |
| 1,3-Dichlorobenzene | 0.00 | 0.00 | NC | |
| 4-Isopropyltoluene | 0.00 | 0.00 | NC | |
| 1,4-Dichlorobenzene | 0.00 | 0.00 | NC | |
| n-Butylbenzene | 0.00 | 0.00 | NC | |
| 1,2-Dichlorobenzene | 0.00 | 0.00 | NC | |
| 1,2-Dibromo-3-chloropropane | 0.00 | 0.00 | NC | |
| 1,2,4-Trichlorobenzene | 0.00 | 0.00 | NC | |
| Hexachlorobutadiene | 0.00 | 0.00 | NC | |
| Naphthalene | 25.50 | 25.30 | 1 | |
| 1,2,3-Trichlorobenzene | 0.00 | 0.00 | NC | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.00 | 0.00 | NC | |
| Methyl acetate | 0.00 | 0.00 | NC | |
| Cyclohexane | 3.00 | 3.80 | 24 | |
| Methylcyclohexane | 2.90 | 3.20 | 10 | |

Sample/Sample Dup RPD Limits 30

# Column used to flag recovery and RPD values that did not meet criteria
* Values outside of QC limits
NC Not calculable

## VOLATILE METHOD BLANK SUMMARY

Lab File ID: K6336.D Instrument ID: MSD_K

Date Analyzed: 06/06/2022 Time Analyzed: 19:49

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS & MSD:

| Client ID | Lab Sample ID | Date Analyzed | Time Analyzed |
|---|---|---|---|
| LCSA220606-01 | LCSA220606-01 | 06/06/2022 | 20:18 |
| E22-03122-001MS | E22-03122-001MS | 06/06/2022 | 20:47 |
| AR-KO1 | E22-03195-001 | 06/06/2022 | 21:45 |
| AR-KO2 | E22-03195-002 | 06/06/2022 | 22:14 |
| MW-1 | E22-03122-001 | 06/06/2022 | 22:43 |
| MW-2 | E22-03122-002 | 06/06/2022 | 23:12 |
| MW-3 | E22-03122-003 | 06/06/2022 | 23:41 |
| MW-13D-06012 | E22-03213-001 | 06/07/2022 | 0:10 |
| FB-060122 | E22-03213-002 | 06/07/2022 | 0:39 |
| TB-060122 | E22-03213-003 | 06/07/2022 | 1:08 |
| MW-3 | E22-03226-001 | 06/07/2022 | 1:37 |
| MW-4 | E22-03226-002 | 06/07/2022 | 2:06 |
| MW-4 | E22-03226-002DUP | 06/07/2022 | 2:35 |
| MW-7 | E22-03226-003 | 06/07/2022 | 3:04 |
| TB | E22-03226-004 | 06/07/2022 | 3:33 |
| TB | E22-03269-001 | 06/07/2022 | 4:02 |
| FB | E22-03269-002 | 06/07/2022 | 4:31 |
| MW-3/13.60 | E22-03269-003 | 06/07/2022 | 5:00 |
| DUPLICATE | E22-03269-004 | 06/07/2022 | 5:29 |

FORM 4

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

Lab File ID: K6062.D

BFB Injection Date: 05/24/2022

Inst ID: MSD_K

BFB Injection Time: 12:24

| m/z | Ion Abudance Criteria | %Relative Abundance | |
|---|---|---|---|
| 95 | 50 - 200% of mass 174 | 100 | |
| 96 | 5.0 - 9.0% of mass 95 | 6.4 | |
| 173 | Less than 2.0% of mass 174 | 0.8 | ( 0.7 )1 |
| 174 | 50 - 200% of mass 95 | 85.3 | |
| 175 | 5.0 - 9.0% of mass 174 | 6.4 | ( 7.5 )1 |
| 176 | 95.0 - 105.0% of mass 174 | 82.1 | ( 96.3 )1 |
| 177 | 5.0 - 10.0% of mass 176 | 5.4 | ( 6.6 )2 |
| | 1-Value is % mass 174 | 2-Value is % mass 176 | |

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

| Client ID | Lab Sample ID | File ID | Date Analyzed | Time Analyzed |
|---|---|---|---|---|
| ICC100 | ICC220524 | K6067.D | 05/24/2022 | 14:48 |
| ICC00.5 | ICC220524 | K6063.D | 05/24/2022 | 12:53 |
| ICC001 | ICC220524 | K6064.D | 05/24/2022 | 13:22 |
| ICC005 | ICC220524 | K6065.D | 05/24/2022 | 13:51 |
| ICC020 | ICC220524 | K6066.D | 05/24/2022 | 14:19 |
| ICC150 | ICC220524 | K6068.D | 05/24/2022 | 15:17 |
| ICC200 | ICC220524 | K6069.D | 05/24/2022 | 15:47 |
| ICV100 | ICV220524 | K6070.D | 05/24/2022 | 16:16 |

FORM 5

## VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

Lab File ID: K6332.D
BFB Injection Date: 06/06/2022
Inst ID: MSD_K
BFB Injection Time: 17:54

| m/z | Ion Abudance Criteria | %Relative Abundance | |
|---|---|---|---|
| 95 | 50 - 200% of mass 174 | 100 | |
| 96 | 5.0 - 9.0% of mass 95 | 6.7 | |
| 173 | Less than 2.0% of mass 174 | 1.2 | ( 1.1 )1 |
| 174 | 50 - 200% of mass 95 | 88.7 | |
| 175 | 5.0 - 9.0% of mass 174 | 7.0 | ( 7.9 )1 |
| 176 | 95.0 - 105.0% of mass 174 | 89.5 | ( 100.9 )1 |
| 177 | 5.0 - 10.0% of mass 176 | 5.5 | ( 6.2 )2 |
| | 1-Value is % mass 174 | 2-Value is % mass 176 | |

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

| Client ID | Lab Sample ID | File ID | Date Analyzed | Time Analyzed |
|---|---|---|---|---|
| CCV100 | CCV220606-01 | K6333.D | 06/06/2022 | 18:23 |
| BLKA220606-01 | BLKA220606-01 | K6336.D | 06/06/2022 | 19:49 |
| LCSA220606-01 | LCSA220606-01 | K6337.D | 06/06/2022 | 20:18 |
| E22-03122-001MS | E22-03122-001MS | K6338.D | 06/06/2022 | 20:47 |
| AR-KO1 | E22-03195-001 | K6340.D | 06/06/2022 | 21:45 |
| AR-KO2 | E22-03195-002 | K6341.D | 06/06/2022 | 22:14 |
| MW-1 | E22-03122-001 | K6342.D | 06/06/2022 | 22:43 |
| MW-2 | E22-03122-002 | K6343.D | 06/06/2022 | 23:12 |
| MW-3 | E22-03122-003 | K6344.D | 06/06/2022 | 23:41 |
| MW-13D-06012 | E22-03213-001 | K6345.D | 06/07/2022 | 0:10 |
| FB-060122 | E22-03213-002 | K6346.D | 06/07/2022 | 0:39 |
| TB-060122 | E22-03213-003 | K6347.D | 06/07/2022 | 1:08 |
| MW-3 | E22-03226-001 | K6348.D | 06/07/2022 | 1:37 |
| MW-4 | E22-03226-002 | K6349.D | 06/07/2022 | 2:06 |
| MW-4 | E22-03226-002DU | K6350.D | 06/07/2022 | 2:35 |
| MW-7 | E22-03226-003 | K6351.D | 06/07/2022 | 3:04 |
| TB | E22-03226-004 | K6352.D | 06/07/2022 | 3:33 |
| TB | E22-03269-001 | K6353.D | 06/07/2022 | 4:02 |
| FB | E22-03269-002 | K6354.D | 06/07/2022 | 4:31 |
| MW-3/13.60 | E22-03269-003 | K6355.D | 06/07/2022 | 5:00 |

## VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

Lab File ID: K6332.D
BFB Injection Date : 06/06/202
Inst ID: MSD_K
BFB Injection Time: 17:54

| m/z | Ion Abudance Criteria | %Relative Abundance | | | |
|---|---|---|---|---|---|
| 50 | | 24.6 | | | |
| 75 | | 52.0 | | | |
| 95 | 50 - 200% of mass 174 | 100.0 | | | |
| 96 | 5.0 - 9.0% of mass 95 | 6.7 | | | |
| 173 | Less than 2.0% of mass 174 | 1.2 | ( | 1.1 | )1 |
| 174 | 50 - 200% of mass 95 | 88.7 | | | |
| 175 | 5.0 - 9.0% of mass 174 | 7.0 | ( | 7.9 | )1 |
| 176 | 95.0 - 105.0% of mass 174 | 89.5 | ( | 100.9 | )1 |
| 177 | 5.0 - 10.0% of mass 176 | 5.5 | ( | 6.2 | )2 |
| | 1-Value is % mass 174 | 2-Value is % mass 176 | | | |

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

| Client ID | Lab Sample ID | File ID | Date Analyzed | Time Analyzed |
|---|---|---|---|---|
| DUPLICATE | E22-03269-004 | K6356.D | 06/07/2022 | 5:29 |

Response Factor Report K_MSD

Method Path : C:\MSDCHEM\1\METHODS\
Method File : K8220524.M
Title : VOLATILE ORGANICS BY EPA METHOD 8260D
Last Update : Wed May 25 09:52:43 2022
Response Via : Initial Calibration

Calibration Files
0.5 =K6063.D 1.0 =K6064.D 5.0 =K6065.D
20. =K6066.D 100 =K6067.D 150 =K6068.D 200 =K6069.D

| | | Compound | 0.5 | 1.0 | 5.0 | 20. | 100 | 150 | 200 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) | I | Pentafluorobenzene | ---------- | ISTD | ---------- | | | | | | |
| 2) | T | Dichlorodifluorom | | 0.557 | 0.441 | 0.591 | 0.634 | 0.631 | 0.641 | 0.582 | 13.10 |
| 3) | P | Chloromethane | 1.104 | 1.144 | 1.101 | 1.233 | 1.156 | 1.114 | 1.067 | 1.131 | 4.72 |
| 4) | C | Vinyl chloride | | 0.870 | 0.782 | 0.914 | 0.906 | 0.908 | 0.876 | 0.876 | 5.67 |
| 5) | T | Bromomethane | | 0.539 | 0.568 | 0.659 | 0.708 | 0.692 | 0.674 | 0.640 | 10.87 |
| 6) | T | Chloroethane | 0.637 | 0.496 | 0.495 | 0.599 | 0.641 | 0.641 | 0.631 | 0.592 | 11.37 |
| 7) | T | Trichlorofluorome | | 0.922 | 0.882 | 1.087 | 1.288 | 1.308 | 1.095 | 1.097 | 16.18 |
| 8) | T | Acrolein | 0.035 | 0.041 | 0.033 | 0.025 | 0.034 | 0.033 | 0.033 | 0.033 | 13.98 |
| 9) | MC | 1,1-Dichloroethen | 0.719 | 0.593 | 0.555 | 0.646 | 0.697 | 0.700 | 0.727 | 0.662 | 10.05 |
| 10) | T | Acetone | | 1.752 | 1.660 | 1.688 | 1.877 | 1.770 | 1.681 | 1.738 | 4.63 |
| 11) | T | Carbon disulfide | | 1.854 | 2.009 | 2.243 | 2.404 | 2.446 | 2.510 | 2.244 | 11.70 |
| 12) | T | Vinyl acetate | | 0.511 | 0.514 | 0.582 | 0.592 | 0.571 | 0.576 | 0.558 | 6.37 |
| 13) | T | Methylene chlorid | | 0.696 | 0.645 | 0.451 | 0.667 | 0.640 | 0.602 | 0.617 | 14.10 |
| 14) | T | Acrylonitrile | 0.289 | 0.303 | 0.313 | 0.327 | 0.339 | 0.319 | 0.313 | 0.315 | 5.11 |
| 15) | T | tert-Butyl alcoho | | 0.451 | 0.369 | 0.337 | 0.433 | 0.414 | 0.392 | 0.399 | 10.53 |
| 16) | T | trans-1,2-Dichlor | 0.645 | 0.559 | 0.603 | 0.657 | 0.637 | 0.632 | 0.631 | 0.624 | 5.24 |
| 17) | T | Methyl tert-butyl | 1.638 | 1.798 | 1.847 | 2.113 | 2.159 | 2.112 | 2.122 | 1.970 | 10.46 |
| 18) | P | 1,1-Dichloroethan | 1.087 | 1.109 | 1.142 | 1.292 | 1.263 | 1.229 | 1.222 | 1.192 | 6.64 |
| 19) | T | Diisopropyl ether | 2.515 | 2.473 | 2.652 | 3.019 | 3.084 | 2.961 | 2.933 | 2.805 | 9.00 |
| 20) | T | cis-1,2-Dichloroe | 0.690 | 0.660 | 0.666 | 0.750 | 0.736 | 0.725 | 0.722 | 0.707 | 4.96 |
| 21) | T | 2,2-Dichloropropa | | 0.550 | 0.509 | 0.588 | 0.560 | 0.547 | 0.484 | 0.540 | 6.93 |
| 22) | T | 2-Butanone (MEK) | | 1.349 | 1.409 | 1.463 | 1.575 | 1.464 | 1.415 | 1.446 | 5.26 |
| 23) | T | Bromochloromethan | | 0.368 | 0.317 | 0.362 | 0.366 | 0.352 | 0.352 | 0.353 | 5.28 |
| 25) | C | Chloroform | 1.186 | 1.118 | 1.091 | 1.237 | 1.223 | 1.193 | 1.181 | 1.176 | 4.52 |
| 26) | T | 1,1,1-Trichloroet | 0.866 | 0.703 | 0.772 | 0.953 | 0.964 | 0.967 | 0.934 | 0.880 | 11.93 |
| 27) | T | Carbon tetrachlor | 0.717 | 0.657 | 0.684 | 0.830 | 0.879 | 0.892 | 0.887 | 0.792 | 13.00 |
| 28) | T | 1,1-Dichloroprope | 0.904 | 0.781 | 0.744 | 0.856 | 0.842 | 0.847 | 0.854 | 0.832 | 6.37 |
| 29) | T | 1,2-Dichloroethan | 0.963 | 1.054 | 1.067 | 1.159 | 1.150 | 1.108 | 1.102 | 1.086 | 6.16 |
| 30) | S | 1,2-Dichloroethan | 0.786 | 0.778 | 0.770 | 0.788 | 0.736 | 0.714 | 0.711 | 0.755 | 4.46 |
| 31) | I | 1,4-Difluorobenzene | ---------- | ISTD | ---------- | | | | | | |
| 32) | M | Benzene | 1.659 | 1.333 | 1.554 | 1.657 | 1.687 | 1.697 | 1.714 | 1.615 | 8.35 |
| 33) | M | Trichloroethene | 0.454 | 0.388 | 0.419 | 0.434 | 0.450 | 0.453 | 0.456 | 0.436 | 5.77 |
| 34) | C | 1,2-Dichloropropa | 0.511 | 0.450 | 0.452 | 0.468 | 0.503 | 0.496 | 0.495 | 0.482 | 5.22 |
| 35) | T | Dibromomethane | 0.270 | 0.277 | 0.278 | 0.302 | 0.318 | 0.315 | 0.312 | 0.296 | 6.88 |
| 36) | T | 1,4-Dioxane | 0.011 | 0.010 | 0.012 | 0.009 | 0.012 | 0.011 | 0.012 | 0.011 | 8.00 |
| 37) | T | Bromodichlorometh | 0.524 | 0.465 | 0.507 | 0.577 | 0.632 | 0.631 | 0.627 | 0.566 | 12.03 |
| 38) | T | 2-Chloroethyl vin | 0.255 | 0.225 | 0.226 | 0.234 | 0.252 | 0.248 | 0.248 | 0.241 | 5.22 |
| 39) | T | cis-1,3-Dichlorop | | 0.505 | 0.569 | 0.641 | 0.751 | 0.743 | 0.733 | 0.657 | 15.71 |
| 40) | T | 4-Methyl-2-pentan | 0.734 | 0.792 | 0.974 | 0.992 | 1.180 | 1.144 | 1.106 | 0.989 | 17.44 |
| 41) | S | Toluene-d8 | 1.257 | 1.273 | 1.301 | 1.250 | 1.295 | 1.282 | 1.281 | 1.277 | 1.45 |
| 42) | MC | Toluene | 0.906 | 0.943 | 0.966 | 0.975 | 1.064 | 1.073 | 1.080 | 1.001 | 7.02 |
| 43) | T | trans-1,3-Dichlor | | 0.642 | 0.522 | 0.592 | 0.736 | 0.734 | 0.736 | 0.660 | 13.71 |
| 44) | T | 1,1,2-Trichloroet | 0.307 | 0.330 | 0.349 | 0.345 | 0.387 | 0.385 | 0.379 | 0.355 | 8.65 |
| 45) | T | Tetrachloroethene | 0.401 | 0.411 | 0.379 | 0.402 | 0.454 | 0.468 | 0.476 | 0.427 | 8.85 |
| 46) | T | 1,3-Dichloropropa | 0.686 | 0.633 | 0.672 | 0.686 | 0.779 | 0.770 | 0.763 | 0.713 | 8.03 |
| 47) | T | 2-Hexanone | 0.873 | 0.813 | 1.006 | 0.963 | 1.173 | 1.112 | 1.061 | 1.000 | 12.83 |
| 48) | T | Dibromochlorometh | 0.354 | 0.318 | 0.367 | 0.405 | 0.503 | 0.499 | 0.502 | 0.421 | 18.82 |
| 49) | T | 1,2-Dibromoethane | 0.400 | 0.384 | 0.432 | 0.440 | 0.520 | 0.511 | 0.506 | 0.456 | 12.27 |
| 50) | I | Chlorobenzene-d5 | ---------- | ISTD | ---------- | | | | | | |
| 51) | MP | Chlorobenzene | 1.051 | 1.045 | 1.111 | 1.160 | 1.194 | 1.190 | 1.197 | 1.136 | 5.87 |
| 52) | T | 1,1,1,2-Tetrachlo | 0.363 | 0.372 | 0.374 | 0.430 | 0.449 | 0.446 | 0.448 | 0.412 | 9.69 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 53) | C | Ethylbenzene | 1.772 | 1.642 | 1.810 | 1.949 | 2.009 | 2.005 | 2.023 | 1.887 | 7.80 |
| 54) | T | m,p-Xylene | 0.674 | 0.622 | 0.693 | 0.745 | 0.786 | 0.805 | 0.823 | 0.735 | 10.16 |
| 55) | T | o-Xylene | 0.656 | 0.589 | 0.714 | 0.748 | 0.781 | 0.788 | 0.801 | 0.725 | 10.80 |
| 56) | T | Styrene | 0.869 | 0.927 | 1.117 | 1.251 | 1.387 | 1.395 | 1.419 | 1.195 | 19.14 |
| 57) | P | Bromoform | 0.364 | 0.343 | 0.322 | 0.328 | 0.390 | 0.339 | 0.364 | 0.350 | 6.82 |
| 58) | T | Isopropylbenzene | 1.536 | 1.403 | 1.586 | 1.876 | 1.944 | 1.957 | 1.986 | 1.755 | 13.65 |
| 59) | S | Bromofluorobenzen | 0.483 | 0.507 | 0.505 | 0.504 | 0.492 | 0.491 | 0.486 | 0.495 | 2.00 |
| 60) | P | 1,1,2,2-Tetrachlo | | 0.624 | 0.659 | 0.733 | 0.776 | 0.765 | 0.754 | 0.718 | 8.70 |
| 61) | T | Bromobenzene | 0.468 | 0.428 | 0.471 | 0.503 | 0.515 | 0.513 | 0.513 | 0.487 | 6.77 |
| 62) | T | 1,2,3-Trichloropr | 0.524 | 0.546 | 0.640 | 0.666 | 0.672 | 0.657 | 0.645 | 0.621 | 9.73 |
| 63) | T | n-Propylbenzene | 2.257 | 1.685 | 1.990 | 2.205 | 2.275 | 2.269 | 2.294 | 2.139 | 10.55 |
| 64) | T | 2-Chlorotoluene | 1.367 | 1.161 | 1.276 | 1.374 | 1.364 | 1.355 | 1.366 | 1.323 | 5.98 |
| 65) | T | 1,3,5-Trimethylbe | 1.436 | 1.157 | 1.456 | 1.605 | 1.624 | 1.694 | 1.727 | 1.528 | 12.91 |
| 66) | T | 4-Chlorotoluene | 1.649 | 1.365 | 1.578 | 1.612 | 1.669 | 1.697 | 1.714 | 1.612 | 7.35 |
| 67) | T | tert-Butylbenzene | 1.251 | 1.058 | 1.141 | 1.353 | 1.384 | 1.418 | 1.453 | 1.294 | 11.51 |
| 68) | T | 1,2,4-Trimethylbe | 1.495 | 1.210 | 1.482 | 1.660 | 1.641 | 1.663 | 1.678 | 1.547 | 10.96 |
| 69) | T | sec-Butylbenzene | 1.848 | 1.373 | 1.596 | 1.886 | 1.934 | 1.994 | 2.036 | 1.810 | 13.25 |
| 70) | T | 1,3-Dichlorobenze | 1.224 | 0.834 | 0.949 | 1.013 | 1.009 | 1.016 | 1.021 | 1.009 | 11.49 |
| 71) | T | 4-Isopropyltoluen | 1.558 | 1.291 | 1.503 | 1.717 | 1.746 | 1.783 | 1.828 | 1.632 | 11.72 |
| 72) | T | 1,4-Dichlorobenze | 1.146 | 0.808 | 0.993 | 1.023 | 1.032 | 1.019 | 1.025 | 1.007 | 9.98 |
| 73) | T | n-Butylbenzene | 1.289 | 1.009 | 1.240 | 1.447 | 1.515 | 1.573 | 1.618 | 1.384 | 15.68 |
| 74) | T | 1,2-Dichlorobenze | 1.105 | 0.863 | 0.919 | 0.996 | 0.994 | 1.006 | 1.018 | 0.986 | 7.80 |
| 75) | T | 1,2-Dibromo-3-chl | | 0.134 | 0.138 | 0.157 | 0.178 | 0.180 | 0.180 | 0.161 | 13.29 |
| 76) | T | 1,2,4-Trichlorobe | | 0.530 | 0.588 | 0.616 | 0.612 | 0.642 | 0.671 | 0.610 | 7.88 |
| 77) | T | Hexachlorobutadie | | | 0.195 | 0.199 | 0.201 | 0.211 | 0.225 | 0.206 | 5.93 |
| 78) | T | Naphthalene | | 1.437 | 1.846 | 2.127 | 2.003 | 2.115 | 2.197 | 1.954 | 14.41 |
| 79) | T | 1,2,3-Trichlorobe | | 0.526 | 0.564 | 0.598 | 0.533 | 0.564 | 0.589 | 0.562 | 5.16 |
| 80) | T | 1,1,2-Trichloro-1 | | 0.440 | 0.354 | 0.494 | 0.503 | 0.521 | 0.480 | 0.465 | 13.04 |
| 81) | T | Methyl acetate | 0.821 | 0.887 | 0.872 | 0.946 | 0.973 | 0.964 | 1.005 | 0.924 | 7.09 |
| 82) | T | Cyclohexane | | 0.731 | 0.577 | 0.868 | 0.832 | 0.828 | 0.832 | 0.778 | 13.97 |
| 83) | T | Methylcyclohexane | | 0.522 | 0.437 | 0.629 | 0.638 | 0.644 | 0.666 | 0.589 | 15.29 |

(#) = Out of Range ### Number of calibration levels exceeded format ###

K8220524.M Wed May 25 15:33:41 2022

Evaluate Continuing Calibration Report

Data Path : C:\MSDCHEM\1\DATA\22-05-24\
Data File : K6070.D
Acq On : 24 May 2022 16:16
Operator : BARBARA
Sample : ICV100,ICV220524,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 25 09:53:07 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Wed May 25 09:52:43 2022
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Pentafluorobenzene | 1.000 | 1.000 | 0.0 | 123 | 0.00 |
| 2 | T | Dichlorodifluoromethane | 0.582 | 0.653 | -12.2 | 126 | 0.00 |
| 3 | P | Chloromethane | 1.131 | 1.130 | 0.1 | 120 | 0.00 |
| 4 | C | Vinyl chloride | 0.876 | 0.942 | -7.5 | 128 | 0.00 |
| 5 | T | Bromomethane | 0.640 | 0.685 | -7.0 | 119 | 0.00 |
| 6 | T | Chloroethane | 0.592 | 0.628 | -6.1 | 120 | 0.00 |
| 7 | T | Trichlorofluoromethane | 1.097 | 1.283 | -17.0 | 122 | 0.00 |
| 8 | T | Acrolein | 0.033 | 0.030 | 9.1 | 110 | 0.00 |
| 9 | MC | 1,1-Dichloroethene | 0.662 | 0.707 | -6.8 | 125 | 0.01 |
| 10 | T | Acetone | 1.738 | 1.583 | 8.9 | 104 | 0.00 |
| 11 | T | Carbon disulfide | 2.244 | 2.417 | -7.7 | 123 | 0.00 |
| 12 | T | Vinyl acetate | 0.558 | 0.551 | 1.3 | 114 | 0.00 |
| 13 | T | Methylene chloride | 0.617 | 0.567 | 8.1 | 104 | 0.00 |
| 14 | T | Acrylonitrile | 0.315 | 0.302 | 4.1 | 109 | 0.00 |
| 15 | T | tert-Butyl alcohol (TBA) | 0.399 | 0.409 | -2.5 | 116 | 0.00 |
| 16 | T | trans-1,2-Dichloroethene | 0.624 | 0.627 | -0.5 | 121 | 0.00 |
| 17 | T | Methyl tert-butyl ether (MT | 1.970 | 2.069 | -5.0 | 118 | 0.00 |
| 18 | P | 1,1-Dichloroethane | 1.192 | 1.204 | -1.0 | 117 | 0.00 |
| 19 | T | Diisopropyl ether (DIPE) | 2.805 | 2.831 | -0.9 | 113 | 0.00 |
| 20 | T | cis-1,2-Dichloroethene | 0.707 | 0.713 | -0.8 | 119 | 0.00 |
| 21 | T | 2,2-Dichloropropane | 0.540 | 0.518 | 4.1 | 114 | 0.00 |
| 22 | T | 2-Butanone (MEK) | 1.446 | 1.351 | 6.6 | 105 | 0.00 |
| 23 | T | Bromochloromethane | 0.353 | 0.343 | 2.8 | 115 | 0.00 |
| 25 | C | Chloroform | 1.176 | 1.134 | 3.6 | 114 | 0.00 |
| 26 | T | 1,1,1-Trichloroethane | 0.880 | 0.937 | -6.5 | 119 | 0.00 |
| 27 | T | Carbon tetrachloride | 0.792 | 0.866 | -9.3 | 121 | 0.00 |
| 28 | T | 1,1-Dichloropropene | 0.832 | 0.823 | 1.1 | 120 | 0.00 |
| 29 | T | 1,2-Dichloroethane (EDC) | 1.086 | 1.057 | 2.7 | 113 | 0.00 |
| 30 | S | 1,2-Dichloroethane-d4 | 0.755 | 0.691 | 8.5 | 115 | 0.00 |
| 31 | I | 1,4-Difluorobenzene | 1.000 | 1.000 | 0.0 | 119 | 0.00 |
| 32 | M | Benzene | 1.615 | 1.682 | -4.1 | 119 | 0.00 |
| 33 | M | Trichloroethene | 0.436 | 0.446 | -2.3 | 118 | 0.00 |
| 34 | C | 1,2-Dichloropropane | 0.482 | 0.480 | 0.4 | 114 | 0.00 |
| 35 | T | Dibromomethane | 0.296 | 0.308 | -4.1 | 116 | 0.00 |
| 36 | T | 1,4-Dioxane | 0.011 | 0.011 | 0.0 | 110 | 0.00 |
| 37 | T | Bromodichloromethane | 0.566 | 0.617 | -9.0 | 116 | 0.00 |
| 38 | T | 2-Chloroethyl vinyl ether | 0.241 | 0.240 | 0.4 | 114 | 0.00 |
| 39 | T | cis-1,3-Dichloropropene | 0.657 | 0.715 | -8.8 | 113 | 0.00 |
| 40 | T | 4-Methyl-2-pentanone (MIBK) | 0.989 | 1.068 | -8.0 | 108 | 0.00 |
| 41 | S | Toluene-d8 | 1.277 | 1.271 | 0.5 | 117 | 0.00 |
| 42 | MC | Toluene | 1.001 | 1.055 | -5.4 | 118 | 0.00 |
| 43 | T | trans-1,3-Dichloropropene | 0.660 | 0.703 | -6.5 | 114 | 0.00 |
| 44 | T | 1,1,2-Trichloroethane | 0.355 | 0.370 | 4.2 | 114 | 0.00 |
| 45 | T | Tetrachloroethene | 0.427 | 0.476 | -11.5 | 125 | 0.00 |
| 46 | T | 1,3-Dichloropropane | 0.713 | 0.745 | -4.5 | 114 | 0.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 47 T | 2-Hexanone | 1.000 | 1.028 | -2.8 | 104 | 0.00 |
| 48 T | Dibromochloromethane | 0.421 | 0.490 | -16.4 | 116 | 0.00 |
| 49 T | 1,2-Dibromoethane (EDB) | 0.456 | 0.501 | -9.9 | 115 | 0.00 |
| 50 I | Chlorobenzene-d5 | 1.000 | 1.000 | 0.0 | 119 | 0.00 |
| 51 MP | Chlorobenzene | 1.136 | 1.181 | -4.0 | 118 | 0.00 |
| 52 T | 1,1,1,2-Tetrachloroethane | 0.412 | 0.441 | -7.0 | 117 | 0.00 |
| 53 C | Ethylbenzene | 1.887 | 1.990 | -5.5 | 118 | 0.00 |
| 54 T | m,p-Xylene | 0.735 | 0.783 | -6.5 | 119 | 0.00 |
| 55 T | o-Xylene | 0.725 | 0.762 | -5.1 | 116 | 0.00 |
| 56 T | Styrene | 1.195 | 1.340 | -12.1 | 115 | 0.00 |
| 57 P | Bromoform | 0.350 | 0.381 | -8.9 | 116 | 0.00 |
| 58 T | Isopropylbenzene | 1.755 | 1.936 | -10.3 | 119 | 0.00 |
| 59 S | Bromofluorobenzene | 0.495 | 0.482 | 2.6 | 117 | 0.00 |
| 60 P | 1,1,2,2-Tetrachloroethane | 0.718 | 0.738 | -2.8 | 113 | 0.00 |
| 61 T | Bromobenzene | 0.487 | 0.506 | -3.9 | 117 | 0.00 |
| 62 T | 1,2,3-Trichloropropane | 0.621 | 0.641 | -3.2 | 114 | 0.00 |
| 63 T | n-Propylbenzene | 2.139 | 2.243 | -4.9 | 117 | 0.00 |
| 64 T | 2-Chlorotoluene | 1.323 | 1.326 | -0.2 | 116 | 0.00 |
| 65 T | 1,3,5-Trimethylbenzene | 1.528 | 1.600 | -4.7 | 117 | 0.00 |
| 66 T | 4-Chlorotoluene | 1.612 | 1.621 | -0.6 | 116 | 0.00 |
| 67 T | tert-Butylbenzene | 1.294 | 1.363 | -5.3 | 117 | 0.00 |
| 68 T | 1,2,4-Trimethylbenzene | 1.547 | 1.598 | -3.3 | 116 | 0.00 |
| 69 T | sec-Butylbenzene | 1.810 | 1.924 | -6.3 | 118 | 0.00 |
| 70 T | 1,3-Dichlorobenzene | 1.009 | 0.993 | 1.6 | 117 | 0.00 |
| 71 T | 4-Isopropyltoluene | 1.632 | 1.725 | -5.7 | 118 | 0.00 |
| 72 T | 1,4-Dichlorobenzene | 1.007 | 1.006 | 0.1 | 116 | 0.00 |
| 73 T | n-Butylbenzene | 1.384 | 1.500 | -8.4 | 118 | 0.00 |
| 74 T | 1,2-Dichlorobenzene | 0.986 | 0.957 | 2.9 | 115 | 0.00 |
| 75 T | 1,2-Dibromo-3-chloropropane | 0.161 | 0.166 | -3.1 | 111 | 0.00 |
| 76 T | 1,2,4-Trichlorobenzene | 0.610 | 0.611 | -0.2 | 119 | 0.00 |
| 77 T | Hexachlorobutadiene | 0.206 | 0.207 | -0.5 | 123 | 0.00 |
| 78 T | Naphthalene | 1.954 | 1.957 | -0.2 | 116 | 0.00 |
| 79 T | 1,2,3-Trichlorobenzene | 0.562 | 0.525 | 6.6 | 117 | 0.00 |
| 80 T | 1,1,2-Trichloro-1,2,2-trifl | 0.465 | 0.526 | -13.1 | 125 | 0.00 |
| 81 T | Methyl acetate | 0.924 | 0.892 | 3.5 | 109 | 0.00 |
| 82 T | Cyclohexane | 0.778 | 0.847 | -8.9 | 121 | 0.00 |
| 83 T | Methylcyclohexane | 0.589 | 0.665 | -12.9 | 124 | 0.00 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0

K8220524.M Wed May 25 15:34:10 2022

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6333.D
Acq On : 6 Jun 2022 18:23
Operator : BARBARA
Sample : CCV100,CCV220606-01,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 08 11:35:27 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri May 27 11:42:49 2022
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Pentafluorobenzene | 1.000 | 1.000 | 0.0 | 104 | 0.00 |
| 2 | T | Dichlorodifluoromethane | 0.582 | 0.600 | -3.1 | 99 | 0.00 |
| 3 | P | Chloromethane | 1.131 | 1.084 | 4.2 | 98 | 0.00 |
| 4 | C | Vinyl chloride | 0.876 | 0.876 | 0.0 | 101 | 0.00 |
| 5 | T | Bromomethane | 0.640 | 0.686 | -7.2 | 101 | 0.00 |
| 6 | T | Chloroethane | 0.592 | 0.623 | -5.2 | 101 | 0.00 |
| 7 | T | Trichlorofluoromethane | 1.097 | 1.247 | -13.7 | 101 | 0.00 |
| 8 | T | Acrolein | 0.033 | 0.027 | 18.2 | 83 | 0.00 |
| 9 | MC | 1,1-Dichloroethene | 0.662 | 0.692 | -4.5 | 103 | 0.00 |
| 10 | T | Acetone | 1.738 | 1.559 | 10.3 | 87 | 0.00 |
| 11 | T | Carbon disulfide | 2.244 | 2.395 | -6.7 | 104 | 0.00 |
| 12 | T | Vinyl acetate | 0.558 | 0.581 | -4.1 | 102 | 0.00 |
| 13 | T | Methylene chloride | 0.617 | 0.496 | 19.6 | 78 | 0.00 |
| 14 | T | Acrylonitrile | 0.315 | 0.373 | -18.4 | 115 | 0.00 |
| 15 | T | tert-Butyl alcohol (TBA) | 0.200 | 0.208 | -4.0 | 100 | 0.00 |
| 16 | T | trans-1,2-Dichloroethene | 0.624 | 0.639 | -2.4 | 104 | 0.00 |
| 17 | T | Methyl tert-butyl ether (MT | 1.970 | 2.165 | -9.9 | 104 | 0.00 |
| 18 | P | 1,1-Dichloroethane | 1.192 | 1.218 | -2.2 | 101 | 0.00 |
| 19 | T | Diisopropyl ether (DIPE) | 2.805 | 3.008 | -7.2 | 102 | 0.00 |
| 20 | T | cis-1,2-Dichloroethene | 0.707 | 0.723 | -2.3 | 102 | 0.00 |
| 21 | T | 2,2-Dichloropropane | 0.540 | 0.607 | -12.4 | 113 | 0.00 |
| 22 | T | 2-Butanone (MEK) | 1.446 | 1.346 | 6.9 | 89 | 0.00 |
| 23 | T | Bromochloromethane | 0.353 | 0.363 | -2.8 | 103 | 0.00 |
| 25 | C | Chloroform | 1.176 | 1.199 | -2.0 | 102 | 0.00 |
| 26 | T | 1,1,1-Trichloroethane | 0.880 | 0.994 | -13.0 | 107 | 0.00 |
| 27 | T | Carbon tetrachloride | 0.792 | 0.904 | -14.1 | 107 | 0.00 |
| 28 | T | 1,1-Dichloropropene | 0.832 | 0.839 | -0.8 | 104 | 0.00 |
| 29 | T | 1,2-Dichloroethane (EDC) | 1.086 | 1.114 | -2.6 | 101 | 0.00 |
| 30 | S | 1,2-Dichloroethane-d4 | 0.755 | 0.713 | 5.6 | 101 | 0.00 |
| 31 | I | 1,4-Difluorobenzene | 1.000 | 1.000 | 0.0 | 103 | 0.00 |
| 32 | M | Benzene | 1.615 | 1.680 | -4.0 | 102 | 0.00 |
| 33 | M | Trichloroethene | 0.436 | 0.463 | -6.2 | 105 | 0.00 |
| 34 | C | 1,2-Dichloropropane | 0.482 | 0.483 | -0.2 | 98 | 0.00 |
| 35 | T | Dibromomethane | 0.296 | 0.314 | -6.1 | 102 | 0.00 |
| 36 | T | 1,4-Dioxane | 0.011 | 0.011 | 0.0 | 96 | 0.00 |
| 37 | T | Bromodichloromethane | 0.566 | 0.637 | -12.5 | 103 | 0.00 |
| 38 | T | 2-Chloroethyl vinyl ether | 0.241 | 0.242 | -0.4 | 98 | 0.00 |
| 39 | T | cis-1,3-Dichloropropene | 0.657 | 0.733 | -11.6 | 100 | 0.00 |
| 40 | T | 4-Methyl-2-pentanone (MIBK) | 0.989 | 1.146 | -15.9 | 100 | 0.00 |
| 41 | S | Toluene-d8 | 1.277 | 1.315 | -3.0 | 104 | 0.00 |
| 42 | MC | Toluene | 1.001 | 1.096 | -9.5 | 106 | 0.00 |
| 43 | T | trans-1,3-Dichloropropene | 0.660 | 0.739 | -12.0 | 103 | 0.00 |
| 44 | T | 1,1,2-Trichloroethane | 0.355 | 0.377 | -6.2 | 100 | 0.00 |
| 45 | T | Tetrachloroethene | 0.427 | 0.494 | -15.7 | 112 | 0.00 |
| 46 | T | 1,3-Dichloropropane | 0.713 | 0.757 | -6.2 | 100 | 0.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 47 | T | 2-Hexanone | 1.000 | 0.994 | 0.6 | 87 | 0.00 |
| 48 | T | Dibromochloromethane | 0.421 | 0.503 | -19.5 | 103 | 0.00 |
| 49 | T | 1,2-Dibromoethane (EDB) | 0.456 | 0.512 | -12.3 | 101 | 0.00 |
| 50 | I | Chlorobenzene-d5 | 1.000 | 1.000 | 0.0 | 107 | 0.00 |
| 51 | MP | Chlorobenzene | 1.136 | 1.155 | -1.7 | 104 | 0.00 |
| 52 | T | 1,1,1,2-Tetrachloroethane | 0.412 | 0.440 | -6.8 | 105 | 0.00 |
| 53 | C | Ethylbenzene | 1.887 | 1.944 | -3.0 | 104 | 0.00 |
| 54 | T | m,p-Xylene | 0.735 | 0.789 | -7.3 | 108 | 0.00 |
| 55 | T | o-Xylene | 0.725 | 0.779 | -7.4 | 107 | 0.00 |
| 56 | T | Styrene | 1.195 | 1.377 | -15.2 | 107 | 0.00 |
| 57 | P | Bromoform | 0.350 | 0.397 | -13.4 | 109 | 0.00 |
| 58 | T | Isopropylbenzene | 1.755 | 1.969 | -12.2 | 109 | 0.00 |
| 59 | S | Bromofluorobenzene | 0.495 | 0.499 | -0.8 | 109 | 0.00 |
| 60 | P | 1,1,2,2-Tetrachloroethane | 0.718 | 0.713 | 0.7 | 99 | 0.00 |
| 61 | T | Bromobenzene | 0.487 | 0.514 | -5.5 | 107 | 0.00 |
| 62 | T | 1,2,3-Trichloropropane | 0.621 | 0.625 | -0.6 | 100 | 0.00 |
| 63 | T | n-Propylbenzene | 2.139 | 2.274 | -6.3 | 107 | 0.00 |
| 64 | T | 2-Chlorotoluene | 1.323 | 1.341 | -1.4 | 106 | 0.00 |
| 65 | T | 1,3,5-Trimethylbenzene | 1.528 | 1.673 | -9.5 | 111 | 0.00 |
| 66 | T | 4-Chlorotoluene | 1.612 | 1.683 | -4.4 | 108 | 0.00 |
| 67 | T | tert-Butylbenzene | 1.294 | 1.451 | -12.1 | 113 | 0.00 |
| 68 | T | 1,2,4-Trimethylbenzene | 1.547 | 1.696 | -9.6 | 111 | 0.00 |
| 69 | T | sec-Butylbenzene | 1.810 | 2.060 | -13.8 | 114 | 0.00 |
| 70 | T | 1,3-Dichlorobenzene | 1.009 | 1.029 | -2.0 | 110 | 0.00 |
| 71 | T | 4-Isopropyltoluene | 1.632 | 1.874 | -14.8 | 115 | 0.00 |
| 72 | T | 1,4-Dichlorobenzene | 1.007 | 1.046 | -3.9 | 109 | 0.00 |
| 73 | T | n-Butylbenzene | 1.384 | 1.617 | -16.8 | 115 | 0.00 |
| 74 | T | 1,2-Dichlorobenzene | 0.986 | 1.015 | -2.9 | 110 | 0.00 |
| 75 | T | 1,2-Dibromo-3-chloropropane | 0.161 | 0.159 | 1.2 | 96 | 0.00 |
| 76 | T | 1,2,4-Trichlorobenzene | 0.610 | 0.613 | -0.5 | 108 | 0.00 |
| 77 | T | Hexachlorobutadiene | 0.206 | 0.236 | -14.6 | 126 | 0.00 |
| 78 | T | Naphthalene | 1.954 | 1.779 | 9.0 | 95 | 0.00 |
| 79 | T | 1,2,3-Trichlorobenzene | 0.562 | 0.510 | 9.3 | 103 | 0.00 |
| 80 | T | 1,1,2-Trichloro-1,2,2-trifl | 0.465 | 0.485 | -4.3 | 103 | 0.00 |
| 81 | T | Methyl acetate | 0.924 | 0.877 | 5.1 | 97 | 0.00 |
| 82 | T | Cyclohexane | 0.778 | 0.799 | -2.7 | 103 | 0.00 |
| 83 | T | Methylcyclohexane | 0.589 | 0.647 | -9.8 | 109 | 0.00 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0

K8220524.M Wed Jun 08 11:35:46 2022

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): K6067.D

Date Analyzed: 05/24/2022

Instrument ID: MSD_K

Time Analyzed: 14:48

| | 50UG/L | IS1 AREA | # | RT | # | IS2 AREA | # | RT | # | IS3 AREA | # | RT | # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 292137 | | 6.00 | | 454887 | | 6.83 | | 460078 | | 10.18 | |
| | UPPER LIMIT | 584274 | | 6.50 | | 909774 | | 7.33 | | 920156 | | 10.68 | |
| | LOWER LIMIT | 146068.5 | | 5.50 | | 227443.5 | | 6.33 | | 230039 | | 9.68 | |
| | LAB SAMPLE ID | | | | | | | | | | | | |
| 01 | ICC220524 | 251002 | | 6.01 | | 396989 | | 6.83 | | 382763 | | 10.17 | |
| 02 | ICC220524 | 252759 | | 6.00 | | 403414 | | 6.83 | | 406131 | | 10.17 | |
| 03 | ICC220524 | 263676 | | 6.01 | | 409916 | | 6.83 | | 414135 | | 10.17 | |
| 04 | ICC220524 | 260371 | | 6.01 | | 417887 | | 6.83 | | 393432 | | 10.17 | |
| 05 | ICC220524 | 319059 | | 6.00 | | 485803 | | 6.83 | | 494161 | | 10.18 | |
| 06 | ICC220524 | 350748 | | 6.00 | | 534511 | | 6.83 | | 538142 | | 10.18 | |
| 07 | ICV220524 | 358487 | | 6.00 | | 542336 | | 6.83 | | 547749 | | 10.17 | |
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| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | |

IS1 = PENTAFLUOROBENZENE
IS2 = 1,4-DIFLUOROBENZENE
IS3 = CHLOROBENZENE-D5

AREA UPPER LIMIT = +200% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

FORM 8

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): K6333.D

Date Analyzed: 06/06/2022

Instrument ID: MSD_K

Time Analyzed: 18:23

| | 50UG/L | IS1 AREA # | RT # | IS2 AREA # | RT # | IS3 AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 304314 | 6.00 | 466506 | 6.83 | 493927 | 10.17 |
| | UPPER LIMIT | 608628 | 6.50 | 933012 | 7.33 | 987854 | 10.67 |
| | LOWER LIMIT | 152157 | 5.50 | 233253 | 6.33 | 246963.5 | 9.67 |
| | LAB SAMPLE ID | | | | | | |
| 01 | BLKA220606-01 | 264100 | 6.00 | 407025 | 6.83 | 390099 | 10.17 |
| 02 | LCSA220606-01 | 288285 | 6.00 | 437357 | 6.83 | 439778 | 10.17 |
| 03 | E22-03122-001MS | 304104 | 6.00 | 463485 | 6.83 | 487622 | 10.17 |
| 04 | E22-03195-001 | 268841 | 6.01 | 415425 | 6.83 | 393480 | 10.18 |
| 05 | E22-03195-002 | 270924 | 6.01 | 417468 | 6.83 | 426655 | 10.17 |
| 06 | E22-03122-001 | 254990 | 6.00 | 397573 | 6.83 | 387127 | 10.17 |
| 07 | E22-03122-002 | 260590 | 6.00 | 409086 | 6.83 | 419181 | 10.17 |
| 08 | E22-03122-003 | 255695 | 6.01 | 396785 | 6.83 | 402433 | 10.18 |
| 09 | E22-03213-001 | 257686 | 6.01 | 396489 | 6.83 | 407696 | 10.18 |
| 10 | E22-03213-002 | 246373 | 6.00 | 383225 | 6.83 | 393920 | 10.17 |
| 11 | E22-03213-003 | 245009 | 6.01 | 384392 | 6.83 | 393848 | 10.17 |
| 12 | E22-03226-001 | 240339 | 6.00 | 377643 | 6.83 | 378492 | 10.17 |
| 13 | E22-03226-002 | 248632 | 6.00 | 385034 | 6.83 | 396155 | 10.18 |
| 14 | E22-03226-002DUP | 262215 | 6.00 | 399646 | 6.83 | 417071 | 10.18 |
| 15 | E22-03226-003 | 269528 | 6.00 | 411945 | 6.83 | 416267 | 10.18 |
| 16 | E22-03226-004 | 256202 | 6.00 | 393021 | 6.83 | 402455 | 10.18 |
| 17 | E22-03269-001 | 252433 | 6.00 | 389928 | 6.83 | 400216 | 10.18 |
| 18 | E22-03269-002 | 243369 | 6.01 | 377658 | 6.83 | 387682 | 10.18 |
| 19 | E22-03269-003 | 239715 | 6.01 | 377913 | 6.83 | 387033 | 10.17 |
| 20 | E22-03269-004 | 255356 | 6.00 | 389931 | 6.83 | 384015 | 10.18 |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = PENTAFLUOROBENZENE
IS2 = 1,4-DIFLUOROBENZENE
IS3 = CHLOROBENZENE-D5

AREA UPPER LIMIT = +200% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

FORM 8

VOLATILE ORGANICS SAMPLE DATA

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6345.D
Acq On : 7 Jun 2022 00:10
Operator : BARBARA
Sample : MW-13D-06012,E22-03213-001,A,0.05mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,100
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 08 14:46:15 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri May 27 11:42:49 2022
Response via : Initial Calibration

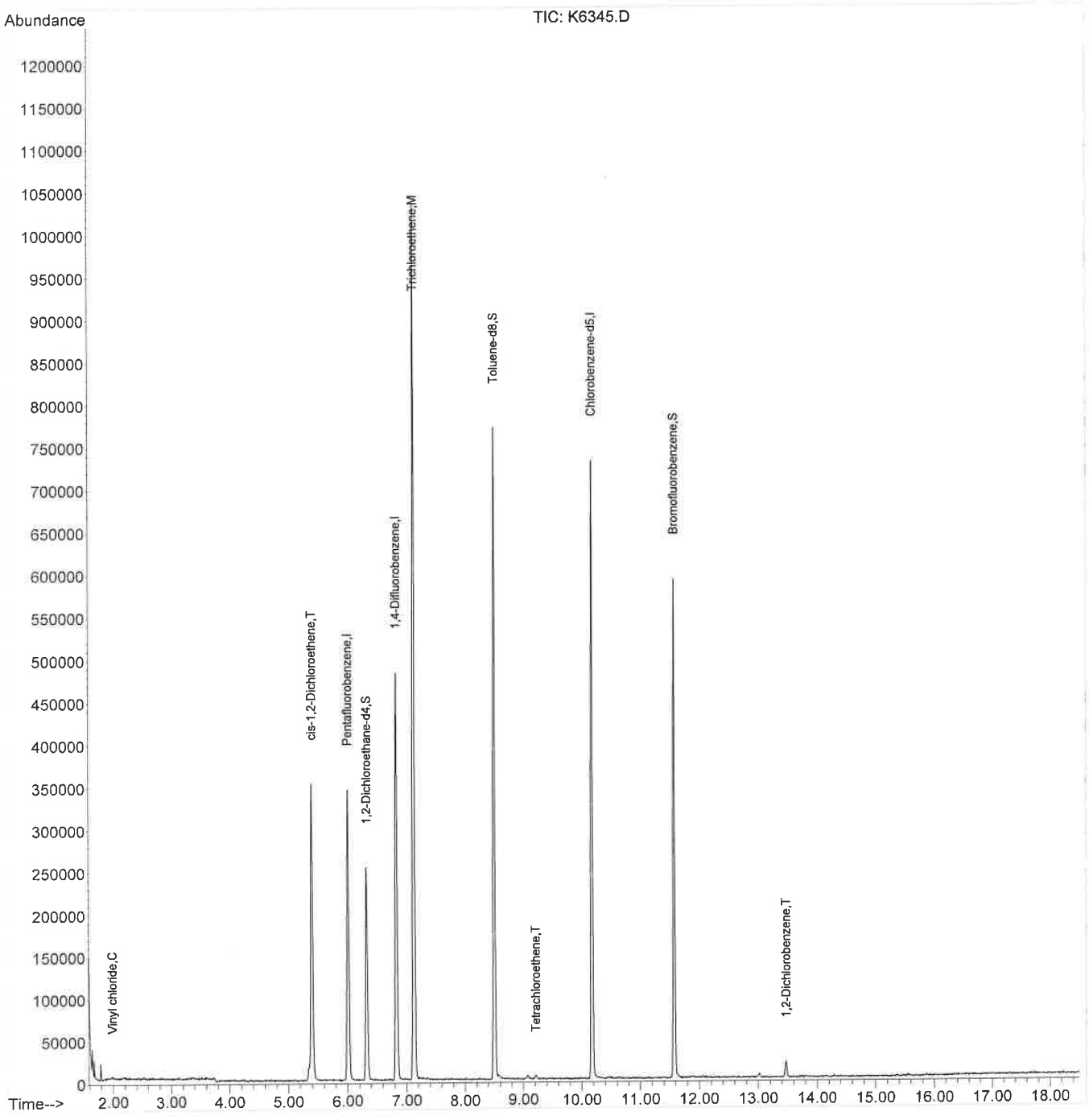
| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Pentafluorobenzene | 6.01 | 168 | 257686 | 50.00 | UG | 0.00 |
| 31) 1,4-Difluorobenzene | 6.83 | 114 | 396489 | 50.00 | UG | 0.00 |
| 50) Chlorobenzene-d5 | 10.18 | 117 | 407696 | 50.00 | UG | 0.00 |
| **System Monitoring Compounds** | | | | | | |
| 30) 1,2-Dichloroethane-d4 | 6.32 | 65 | 187622 | 48.25 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 96.50% | | | |
| 41) Toluene-d8 | 8.51 | 98 | 505855 | 49.96 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 99.92% | | | |
| 59) Bromofluorobenzene | 11.58 | 95 | 192601 | 47.69 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 95.38% | | | |
| **Target Compounds** | | | | | | Qvalue |
| 4) Vinyl chloride | 1.98 | 62 | 1957 | 0.43 | UG | # 97 |
| 20) cis-1,2-Dichloroethene | 5.40 | 96 | 165856 | 45.52 | UG | # 99 |
| 33) Trichloroethene | 7.13 | 95 | 345336 | 99.79 | UG | # 98 |
| 45) Tetrachloroethene | 9.22 | 166 | 1439 | 0.42 | UG | 100 |
| 74) 1,2-Dichlorobenzene | 13.47 | 146 | 8137 | 1.01 | UG | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6345.D
Acq On : 7 Jun 2022 00:10
Operator : BARBARA
Sample : MW-13D-06012,E22-03213-001,A,0.05mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,100
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 08 14:46:15 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri May 27 11:42:49 2022
Response via : Initial Calibration




K8220524.M Wed Jun 08 14:46:21 2022 Page: 2

LSC Area Percent Report

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6345.D
Acq On : 7 Jun 2022 00:10
Operator : BARBARA
Sample : MW-13D-06012,E22-03213-001,A,0.05mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,100
ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1 % of largest Peak
Start Thrs: 0.07 Max Peaks: 100
Stop Thrs : 0.2 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 10

Method : C:\MSDCHEM\1\METHODS\K8220524.M
Title : VOLATILE ORGANICS BY EPA METHOD 8260D

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.642 | 10 | 12 | 17 | rVB | 31330 | 27392 | 1.34% | 0.303% |
| 2 | 5.396 | 710 | 728 | 747 | rBV | 350663 | 812710 | 39.83% | 8.997% |
| 3 | 6.004 | 833 | 844 | 871 | rBV | 342888 | 756508 | 37.08% | 8.375% |
| 4 | 6.324 | 895 | 905 | 926 | rVB | 251549 | 541972 | 26.56% | 6.000% |
| 5 | 6.828 | 990 | 1001 | 1024 | rBV | 480585 | 974956 | 47.79% | 10.794% |
| 6 | 7.126 | 1047 | 1058 | 1071 | rBV | 1033363 | 2040213 | 100.00% | 22.587% |
| 7 | 8.505 | 1307 | 1321 | 1331 | rBV | 769567 | 1431250 | 70.15% | 15.845% |
| 8 | 10.178 | 1628 | 1640 | 1670 | rBV | 729229 | 1362748 | 66.79% | 15.087% |
| 9 | 11.578 | 1894 | 1907 | 1926 | rBV | 589686 | 1040231 | 50.99% | 11.516% |
| 10 | 13.471 | 2258 | 2268 | 2281 | rVB3 | 19514 | 44750 | 2.19% | 0.495% |

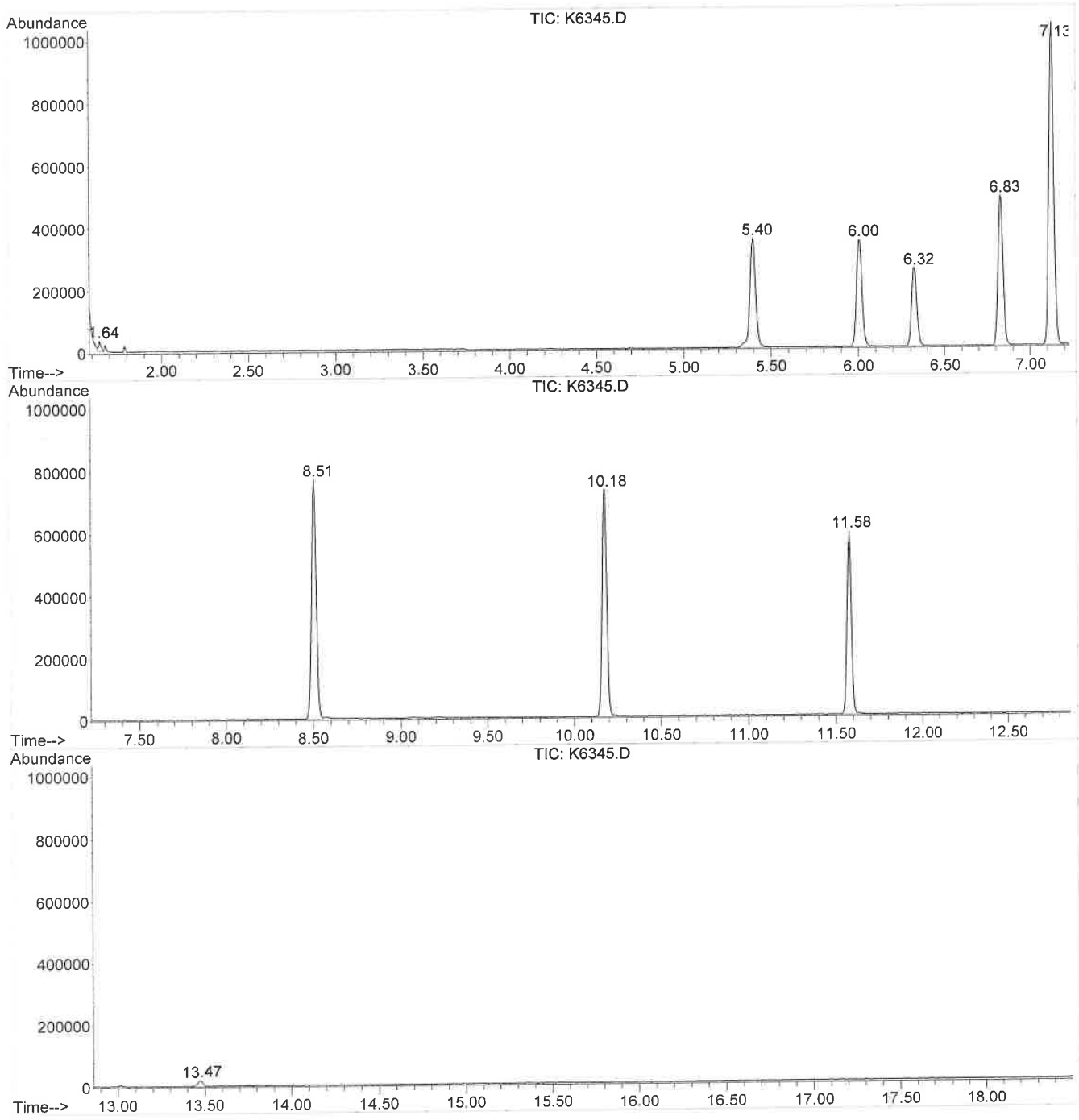
Sum of corrected areas: 9032730

LSC Report - Integrated Chromatogram

```
Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6345.D
Acq On    :  7 Jun 2022  00:10
Operator  : BARBARA
Sample    : MW-13D-06012,E22-03213-001,A,0.05mL,100
Misc      : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,100
ALS Vial  : 14   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P
```




K8220524.M Wed Jun 08 14:46:31 2022 Page: 2

Library Search Compound Report

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6345.D
Acq On : 7 Jun 2022 00:10
Operator : BARBARA
Sample : MW-13D-06012,E22-03213-001,A,0.05mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,100
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

**********

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6346.D
Acq On : 7 Jun 2022 00:39
Operator : BARBARA
Sample : FB-060122,E22-03213-002,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 08 14:47:17 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri May 27 11:42:49 2022
Response via : Initial Calibration

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Pentafluorobenzene | 6.00 | 168 | 246373 | 50.00 | UG | 0.00 |
| 31) 1,4-Difluorobenzene | 6.83 | 114 | 383225 | 50.00 | UG | 0.00 |
| 50) Chlorobenzene-d5 | 10.17 | 117 | 393920 | 50.00 | UG | 0.00 |
| **System Monitoring Compounds** | | | | | | |
| 30) 1,2-Dichloroethane-d4 | 6.32 | 65 | 183979 | 49.49 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 98.98% | | | |
| 41) Toluene-d8 | 8.51 | 98 | 493776 | 50.45 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 100.90% | | | |
| 59) Bromofluorobenzene | 11.58 | 95 | 186845 | 47.88 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 95.76% | | | |

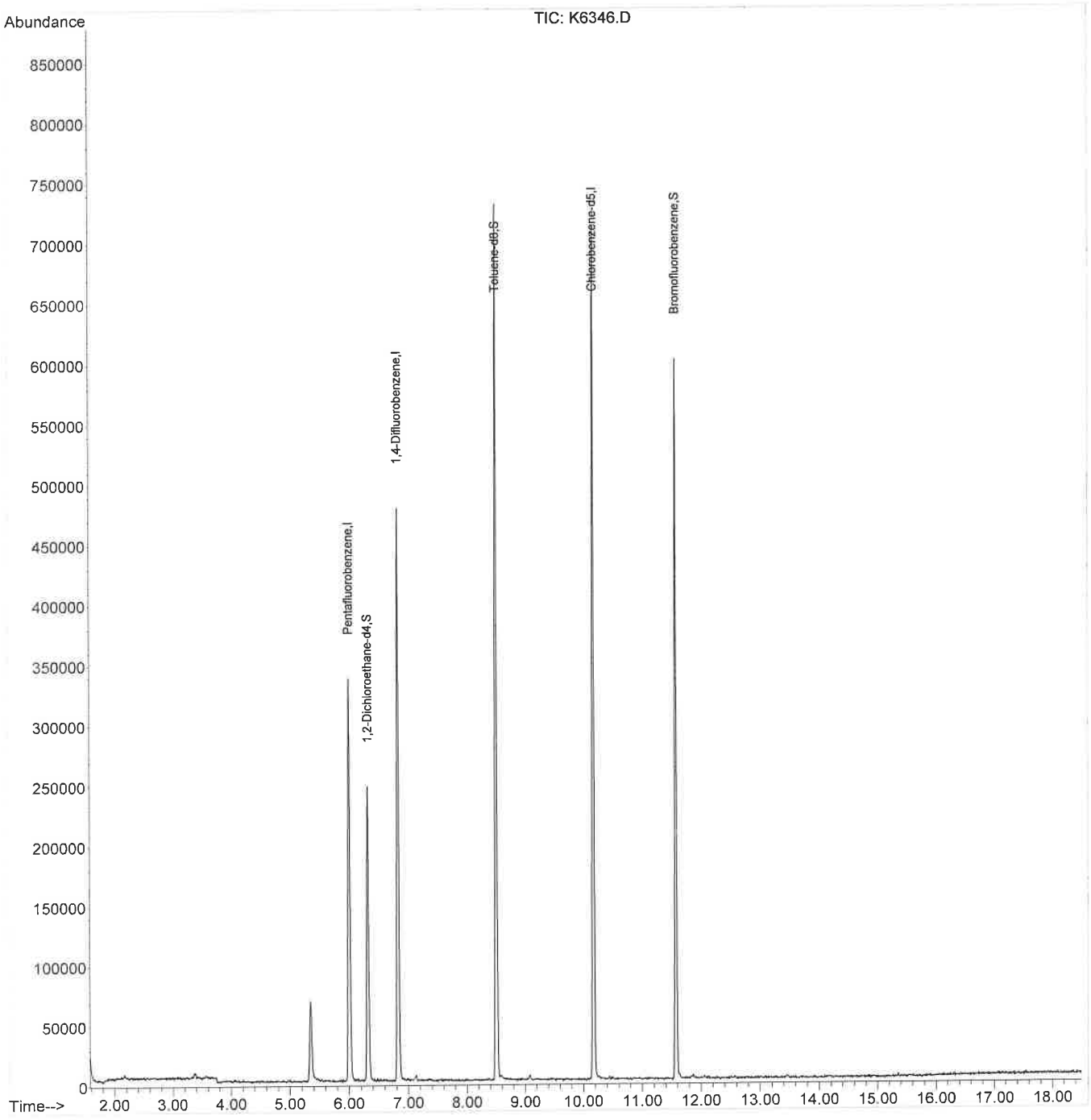
| Target Compounds | Qvalue |
|---|---|

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6346.D
Acq On : 7 Jun 2022 00:39
Operator : BARBARA
Sample : FB-060122,E22-03213-002,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 08 14:47:17 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri May 27 11:42:49 2022
Response via : Initial Calibration




K8220524.M Wed Jun 08 14:47:23 2022 Page: 2

LSC Area Percent Report

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6346.D
Acq On : 7 Jun 2022 00:39
Operator : BARBARA
Sample : FB-060122,E22-03213-002,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,1
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1 % of largest Peak
Start Thrs: 0.07 Max Peaks: 100
Stop Thrs : 0.2 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 10

Method : C:\MSDCHEM\1\METHODS\K8220524.M
Title : VOLATILE ORGANICS BY EPA METHOD 8260D

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.555 | 181 | 186 | 220 | rVB | 2327 | 14839 | 1.07% | 0.240% |
| 2 | 3.362 | 337 | 340 | 366 | rVB5 | 5562 | 24169 | 1.75% | 0.390% |
| 3 | 3.661 | 392 | 397 | 417 | rVB5 | 5183 | 27907 | 2.01% | 0.450% |
| 4 | 5.349 | 708 | 719 | 739 | rBV2 | 67545 | 188586 | 13.62% | 3.044% |
| 5 | 6.004 | 830 | 844 | 860 | rBV2 | 335799 | 740332 | 53.45% | 11.950% |
| 6 | 6.324 | 890 | 905 | 920 | rBV | 246128 | 534235 | 38.57% | 8.623% |
| 7 | 6.828 | 991 | 1001 | 1018 | rBV | 476557 | 941863 | 68.01% | 15.203% |
| 8 | 8.505 | 1311 | 1321 | 1332 | rBV | 728614 | 1384986 | 100.00% | 22.355% |
| 9 | 10.173 | 1629 | 1639 | 1655 | rBV | 708649 | 1311313 | 94.68% | 21.166% |
| 10 | 11.578 | 1895 | 1907 | 1935 | rBV | 600327 | 1027150 | 74.16% | 16.579% |

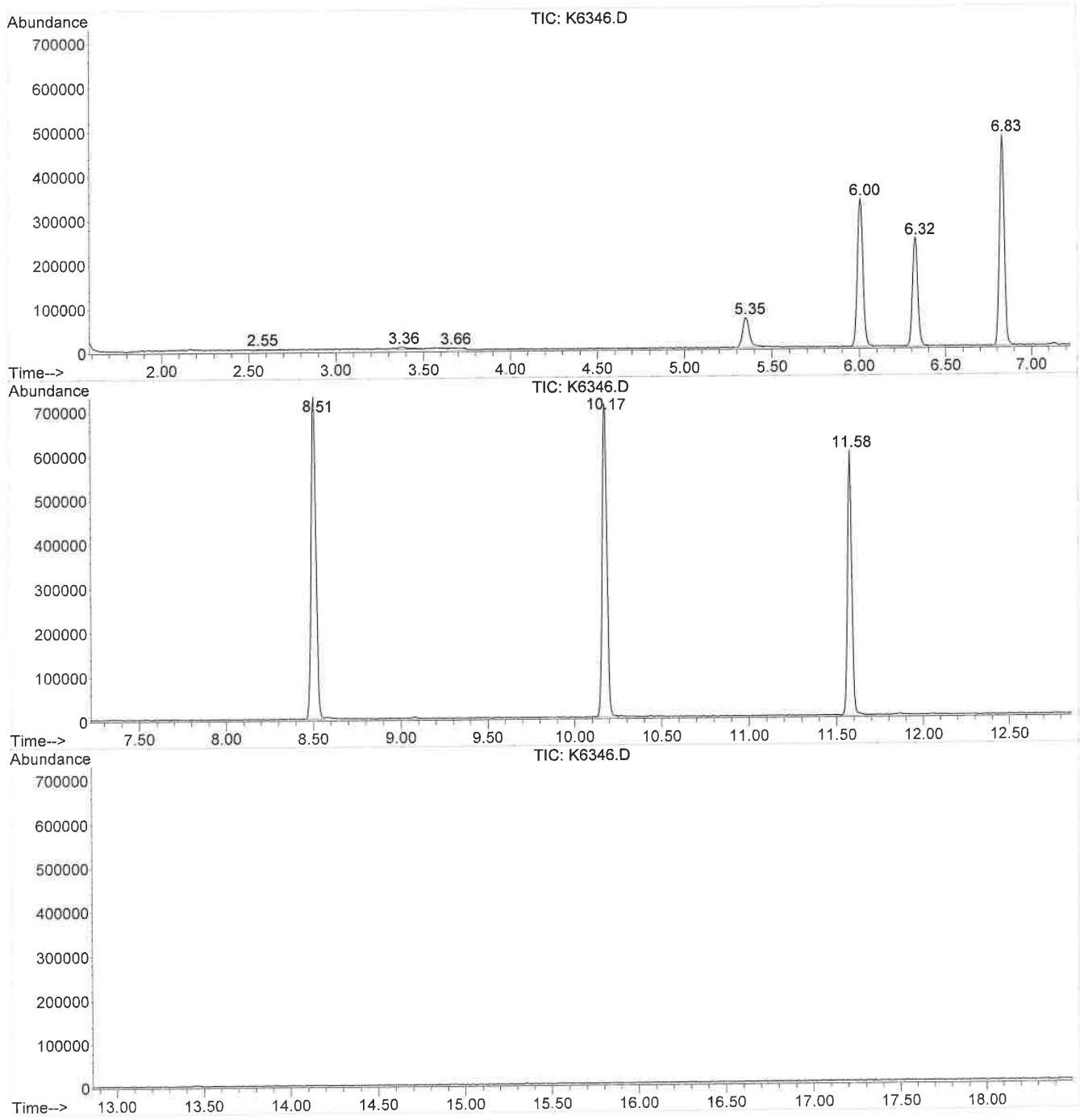
Sum of corrected areas: 6195380

LSC Report - Integrated Chromatogram

```
Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6346.D
Acq On    :  7 Jun 2022  00:39
Operator  : BARBARA
Sample    : FB-060122,E22-03213-002,A,5mL,100
Misc      : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,1
ALS Vial  : 15   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P
```




K8220524.M Wed Jun 08 14:47:39 2022 Page: 2

Library Search Compound Report

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6346.D
Acq On : 7 Jun 2022 00:39
Operator : BARBARA
Sample : FB-060122,E22-03213-002,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,1
ALS Vial : 15 Sample Multiplier: 1

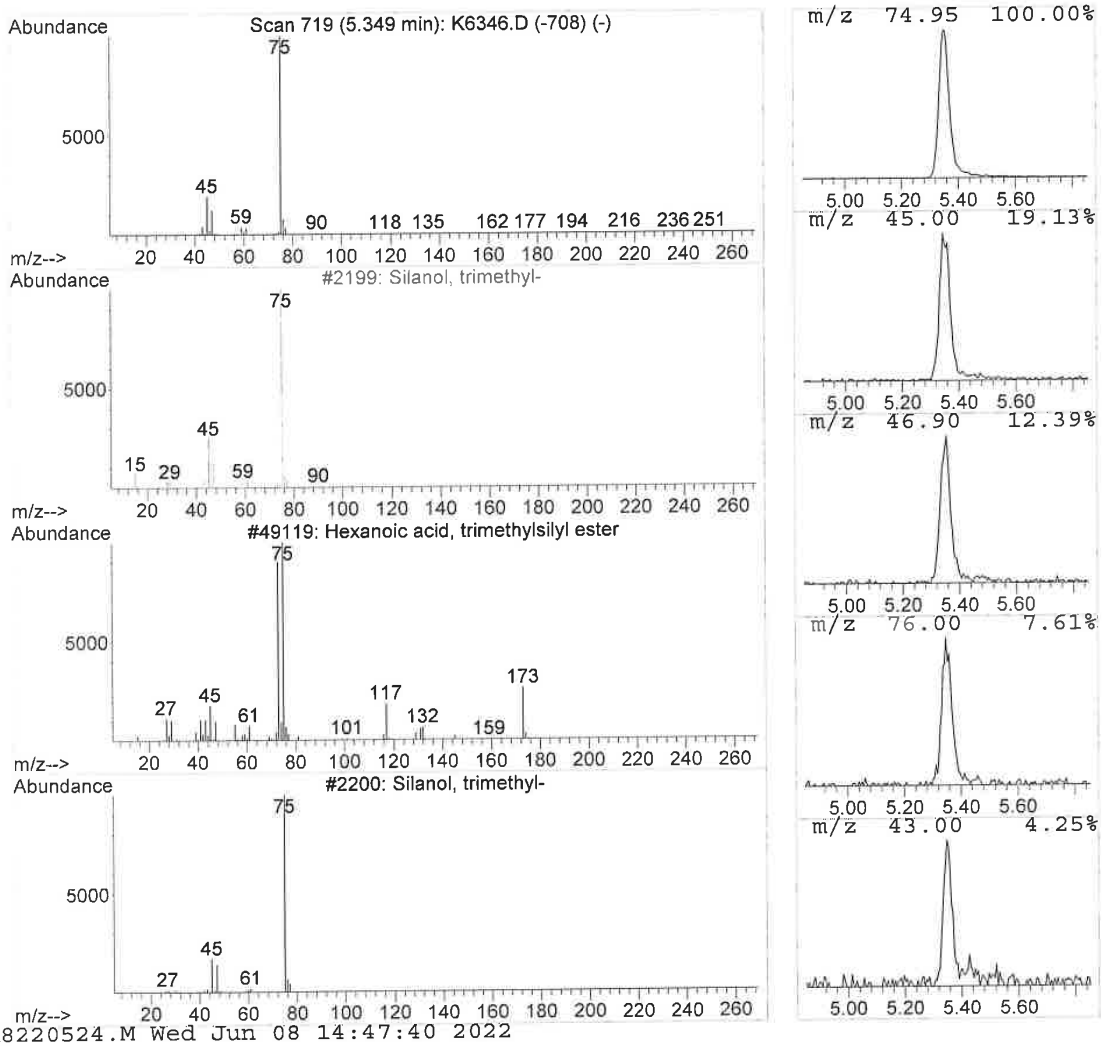
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P

**********
Peak Number 1 Column/Septa bleed Concentration Rank 1

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 5.35 | 0.00 UG | 188586 | Pentafluorobenzene | 6.00 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Silanol, trimethyl- | 90 | C3H10OSi | 001066-40-6 | 91 |
| 2 | Hexanoic acid, trimethylsilyl ester | 188 | C9H20O2Si | 014246-15-2 | 64 |
| 3 | Silanol, trimethyl- | 90 | C3H10OSi | 001066-40-6 | 64 |
| 4 | Silanol, trimethyl- | 90 | C3H10OSi | 001066-40-6 | 64 |
| 5 | Propanoic acid, 2-methyl-, tert-... | 202 | C10H22O2Si | 111864-21-2 | 64 |







K8220524.M Wed Jun 08 14:47:40 2022

Page: 3

Tentatively Identified Compound (LSC) summary

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6346.D
Acq On : 7 Jun 2022 00:39
Operator : BARBARA
Sample : FB-060122,E22-03213-002,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,1
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P

| TIC Top Hit name | RT | EstConc | Units | Response | --Internal Standard--- # | RT | Resp | Conc |
|---|---|---|---|---|---|---|---|---|
| Column/Septa bleed | | | | | 5.35 | | 0.0 | |
| 188586 1 | 6.00 | 740332 | 50.0 | | | | | |

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6347.D
Acq On : 7 Jun 2022 1:08
Operator : BARBARA
Sample : TB-060122,E22-03213-003,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 08 14:48:05 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri May 27 11:42:49 2022
Response via : Initial Calibration

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Pentafluorobenzene | 6.01 | 168 | 245009 | 50.00 | UG | 0.00 |
| 31) 1,4-Difluorobenzene | 6.83 | 114 | 384392 | 50.00 | UG | 0.00 |
| 50) Chlorobenzene-d5 | 10.17 | 117 | 393848 | 50.00 | UG | 0.00 |
| **System Monitoring Compounds** | | | | | | |
| 30) 1,2-Dichloroethane-d4 | 6.32 | 65 | 183971 | 49.76 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 99.52% | | | |
| 41) Toluene-d8 | 8.51 | 98 | 498431 | 50.78 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 101.56% | | | |
| 59) Bromofluorobenzene | 11.58 | 95 | 187266 | 47.99 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 95.98% | | | |

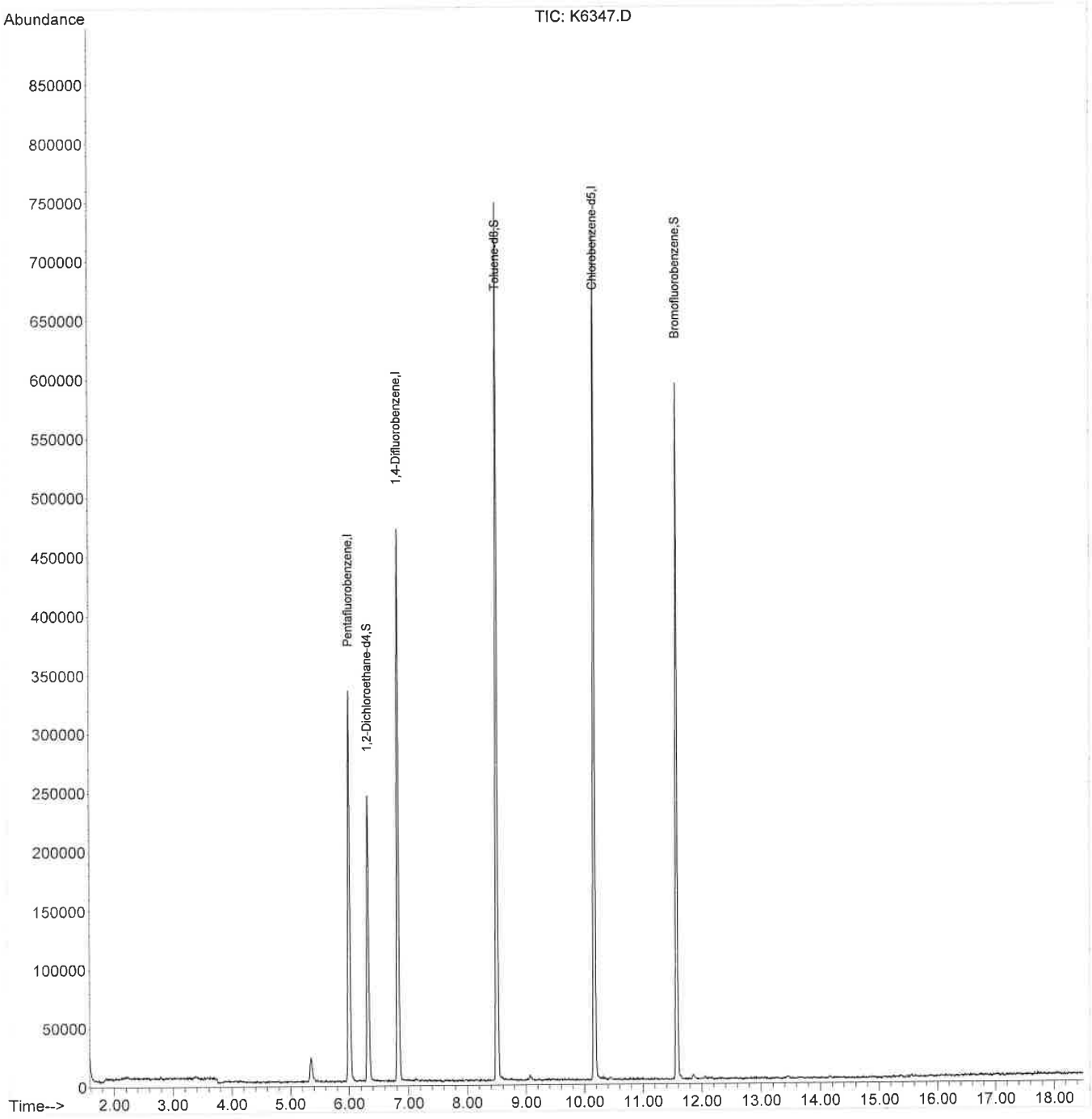
| Target Compounds | Qvalue |
|---|---|

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6347.D
Acq On : 7 Jun 2022 1:08
Operator : BARBARA
Sample : TB-060122,E22-03213-003,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 08 14:48:05 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri May 27 11:42:49 2022
Response via : Initial Calibration




K8220524.M Wed Jun 08 14:48:10 2022 Page: 2

LSC Area Percent Report

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6347.D
Acq On : 7 Jun 2022 1:08
Operator : BARBARA
Sample : TB-060122,E22-03213-003,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,1
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1 % of largest Peak
Start Thrs: 0.07 Max Peaks: 100
Stop Thrs : 0.2 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 10

Method : C:\MSDCHEM\1\METHODS\K8220524.M
Title : VOLATILE ORGANICS BY EPA METHOD 8260D

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.354 | 708 | 720 | 736 | rBV | 21143 | 63927 | 4.56% | 1.059% |
| 2 | 6.004 | 832 | 844 | 867 | rBV | 332502 | 737835 | 52.58% | 12.223% |
| 3 | 6.319 | 895 | 904 | 921 | rBV | 243069 | 535149 | 38.14% | 8.866% |
| 4 | 6.828 | 987 | 1001 | 1029 | rBV | 468546 | 942098 | 67.14% | 15.607% |
| 5 | 8.505 | 1309 | 1321 | 1339 | rBV | 744455 | 1403213 | 100.00% | 23.247% |
| 6 | 10.173 | 1627 | 1639 | 1657 | rBV | 722012 | 1324560 | 94.39% | 21.944% |
| 7 | 11.578 | 1896 | 1907 | 1931 | rBV | 591505 | 1029427 | 73.36% | 17.054% |

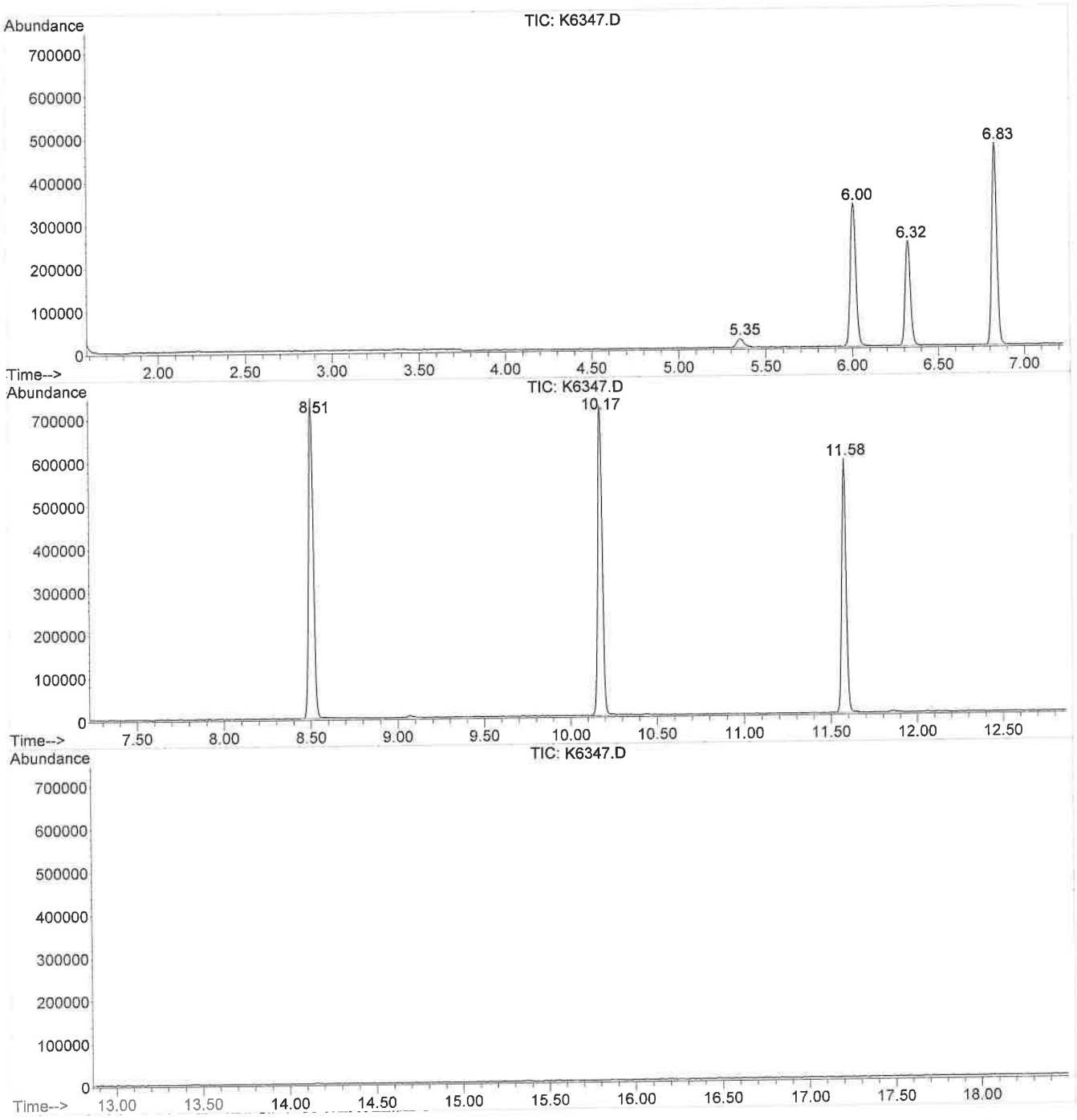
Sum of corrected areas: 6036209

LSC Report - Integrated Chromatogram

```
Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6347.D
Acq On    :  7 Jun 2022    1:08
Operator  : BARBARA
Sample    : TB-060122,E22-03213-003,A,5mL,100
Misc      : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,1
ALS Vial  : 16   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P
```




K8220524.M Wed Jun 08 14:48:28 2022

Tentatively Identified Compound (LSC) summary

Data Path : C:\MSDChem\1\DATA\22-06-06\\
Data File : K6347.D
Acq On : 7 Jun 2022 1:08
Operator : BARBARAA
Sample : TB-060122,E22-03213-003,A,5mL,1000
Misc : EWMA/SWIVELIER_-_2,06/01/22,06/01/22,11
ALS Vial : 16 Sample Multiplier: 11

Quant Method : C:\MSDCHEM\1\METHODS\K8220524.MM
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260DD

TIC Library : C:\DATABASE\NIST05A.LL
TIC Integration Parameters: LSCINT.PP

| TIC Top Hit name | RT | EstConc | Units | Response | --Internal Standard--- # | RT | Resp | Conc |
|---|---|---|---|---|---|---|---|---|

No Library Search Compounds Detected
**********

## VOLATILE ORGANICS

Lab ID: BLKA220606-01
Client ID: BLKA220606-01
Date Received: NA
Date Analyzed: 06/06/2022
Data file: K6336.D 06/06/2022 19:49

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Dichlorodifluoromethane | ND | | 1.00 | 0.552 |
| Chloromethane | ND | | 0.500 | 0.309 |
| Vinyl chloride | ND | | 1.00 | 0.352 |
| Bromomethane | ND | | 1.00 | 0.386 |
| Chloroethane | ND | | 0.500 | 0.324 |
| Trichlorofluoromethane | ND | | 1.00 | 0.503 |
| 1,1-Dichloroethene | ND | | 0.500 | 0.363 |
| Acetone | ND | | 2.00 | 0.847 |
| Carbon disulfide | ND | | 1.00 | 0.403 |
| Methylene chloride | ND | | 1.00 | 0.500 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 0.372 |
| Methyl tert-butyl ether (MTBE) | ND | | 0.500 | 0.245 |
| 1,1-Dichloroethane | ND | | 0.500 | 0.285 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 0.277 |
| 2-Butanone (MEK) | ND | | 2.00 | 0.802 |
| Bromochloromethane | ND | | 1.00 | 0.379 |
| Chloroform | ND | | 0.500 | 0.285 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 0.381 |
| Carbon tetrachloride | ND | | 0.500 | 0.349 |
| 1,2-Dichloroethane (EDC) | ND | | 0.500 | 0.273 |
| Benzene | ND | | 0.500 | 0.270 |
| Trichloroethene | ND | | 0.500 | 0.347 |
| 1,2-Dichloropropane | ND | | 0.500 | 0.272 |
| 1,4-Dioxane | ND | | 100 | 51.1 |
| Bromodichloromethane | ND | | 0.500 | 0.258 |
| cis-1,3-Dichloropropene | ND | | 1.00 | 0.264 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1.00 | 0.611 |

## VOLATILE ORGANICS

Lab ID: BLKA220606-01
Client ID: BLKA220606-01
Date Received: NA
Date Analyzed: 06/06/2022
Data file: K6336.D 06/06/2022 19:49

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Toluene | ND | | 0.500 | 0.302 |
| trans-1,3-Dichloropropene | ND | | 1.00 | 0.330 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 0.313 |
| Tetrachloroethene | ND | | 0.500 | 0.365 |
| 2-Hexanone | ND | | 1.00 | 0.818 |
| Dibromochloromethane | ND | | 0.500 | 0.263 |
| 1,2-Dibromoethane (EDB) | ND | | 0.500 | 0.289 |
| Chlorobenzene | ND | | 0.500 | 0.304 |
| Ethylbenzene | ND | | 0.500 | 0.313 |
| Total Xylenes | ND | | 1.00 | 0.345 |
| Styrene | ND | | 0.500 | 0.317 |
| Bromoform | ND | | 0.500 | 0.328 |
| Isopropylbenzene | ND | | 0.500 | 0.332 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | 0.284 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 0.386 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 0.397 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 0.354 |
| 1,2-Dibromo-3-chloropropane | ND | | 1.00 | 0.410 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | 0.358 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | 0.406 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 1.00 | 0.538 |
| Methyl acetate | ND | | 0.500 | 0.345 |
| Cyclohexane | ND | | 1.00 | 0.469 |
| Methylcyclohexane | ND | | 1.00 | 0.421 |
| 1,3-Dichloropropene (cis- and trans-) | ND | | 1.00 | 0.264 |

Total Target Compounds (52): 0

D --- Dilution Performed
J --- Value Less than RL & greater than MDL
E --- Exceeds upper level of Calibration curve

B --- Compound detected in Blank
C --- Common laboratory contamination

## VOLATILE ORGANICS
### Tentatively Identified Compounds

Lab ID: BLKA220606-01
Client ID: BLKA220606-01
Date Received: NA
Date Analyzed: 06/06/2022
Date File: K6336.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
Dilution Factor: 1
% Moisture: 100

| CAS # | Compound | Estimated Concentration | Q | Retention Time |
|---|---|---|---|---|
| | No peaks detected | | | |

Total TICs = 0

D --- Dilution Performed

J --- Estimated concentration for TICs

N --- Presumptive evidence of a compound from the use of GC/MS NIST library search

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6336.D
Acq On : 6 Jun 2022 19:49
Operator : BARBARA
Sample : BLKA220606-01,BLKA220606-01,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 08 11:36:33 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri May 27 11:42:49 2022
Response via : Initial Calibration

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Pentafluorobenzene | 6.00 | 168 | 264100 | 50.00 | UG | 0.00 |
| 31) 1,4-Difluorobenzene | 6.83 | 114 | 407025 | 50.00 | UG | 0.00 |
| 50) Chlorobenzene-d5 | 10.17 | 117 | 390099 | 50.00 | UG | 0.00 |
| **System Monitoring Compounds** | | | | | | |
| 30) 1,2-Dichloroethane-d4 | 6.32 | 65 | 197039 | 49.44 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 98.88% | | | |
| 41) Toluene-d8 | 8.51 | 98 | 494105 | 47.54 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 95.08% | | | |
| 59) Bromofluorobenzene | 11.58 | 95 | 185922 | 48.11 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 96.22% | | | |

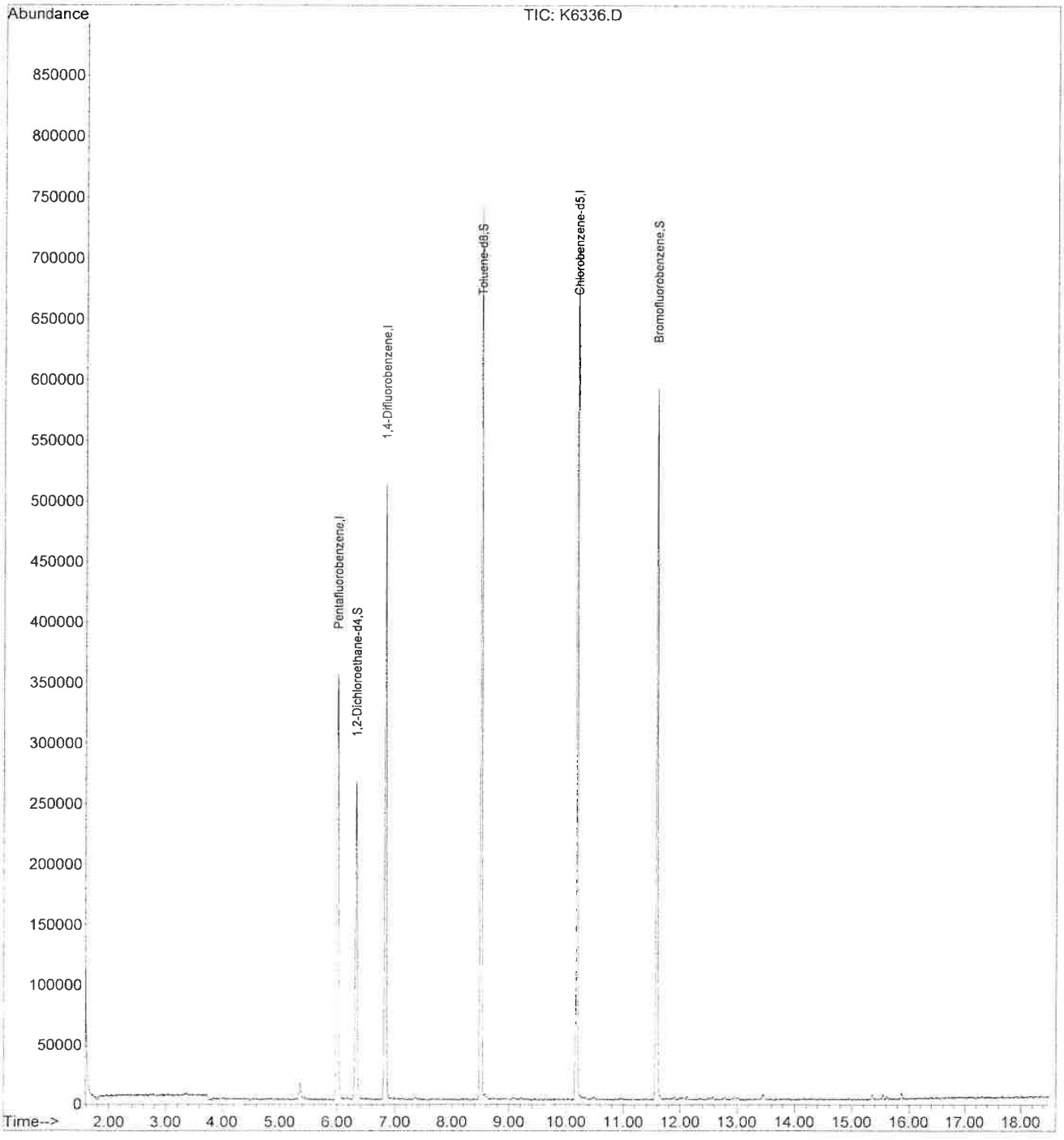
| Target Compounds | Qvalue |
|---|---|

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6336.D
Acq On : 6 Jun 2022 19:49
Operator : BARBARA
Sample : BLKA220606-01,BLKA220606-01,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 08 11:36:33 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri May 27 11:42:49 2022
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6336.D
Acq On : 6 Jun 2022 19:49
Operator : BARBARA
Sample : BLKA220606-01,BLKA220606-01,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1 % of largest Peak
Start Thrs: 0.07 Max Peaks: 100
Stop Thrs : 0.2 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 10

Method : C:\MSDCHEM\1\METHODS\K8220524.M
Title : VOLATILE ORGANICS BY EPA METHOD 8260D

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.354 | 712 | 720 | 733 | rBV3 | 14522 | 42633 | 3.07% | 0.697% |
| 2 | 6.004 | 833 | 844 | 863 | rBV2 | 353476 | 786033 | 56.53% | 12.844% |
| 3 | 6.319 | 891 | 904 | 933 | rBV | 264387 | 575061 | 41.36% | 9.397% |
| 4 | 6.827 | 989 | 1001 | 1021 | rBV | 509722 | 990531 | 71.24% | 16.186% |
| 5 | 8.505 | 1310 | 1321 | 1332 | rBV | 740664 | 1390509 | 100.00% | 22.721% |
| 6 | 8.579 | 1332 | 1335 | 1351 | rVB7 | 5276 | 15101 | 1.09% | 0.247% |
| 7 | 10.173 | 1630 | 1639 | 1657 | rBV | 708095 | 1306132 | 93.93% | 21.343% |
| 8 | 11.578 | 1897 | 1907 | 1926 | rVB | 589612 | 1013833 | 72.91% | 16.566% |

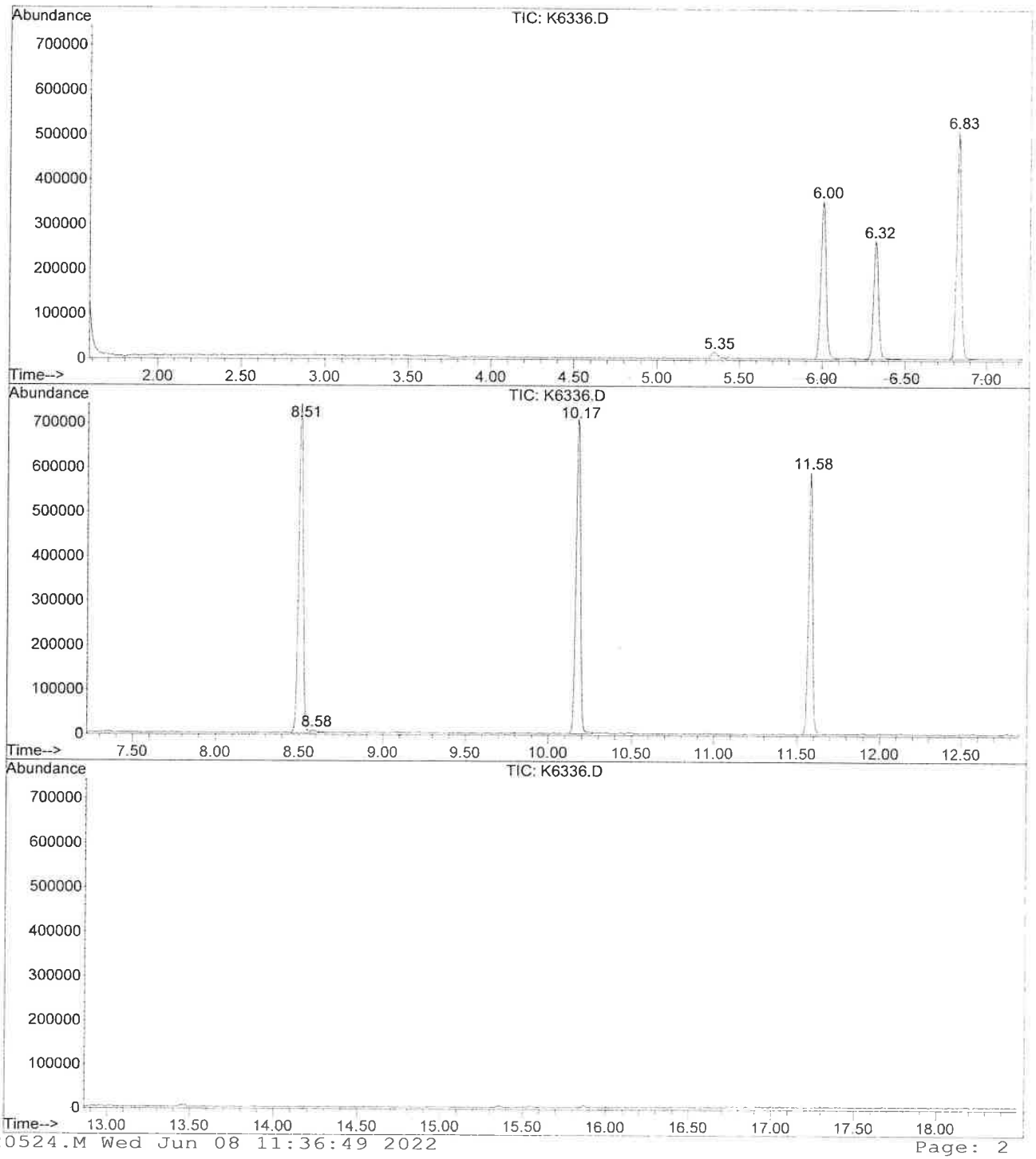
Sum of corrected areas: 6119833

LSC Report - Integrated Chromatogram

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6336.D
Acq On : 6 Jun 2022 19:49
Operator : BARBARA
Sample : BLKA220606-01,BLKA220606-01,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P




K8220524.M Wed Jun 08 11:36:49 2022 Page: 2

Library Search Compound Report

Data Path : C:\MSDChem\1\DATA\22-06-06\
Data File : K6336.D
Acq On : 6 Jun 2022 19:49
Operator : BARBARA
Sample : BLKA220606-01,BLKA220606-01,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220524.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

**********

SAMPLE TRACKING

Finalized 06/21/2022

E22-03213 Page 67

INTEGRATED ANALYTICAL LABORATORIES LLC

IAL Integrated Analytical Laboratories LLC

**Integrated Analytical Labs**
**273 Franklin Road**
**Randolph, NJ 07869**

# Chain of Custody Record

**Contact Us: 973-361-4252**
**Web: www.ialonline.com**

## Customer Information

Company: EWMA
Address: 100 Misty Lane
Parsippany, NJ
Telephone #:
Project Manager: Cathy Bryant
Email Address(es): CathyBryant@ewma.com
Project Name: Swivelier
Project Location (State): Nanuet, NY
Bottle Order #: 202530
☒ "Report to"/"Invoice To" same as above
Sampled by: M. Jakubowski

**COMPLETED BY IAL:**
_____ Field Sampling _____ Equipment Rental

## Reporting Information

☒ Check here if same as "Customer Information"
REPORT TO:
Address: Same
Attn:
INVOICE TO:
Address: Same
Attn:
PO #
Quote #

**Sample Matrix**

DW - Drinking Water
WW - Waste Water
GW - Groundwater
SW - Surface Water
LIQ - Liquid (specify)
M - Multiphasic
OI - Oil
S - Soil
SED - Sediment
SOL - Solid (specify)
SL - Sludge
W - Wipe

## Rush TAT Charge

24 hr - 100%...
48 hr - 75%....
72 hr - 50%....
96 hr - 35%....
5 day - 25%....
6-9 day - 10%

## Deliverables

*Surcharge may apply for regulatory

| NJ, CT, PA | NY |
|---|---|
| ☐ Results Only (Level I) | ☐ ASP Category A |
| ☐ Reduced (Level II/III) | ☐ ASP Category B* |
| ☐ Regulatory/ Full* (Level IV) | |

## EDDs

☐ NJ SRP
☐ NYSDEC EQuIS
☐ lab approved custom EDD
☐ NO EDD REQ'D

## Concentrations Expected:

Low Med High

Known Hazard:
☐ YES ☐ NO
Describe:

## Turn-Around Time (TAT)

Standard (10 business days) Verbal
Rush/date needed
(only if pre-approved)**
Hard Copy: Standard 3 week Other - call for price

## Regulatory Requirement

| New Jersey | New York |
|---|---|
| ☐ GWQS | ☐ AWQS (TOGS Table 1) |
| ☐ IGW | ☐ GWEL (TOGS Table 5) |
| ☐ SRS | ☐ Part 375-6.8(a) - Unrestricted |
| ☐ Ecological | ☐ Part 375-6.8(b) - Restricted |
| ☐ DW | ☐ CP-51 Table 2 or 3 (selection required) |
| ☐ SPLP | Other States / Criteria |
| | ☐ Pennsylvania Act 2 |
| | ☐ CT RCSA 22a-133k1-k3 |
| | ☐ TSCA PCBs |
| | OTHER Regulatory Requirements - specify In comments |

## Petroleum Hydrocarbons - Selection is REQUIRED

☐ NJ EPH-DRO - Category 1
☐ NJ EPH-C40 - Category 2
☐ NJ EPH-Fractionated - Cat 2
☐ CT ETPH
☐ DRO-8015

TAT for PHC, if other than 2 weeks:

## SAMPLE INFORMATION

## ANALYTICAL PARAMETERS (please note if contingent)

| Client ID | Depth (ft only) | Sampling Date | Sampling Time | Matrix | # containers | IAL # | TCL VOA + 15 | Sample Specific Notes: |
|---|---|---|---|---|---|---|---|---|
| MW-13D-060122 | | 6/1/22 | 1325 | GW | 3 | 1 | V | |
| FB-060122 | | 6/1/22 | 0945 | | 2 | 2 | V | |
| TB-060122 | | 6/1/22 | | | 2 | 3 | V | |

Samples previously analyzed by IAL? YES / NO

Preservative Code: 1 = None, 2 = HCl, 3 = HNO3, 4 = MeOH, 5 = NaOH, 6 = H2SO4, 7 = Other

Container Code: A = Amber Glass, B = Plastic, C = Vial, D = Glass, E = EnCore, T = Terracore

Preservative (use code)
Container Type (use code)

*Special Instructions/QC Requirements & Comments:*

**FOR LAB USE ONLY**
SDG #: 3213
Cooler Temp: 4 °C

| Relinquished by (Signature and Company) | Date | Time | Received by (Signature and Company) | Date | Time |
|---|---|---|---|---|---|
| M Jakubowski | 6/1/22 | 1755 | Frank Lavelle / IAL | 6/1/22 | 17:55 |

*Please print legibly and fill out completely. Samples cannot be processed and the turnaround time (TAT) will not start until any ambiguities have been resolved. TAT starts the following day if samples rec'd at lab ≥ 5PM. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY IAL'S TERMS & CONDITIONS (found on rear of pink copy).*

Carrier (check one):
☐ IAL Courier
☐ Client Courier
☐ FedEx/UPS***
***Tracking #:

IAL Rev 11/2019

LAB COPIES - WHITE & YELLOW; CLIENT COPY - PINK

Certification IDs: TNI (TNI01284); CT (PH-0699); NJ (14751); NY (11402); PA (68-00773).

PAGE: of

Jun 03, 2022 @ 08:34

# PROJECT INFORMATION

## E22-03213: SWIVELIER - 202530

**To:** Cathy Bryant
EWMA - HQ
Fax:
EMail: Cathy.Bryant@ewma.com

**Report To**

EWMA - HQ
Lanidex Center
100 Misty Lane
Parsippany, NJ 07054
Attn: Cathy Bryant

**Bill To**

EWMA - HQ
Lanidex Center
100 Misty Lane
Parsippany, NJ 07054
Attn: Cathy Bryant

| Report Format | P.O. # | Received At Lab | PHC Due | Verbal Due | Hardcopy Due |
|---|---|---|---|---|---|
| Reduced | | Jun 01, 2022 @ 17:55 | NA | Jun 16, 2022 | Jun 23, 2022 * |

* Any ***Conditional or Hold*** status will delay final hardcopy report sent date.

**Diskette Req.** SRP TXT, EQ EDD

**Criteria Requirement:** NJ GWQS

| Lab ID | Client Sample ID | Depth | Sampling Time | Matrix | Unit | Field pH/Temp |
|---|---|---|---|---|---|---|
| 03213-001 | MW-13D-060122 | NA | 06/01/22@13:15 | Aqueous | ug/L (ppb) | |
| 03213-002 | FB-060122 | NA | 06/01/22@09:45 | Aqueous | ug/L (ppb) | |
| 03213-003 | TB-060122 | NA | 06/01/22 | Aqueous | ug/L (ppb) | |

* No Cert = IAL does not hold certification for this test/method

| Sample # | Test | Status | Analytical Method | TAT | Holding Time Expires |
|---|---|---|---|---|---|
| 001 | TCL VO + 15 | Analyze | 8260D | STD/2 WKS | 6/15/2022 |
| 002 | TCL VO + 15 | Analyze | 8260D | STD/2 WKS | 6/15/2022 |
| 003 | TCL VO + 15 | Analyze | 8260D | STD/2 WKS | 6/15/2022 |



273 Franklin Road
Randolph, NJ 07869
Phone: 973 361 4252
www.ialonline.com

IAL is a NELAP accredited lab (TNI01284) and maintains certification in Connecticut (PH-0699), New Jersey (14751), New York (11402), and Pennsylvania (68-00773).

## SAMPLE RECEIPT VERIFICATION

CASE NO: **E 22** **03213** CLIENT: EWMA

COOLER TEMPERATURE: 2° - 6°C: ✓ ( See Chain of Custody)

COC: (COMPLETE) / INCOMPLETE **Comments**

**KEY**
✓ = YES/NA
✗ = NO

VOA received: ☐ Encore ☐ IGW - Methanol
(check one) ☐ Terra Core ☐ No Preservative

| | | |
|---|---|---|
| ✓ | Bottles Intact | |
| ✓ | no-Missing Bottles | |
| ✓ | no-Extra Bottles | |
| ✓ | Sufficient Sample Volume | |
| ✓ | no-headspace/bubbles in VOs | |
| ✓ | Labels intact/correct | |
| ✗ | pH Check[1] (refer to Receipt pH Log) | |
| ✓ | Correct bottles/preservative | |
| ✓ | Sufficient Holding/Prep Time[1] | |
| ☐ | Multiphasic Sample | |
| ☐ | Sample to be Subcontracted | |
| ✓ | **Chain of Custody is Clear** | |

[1] All samples with "Analyze Immediately" holding times will be analyzed by this laboratory past the holding time. This includes but is not limited to the following tests: pH, Temperature, Free Residual Chlorine, Total Residual Chlorine, Dissolved Oxygen, Sulfite.

ADDITIONAL COMMENTS:

SAMPLE(S) VERIFIED BY: INITIAL [B] DATE 6/1/22

**CORRECTIVE ACTION REQUIRED:** **YES** ☐ (SEE BELOW) **NO** ☒

If COC is **NOT** clear, ***STOP*** until you get client to authorize/clarify work.

CLIENT NOTIFIED: YES ☐ Date/ Time: _____ NO ☐
PROJECT CONTACT:
SUBCONTRACTED LAB:
DATE SHIPPED:

ADDITIONAL COMMENTS:

VERIFIED/TAKEN BY: INITIAL [DP] DATE 6/2/22

Rev 2 2/11/2021

# *Laboratory Custody Chronicle*

***IAL Case No.***
**E22-03213**

***Client*** EWMA - HQ

***Project*** SWIVELIER - 202530

***Received On*** 6/ 1/2022@17:55

| **Department: Volatiles** | | | ***Prep. Date*** | ***Analyst*** | ***Analysis Date*** | ***Analyst*** |
|---|---|---|---|---|---|---|
| TCL VO + 15 | 03213-001 | Aqueous | n/a | n/a | 6/ 7/22 | Barbara |
| " | -002 | " | n/a | n/a | 6/ 7/22 | Barbara |
| " | -003 | " | n/a | n/a | 6/ 7/22 | Barbara |



NOTE: All soil, sediment, sludge, and solid samples are reported on a dry-weight basis.

*Integrated Analytical Labs ~ 273 Franklin Road, Randolph, NJ 07869 ~ (973) 361-4252*

**LAST PAGE OF DOCUMENT**

Integrated Analytical Laboratories LLC

# *ANALYTICAL DATA REPORT*

Environmental Waste Management Associates, LLC.
Lanidex Center
100 Misty Lane
Parsippany, NJ 07054

Project Name: **SWIVELIER - 202530**
IAL Case Number: **E22-03403**

These data have been reviewed and accepted by:

Michael H. Lefkin, Ph.D.
Laboratory Director



273 Franklin Road
Randolph, NJ 07869
Phone: 973 361 4252

IAL is a NELAP accredited lab (TNI01284) and maintains certification in Connecticut (PH-0699), New Jersey (14751), New York (11402) and Pennsylvania (68-00773).

# Integrated Analytical Laboratories - Table of Contents

# Sample Summary

*IAL Case No.*

**E22-03403**

*Client* EWMA - HQ

*Project* SWIVELIER - 202530

*Received On* 6/ 9/2022@16:35

| *Lab ID* | *Client Sample ID* | *Depth Top/Bottom* | *Sampling Time* | *Matrix* | *# of Container* |
|---|---|---|---|---|---|
| 03403-001 | MW11D | n/a | 6/ 9/2022@13:50 | Aqueous | 4 |
| 03403-002 | MW10D | n/a | 6/ 9/2022@15:25 | Aqueous | 4 |
| 03403-003 | FIELD BLANK | n/a | 6/ 9/2022@14:01 | Aqueous | 2 |
| 03403-004 | TRIP BLANK | n/a | 6/ 9/2022 | Aqueous | 2 |



*Integrated Analytical Labs ~ 273 Franklin Road, Randolph, NJ 07869 ~ (973) 361-4252*

## DATA QUALIFIERS AND FLAGS

| | |
|---|---|
| B | Indicates the analyte found in the associated method blank and in the sample due to potential lab contamination. |
| C | Indicates analyte is a common laboratory contaminant. |
| D | Indicates analyte was reported from diluted analysis. |
| E | Identifies a compound concentration that exceeds the upper level of the calibration range of the instrument |
| J | Indicates an estimated value either when the concentration in the sample is less than the RL or for qualification of TICs |
| J1 | Indicates an estimated value when ICC or CCV did not meet the criteria. |
| M | Indicates matrix interference |
| N | Presumptive evidence of a compound from the use of GC/MS library search. |
| T | Sample analyzed outside of holding time |
| X | Indicates samples analyzed for total and dissolved metals differ at ≤20% RPD. |
| Y | Indicates DO depletion in the BOD blank is >0.20ppm |
| Z | Indicates internal standard failure. Sample results are either biased high or biased low. |
| $ | Value outside NJDEP DKQP Limits |
| * | Result outside of QC limits |

## PROJECT NOTES

- All results for soils, solids, and sludges are reported on a dry-weight basis except where noted
- All test results and QC are compliant with TNI or other applicable state agency requirements/guidance unless otherwise notated in the case narrative and/or project information page.
- The case narrative for this SDG should be consulted to determine any non-conformances.
- Any samples with 15-minute or "analyze immediately" holding times (e.g. pH, Dissolved Oxygen, Sulfite, etc.) which are analyzed in the laboratory are considered out of holding time.
- IAL is a NELAP/TNI certified laboratory (TNI ID# TNI01284). IAL retains certification in Connecticut (PH-0699), New Jersey (14751), New York (11402), and Pennsylvania (68-00773).
- Certification is not required to perform analyses in the following states: AL, CO, DE, GA, HI, ID, IN, KY, MD, MI, MS, MO, MT, NE, NM, SD and TN. IAL can perform all analyses, except Drinking Water, within its scope of capabilities in these states.

## ACRONYMS AND ABBREVIATIONS

| | | | |
|---|---|---|---|
| CFU | Colony Forming Unit | ND | Indicates analyte was analyzed for but not detected at MDL or RL (only if MDL is not used) |
| CCB | Continuing Calibration Blank | | |
| CCV | Continuing Calibration Verification | NTU | Nephelometric Turbidity Units |
| DF | Dilution Factor | ppb | Parts per billion. Reported as µg/L or µg/kg |
| DL | Attached as a suffix to a diluted sample | ppm | Parts per million. Reported as mg/L, µg/mL or mg/kg |
| DUP | Duplicate | QC | Quality Control |
| ICB | Initial Calibration Blank | % Rec | Percent Recovery |
| ICC | Initial Calibration Curve | RL | Reporting Limit. The RL is typically determined by the concentration of the lowest standard in the calibration curve |
| ICV | Initial Calibration Verification | | |
| kg | kilogram | | |
| L | Liter | RPD | Relative Percent Difference |
| LCS | Laboratory Control Sample | RSD | Relative Standard Deviation |
| LCSD | Laboratory Control Sample Duplicate | RT | Retention Time |
| MDL | Method Detection Limit as determined according to 40 CFR Part 136 Appendix B | SU | Standard Units |
| | | TIC | Tentatively Identified Compound AKA Library Search Compounds |
| MF | Membrane Filter | | |
| mg | milligram (1000mg = 1g) | TNI | The NELAC (National Environmental Laboratory Accreditation Council) Institute |
| µg | microgram (1000µg = 1mg) | | |
| ml | milliliter (1000ml = 1L) | TNTC | Too numerous to count |
| µl | microliter (1000µl = 1ml) | * | When attached to a compound name, indicates this analyte was analyzed by Method SW-846 8270 SIM |
| µmhos | Conductivity units - resistance expressed in ohms | | |
| MPN | Most Probable Number | ^ | When attached to a compound name, indicates this analyte was analyzed by Method SW-846 8011 or EPA 504.1 |
| MS | Matrix Spike | | |
| MSD | Matrix Spike Duplicate | | |
| NA | Not applicable | < | Less than; In conjunction with a numerical value, indicates a concentration less than the RL or MDL |
| NC | Not calculated | | |

SAMPLE DELIVERY GROUP CASE NARRATIVE
(Conformance / Non-Conformance Summary)

# SAMPLE DELIVERY GROUP CASE NARRATIVE

## SDG#: E22-03403

Integrated Analytical Laboratories, LLC. received four (4) samples** from EWMA - HQ (IAL SDG# **E22-03403**, Project: SWIVELIER - 202530) on June 9, 2022 for the analysis of :

( 1 ) TCL VO
( 3 ) TCL VO + 15

**Number of samples listed above may be greater than what is listed on the chain of custody. Any samples that require in-house filtration or splitting will be counted as separate samples.

Samples were received in good condition with documentation in order.
Cooler temperature was acceptable at 4 ± 2 degree C.

| **Volatiles By SW 8260D** | **Batch: 220616-02** | **Matrix: Aqueous** |
|---|---|---|

**QC**
- Calibration curve met QC criteria.
- Internal standards recovery met QC criteria.
- Surrogate percent recovery met QC criteria.
- Method blank met QC criteria.
- LCS percent recovery met QC criteria.
- MS/MSD RPD met QC criteria.
- MS/MSD percent recovery met QC criteria.

**E22-03403**
- All samples were received within holding time.
- All samples were analyzed within holding time.

Dilution Summary:

| Sample ID | DF(s) | Dilution For |
|---|---|---|
| E22-03403-001 | 1 | NA |
| E22-03403-002 | 50 | Target compound(s). |
| E22-03403-003 | 1 | NA |
| E22-03403-004 | 1 | NA |

A review of the QA/QC measures for the analysis of the sample(s) contained in this report has been performed by:

Tom Mularski
Reviewed by

6/23/2022
Date

# DATA OF KNOWN QUALITY CONFORMANCE/NON-CONFORMANCE SUMMARY QUESTIONNAIRE

***Laboratory Name:*** Integrated Analytical Laboratories
***Client:*** Environmental Waste Management Associates, LLC.
***Project Location:*** SWIVELIER - 202530
***IAL Project #:*** E22-03403
***IAL Sample ID(s):*** E22-03403-001 ~ -004
***Sampling Date(s):*** 6/9/2022

***List of DKQP Method Used:***
TCL VO by 8260D

***Notes:*** For all questions to which the response was "No" (with the exception of question #7), additional information is provided in the case narrative. If the answer to question #1, #1A, or #1B is "No", the data package does not meet the requirements for "Data of Known Quality."

| | | YES | NO | N/A |
|---|---|---|---|---|
| 1 | For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP | X | | |
| 1A | Were the method specified handling, preservation, and holding time requirements met? | X | | |
| 1B | EPH Method: Was the EPH method conducted without significant modifications? (see Section 11.3 of respective DKQ methods) | | | X |
| 2 | Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)? | X | | |
| 3 | Were samples received at an appropriate temperature (4±2° C)? | X | | |
| 4 | Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved? | X | | |
| 5A | Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt? | X | | |
| 5B | Were these reporting limits met? | | X | |
| 6 | For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP? | X | | |
| 7 | Are project-specific matrix spikes and/or laboratory duplicates included in this data set? | | X | |

RESULTS SUMMARY REPORT

**SUMMARY REPORT**
**Client: Environmental Waste Management Associates, LLC.**
**Project: SWIVELIER - 202530**
**Lab Case No.: E22-03403**

| Lab ID: | 03403-001 | | | 03403-002 | | | 03403-003 | | | 03403-004 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | MW11D | | | MW10D | | | FIELD BLANK | | | TRIP BLANK | | |
| Matrix: | Aqueous | | | Aqueous | | | Aqueous | | | Aqueous | | |
| Sampled Date | 6/9/22 | | | 6/9/22 | | | 6/9/22 | | | 6/9/22 | | |
| **PARAMETER(Units)** | Conc | Q | MDL | Conc | Q | MDL | Conc | Q | MDL | Conc | Q | MDL |
| **Volatiles (Units)** | *(ug/L)* | | | *(ug/L)* | | | *(ug/L)* | | | *(ug/L)* | | |
| Methyl tert-butyl ether (MTBE) | 0.330 | J | 0.245 | ND | | 12.3 | ND | | 0.245 | ND | | 0.245 |
| cis-1,2-Dichloroethene | 1.16 | | 0.277 | 2990 | D | 13.9 | ND | | 0.277 | ND | | 0.277 |
| Trichloroethene | 1.47 | | 0.347 | 6260 | D | 17.4 | ND | | 0.347 | ND | | 0.347 |
| Tetrachloroethene | ND | | 0.365 | 27.8 | D | 18.3 | ND | | 0.365 | ND | | 0.365 |
| **TOTAL VO's:** | 2.96 | J | | 9280 | D | | ND | | | ND | | |
| **TOTAL TIC's:** | ND | | | ND | | | 7.70 | JN | | ND | | |
| **TOTAL VO's & TIC's:** | 2.96 | J | | 9280 | D | | 7.70 | | | ND | | |

ND = Analyzed for but Not Detected at the MDL
J = Indicates an estimated value either when the concentration in the sample is greater than MDL and less than RL, or for qualification of TICs
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
N = Presumptive evidence of a compound from the use of GC/MS library search.

ANALYTICAL RESULTS

## VOLATILE ORGANICS

Lab ID: E22-03403-001
Client ID: MW11D
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Data file: K6632.D 06/17/2022 10:00

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Dichlorodifluoromethane | ND | | 1.00 | 0.552 |
| Chloromethane | ND | | 0.500 | 0.309 |
| Vinyl chloride | ND | | 1.00 | 0.352 |
| Bromomethane | ND | | 1.00 | 0.386 |
| Chloroethane | ND | | 0.500 | 0.324 |
| Trichlorofluoromethane | ND | | 1.00 | 0.503 |
| 1,1-Dichloroethene | ND | | 0.500 | 0.363 |
| Acetone | ND | | 2.00 | 0.847 |
| Carbon disulfide | ND | | 1.00 | 0.403 |
| Methylene chloride | ND | | 1.00 | 0.500 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 0.372 |
| Methyl tert-butyl ether (MTBE) | 0.330 | J | 0.500 | 0.245 |
| 1,1-Dichloroethane | ND | | 0.500 | 0.285 |
| cis-1,2-Dichloroethene | 1.16 | | 0.500 | 0.277 |
| 2-Butanone (MEK) | ND | | 2.00 | 0.802 |
| Bromochloromethane | ND | | 1.00 | 0.379 |
| Chloroform | ND | | 0.500 | 0.285 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 0.381 |
| Carbon tetrachloride | ND | | 0.500 | 0.349 |
| 1,2-Dichloroethane (EDC) | ND | | 0.500 | 0.273 |
| Benzene | ND | | 0.500 | 0.270 |
| Trichloroethene | 1.47 | | 0.500 | 0.347 |
| 1,2-Dichloropropane | ND | | 0.500 | 0.272 |
| 1,4-Dioxane | ND | | 100 | 51.1 |
| Bromodichloromethane | ND | | 0.500 | 0.258 |
| cis-1,3-Dichloropropene | ND | | 1.00 | 0.264 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1.00 | 0.611 |

## VOLATILE ORGANICS

Lab ID: E22-03403-001
Client ID: MW11D
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Data file: K6632.D 06/17/2022 10:00

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Toluene | ND | | 0.500 | 0.302 |
| trans-1,3-Dichloropropene | ND | | 1.00 | 0.330 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 0.313 |
| Tetrachloroethene | ND | | 0.500 | 0.365 |
| 2-Hexanone | ND | | 1.00 | 0.818 |
| Dibromochloromethane | ND | | 0.500 | 0.263 |
| 1,2-Dibromoethane (EDB) | ND | | 0.500 | 0.289 |
| Chlorobenzene | ND | | 0.500 | 0.304 |
| Ethylbenzene | ND | | 0.500 | 0.313 |
| Total Xylenes | ND | | 1.00 | 0.345 |
| Styrene | ND | | 1.00 | 0.317 |
| Bromoform | ND | | 0.500 | 0.328 |
| Isopropylbenzene | ND | | 1.00 | 0.332 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | 0.284 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 0.386 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 0.397 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 0.354 |
| 1,2-Dibromo-3-chloropropane | ND | | 1.00 | 0.410 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | 0.358 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | 0.406 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 1.00 | 0.538 |
| Methyl acetate | ND | | 0.500 | 0.345 |
| Cyclohexane | ND | | 1.00 | 0.469 |
| Methylcyclohexane | ND | | 1.00 | 0.421 |
| 1,3-Dichloropropene (cis- and trans-) | ND | | 1.00 | 0.264 |
| Total Target Compounds (52): | 2.96 | J | | |

D --- Dilution Performed
J --- Value Less than RL & greater than MDL
E --- Exceeds upper level of Calibration curve

B --- Compound detected in Blank
C --- Common laboratory contamination

## VOLATILE ORGANICS
## Tentatively Identified Compounds

Lab ID: E22-03403-001
Client ID: MW11D
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Date File: K6632.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
Dilution Factor: 1
% Moisture: 100

| CAS # | Compound | Estimated Concentration | Q | Retention Time |
|---|---|---|---|---|
| | No peaks detected | | | |

Total TICs = 0

D --- Dilution Performed

J --- Estimated concentration for TICs

N --- Presumptive evidence of a compound from the use of GC/MS NIST library search

## VOLATILE ORGANICS

Lab ID: E22-03403-002
Client ID: MW10D
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Data file: K6633.D 06/17/2022 10:29

GC/MS Column: DB-624
Sample wt/vol: 0.1mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 50

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Dichlorodifluoromethane | ND | | 50.0 | 27.6 |
| Chloromethane | ND | | 25.0 | 15.5 |
| Vinyl chloride | ND | | 50.0 | 17.6 |
| Bromomethane | ND | | 50.0 | 19.3 |
| Chloroethane | ND | | 25.0 | 16.2 |
| Trichlorofluoromethane | ND | | 50.0 | 25.2 |
| 1,1-Dichloroethene | ND | | 25.0 | 18.2 |
| Acetone | ND | | 100 | 42.4 |
| Carbon disulfide | ND | | 50.0 | 20.2 |
| Methylene chloride | ND | | 50.0 | 25.0 |
| trans-1,2-Dichloroethene | ND | | 25.0 | 18.6 |
| Methyl tert-butyl ether (MTBE) | ND | | 25.0 | 12.3 |
| 1,1-Dichloroethane | ND | | 25.0 | 14.3 |
| cis-1,2-Dichloroethene | 2990 | D | 25.0 | 13.9 |
| 2-Butanone (MEK) | ND | | 100 | 40.1 |
| Bromochloromethane | ND | | 50.0 | 19.0 |
| Chloroform | ND | | 25.0 | 14.3 |
| 1,1,1-Trichloroethane | ND | | 25.0 | 19.1 |
| Carbon tetrachloride | ND | | 25.0 | 17.5 |
| 1,2-Dichloroethane (EDC) | ND | | 25.0 | 13.7 |
| Benzene | ND | | 25.0 | 13.5 |
| Trichloroethene | 6260 | D | 25.0 | 17.4 |
| 1,2-Dichloropropane | ND | | 25.0 | 13.6 |
| 1,4-Dioxane | ND | | 5000 | 2560 |
| Bromodichloromethane | ND | | 25.0 | 12.9 |
| cis-1,3-Dichloropropene | ND | | 50.0 | 13.2 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 50.0 | 30.6 |

## VOLATILE ORGANICS

Lab ID: E22-03403-002
Client ID: MW10D
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Data file: K6633.D 06/17/2022 10:29

GC/MS Column: DB-624
Sample wt/vol: 0.1mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 50

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Toluene | ND | | 25.0 | 15.1 |
| trans-1,3-Dichloropropene | ND | | 50.0 | 16.5 |
| 1,1,2-Trichloroethane | ND | | 25.0 | 15.7 |
| Tetrachloroethene | 27.8 | D | 25.0 | 18.3 |
| 2-Hexanone | ND | | 50.0 | 40.9 |
| Dibromochloromethane | ND | | 25.0 | 13.2 |
| 1,2-Dibromoethane (EDB) | ND | | 25.0 | 14.5 |
| Chlorobenzene | ND | | 25.0 | 15.2 |
| Ethylbenzene | ND | | 25.0 | 15.7 |
| Total Xylenes | ND | | 50.0 | 17.3 |
| Styrene | ND | | 50.0 | 15.9 |
| Bromoform | ND | | 25.0 | 16.4 |
| Isopropylbenzene | ND | | 50.0 | 16.6 |
| 1,1,2,2-Tetrachloroethane | ND | | 50.0 | 14.2 |
| 1,3-Dichlorobenzene | ND | | 25.0 | 19.3 |
| 1,4-Dichlorobenzene | ND | | 25.0 | 19.9 |
| 1,2-Dichlorobenzene | ND | | 25.0 | 17.7 |
| 1,2-Dibromo-3-chloropropane | ND | | 50.0 | 20.5 |
| 1,2,4-Trichlorobenzene | ND | | 50.0 | 17.9 |
| 1,2,3-Trichlorobenzene | ND | | 50.0 | 20.3 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 50.0 | 26.9 |
| Methyl acetate | ND | | 25.0 | 17.3 |
| Cyclohexane | ND | | 50.0 | 23.5 |
| Methylcyclohexane | ND | | 50.0 | 21.1 |
| 1,3-Dichloropropene (cis- and trans-) | ND | | 50.0 | 13.2 |
| Total Target Compounds (52): | 9280 | D | | |

D --- Dilution Performed
J --- Value Less than RL & greater than MDL
E --- Exceeds upper level of Calibration curve
B --- Compound detected in Blank
C --- Common laboratory contamination

## VOLATILE ORGANICS
### Tentatively Identified Compounds

Lab ID: E22-03403-002
Client ID: MW10D
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Date File: K6633.D

GC/MS Column: DB-624
Sample wt/vol: 0.1mL
Matrix-Units: Aqueous-µg/L
Dilution Factor: 50
% Moisture: 100

| CAS # | Compound | Estimated Concentration | Q | Retention Time |
|---|---|---|---|---|
| | No peaks detected | | | |

Total TICs = 0

D --- Dilution Performed
J --- Estimated concentration for TICs
N --- Presumptive evidence of a compound from the use of GC/MS NIST library search

## VOLATILE ORGANICS

Lab ID: E22-03403-003
Client ID: FIELD_BLANK
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Data file: K6631.D 06/17/2022 09:32

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Dichlorodifluoromethane | ND | | 1.00 | 0.552 |
| Chloromethane | ND | | 0.500 | 0.309 |
| Vinyl chloride | ND | | 1.00 | 0.352 |
| Bromomethane | ND | | 1.00 | 0.386 |
| Chloroethane | ND | | 0.500 | 0.324 |
| Trichlorofluoromethane | ND | | 1.00 | 0.503 |
| 1,1-Dichloroethene | ND | | 0.500 | 0.363 |
| Acetone | ND | | 2.00 | 0.847 |
| Carbon disulfide | ND | | 1.00 | 0.403 |
| Methylene chloride | ND | | 1.00 | 0.500 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 0.372 |
| Methyl tert-butyl ether (MTBE) | ND | | 0.500 | 0.245 |
| 1,1-Dichloroethane | ND | | 0.500 | 0.285 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 0.277 |
| 2-Butanone (MEK) | ND | | 2.00 | 0.802 |
| Bromochloromethane | ND | | 1.00 | 0.379 |
| Chloroform | ND | | 0.500 | 0.285 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 0.381 |
| Carbon tetrachloride | ND | | 0.500 | 0.349 |
| 1,2-Dichloroethane (EDC) | ND | | 0.500 | 0.273 |
| Benzene | ND | | 0.500 | 0.270 |
| Trichloroethene | ND | | 0.500 | 0.347 |
| 1,2-Dichloropropane | ND | | 0.500 | 0.272 |
| 1,4-Dioxane | ND | | 100 | 51.1 |
| Bromodichloromethane | ND | | 0.500 | 0.258 |
| cis-1,3-Dichloropropene | ND | | 1.00 | 0.264 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1.00 | 0.611 |

## VOLATILE ORGANICS

Lab ID: E22-03403-003
Client ID: FIELD_BLANK
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Data file: K6631.D 06/17/2022 09:32

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Toluene | ND | | 0.500 | 0.302 |
| trans-1,3-Dichloropropene | ND | | 1.00 | 0.330 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 0.313 |
| Tetrachloroethene | ND | | 0.500 | 0.365 |
| 2-Hexanone | ND | | 1.00 | 0.818 |
| Dibromochloromethane | ND | | 0.500 | 0.263 |
| 1,2-Dibromoethane (EDB) | ND | | 0.500 | 0.289 |
| Chlorobenzene | ND | | 0.500 | 0.304 |
| Ethylbenzene | ND | | 0.500 | 0.313 |
| Total Xylenes | ND | | 1.00 | 0.345 |
| Styrene | ND | | 1.00 | 0.317 |
| Bromoform | ND | | 0.500 | 0.328 |
| Isopropylbenzene | ND | | 1.00 | 0.332 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | 0.284 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 0.386 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 0.397 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 0.354 |
| 1,2-Dibromo-3-chloropropane | ND | | 1.00 | 0.410 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | 0.358 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | 0.406 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 1.00 | 0.538 |
| Methyl acetate | ND | | 0.500 | 0.345 |
| Cyclohexane | ND | | 1.00 | 0.469 |
| Methylcyclohexane | ND | | 1.00 | 0.421 |
| 1,3-Dichloropropene (cis- and trans-) | ND | | 1.00 | 0.264 |

Total Target Compounds (52): 0

D --- Dilution Performed
J --- Value Less than RL & greater than MDL
E --- Exceeds upper level of Calibration curve

B --- Compound detected in Blank
C --- Common laboratory contamination

## VOLATILE ORGANICS
### Tentatively Identified Compounds

Lab ID: E22-03403-003
Client ID: FIELD_BLANK
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Date File: K6631.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
Dilution Factor: 1
% Moisture: 100

| CAS # | Compound | Estimated Concentration | Q | Retention Time |
|---|---|---|---|---|
| 001066-40-6 | Silanol, trimethyl- | 7.70 | JN | 5.35 |

Total TICs = 7.70 JN

D --- Dilution Performed
J --- Estimated concentration for TICs
N --- Presumptive evidence of a compound from the use of GC/MS NIST library search

## VOLATILE ORGANICS

Lab ID: E22-03403-004
Client ID: TRIP_BLANK
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Data file: K6630.D 06/17/2022 09:03

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Dichlorodifluoromethane | ND | | 1.00 | 0.552 |
| Chloromethane | ND | | 0.500 | 0.309 |
| Vinyl chloride | ND | | 1.00 | 0.352 |
| Bromomethane | ND | | 1.00 | 0.386 |
| Chloroethane | ND | | 0.500 | 0.324 |
| Trichlorofluoromethane | ND | | 1.00 | 0.503 |
| 1,1-Dichloroethene | ND | | 0.500 | 0.363 |
| Acetone | ND | | 2.00 | 0.847 |
| Carbon disulfide | ND | | 1.00 | 0.403 |
| Methylene chloride | ND | | 1.00 | 0.500 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 0.372 |
| Methyl tert-butyl ether (MTBE) | ND | | 0.500 | 0.245 |
| 1,1-Dichloroethane | ND | | 0.500 | 0.285 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 0.277 |
| 2-Butanone (MEK) | ND | | 2.00 | 0.802 |
| Bromochloromethane | ND | | 1.00 | 0.379 |
| Chloroform | ND | | 0.500 | 0.285 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 0.381 |
| Carbon tetrachloride | ND | | 0.500 | 0.349 |
| 1,2-Dichloroethane (EDC) | ND | | 0.500 | 0.273 |
| Benzene | ND | | 0.500 | 0.270 |
| Trichloroethene | ND | | 0.500 | 0.347 |
| 1,2-Dichloropropane | ND | | 0.500 | 0.272 |
| 1,4-Dioxane | ND | | 100 | 51.1 |
| Bromodichloromethane | ND | | 0.500 | 0.258 |
| cis-1,3-Dichloropropene | ND | | 1.00 | 0.264 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1.00 | 0.611 |

## VOLATILE ORGANICS

Lab ID: E22-03403-004
Client ID: TRIP_BLANK
Date Received: 06/09/2022
Date Analyzed: 06/17/2022
Data file: K6630.D 06/17/2022 09:03

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Toluene | ND | | 0.500 | 0.302 |
| trans-1,3-Dichloropropene | ND | | 1.00 | 0.330 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 0.313 |
| Tetrachloroethene | ND | | 0.500 | 0.365 |
| 2-Hexanone | ND | | 1.00 | 0.818 |
| Dibromochloromethane | ND | | 0.500 | 0.263 |
| 1,2-Dibromoethane (EDB) | ND | | 0.500 | 0.289 |
| Chlorobenzene | ND | | 0.500 | 0.304 |
| Ethylbenzene | ND | | 0.500 | 0.313 |
| Total Xylenes | ND | | 1.00 | 0.345 |
| Styrene | ND | | 1.00 | 0.317 |
| Bromoform | ND | | 0.500 | 0.328 |
| Isopropylbenzene | ND | | 1.00 | 0.332 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | 0.284 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 0.386 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 0.397 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 0.354 |
| 1,2-Dibromo-3-chloropropane | ND | | 1.00 | 0.410 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | 0.358 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | 0.406 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 1.00 | 0.538 |
| Methyl acetate | ND | | 0.500 | 0.345 |
| Cyclohexane | ND | | 1.00 | 0.469 |
| Methylcyclohexane | ND | | 1.00 | 0.421 |
| 1,3-Dichloropropene (cis- and trans-) | ND | | 1.00 | 0.264 |

Total Target Compounds (52): 0

D --- Dilution Performed
J --- Value Less than RL & greater than MDL
E --- Exceeds upper level of Calibration curve

B --- Compound detected in Blank
C --- Common laboratory contamination

VOLATILE ORGANICS

VOLATILE ORGANICS QC SUMMARY

## VOLATILE SURROGATE PERCENT RECOVERY SUMMARY

**Date Analyzed:** 06/17/2022

| Lab Sample ID | Matrix | File ID | SMC1 # | SMC2 # | SMC3 # |
|---|---|---|---|---|---|
| BLK220616-02 | AQUEOUS | K6617.D | 92 | 96 | 95 |
| E22-03482-010 | AQUEOUS | K6618.D | 90 | 96 | 96 |
| LCSA220616-02 | AQUEOUS | K6619.D | 91 | 98 | 102 |
| E22-03482-009MS | AQUEOUS | K6620.D | 89 | 98 | 101 |
| E22-03482-005 | AQUEOUS | K6622.D | 91 | 95 | 94 |
| E22-03482-009 | AQUEOUS | K6623.D | 93 | 96 | 95 |
| E22-03482-012 | AQUEOUS | K6624.D | 96 | 96 | 96 |
| E22-03482-014 | AQUEOUS | K6625.D | 99 | 96 | 95 |
| E22-03482-013 | AQUEOUS | K6626.D | 100 | 95 | 100 |
| E22-03482-015 | AQUEOUS | K6627.D | 98 | 96 | 100 |
| E22-03449-001 | AQUEOUS | K6628.D | 95 | 97 | 96 |
| E22-03449-002 | AQUEOUS | K6629.D | 97 | 97 | 96 |
| E22-03403-004 | AQUEOUS | K6630.D | 99 | 97 | 96 |
| E22-03403-003 | AQUEOUS | K6631.D | 100 | 96 | 95 |
| E22-03403-001 | AQUEOUS | K6632.D | 100 | 96 | 97 |
| E22-03403-002 | AQUEOUS | K6633.D | 100 | 95 | 92 |
| E22-03449-002DUP | AQUEOUS | K6634.D | 101 | 96 | 93 |
| E22-03482-011 | AQUEOUS | K6635.D | 100 | 98 | 101 |
| E22-03482-008DL | AQUEOUS | K6636.D | 97 | 100 | 101 |

| | Concentration | DKQPs | Leachate Aqueous | Soil |
|---|---|---|---|---|
| SMC1 = 1,2-Dichloroethane-d4 | 50 ppb | 70-130 | 80-122 | 33-166 |
| SMC2 = Toluene-d8 | 50 ppb | 70-130 | 70-127 | 48-142 |
| SMC3 = Bromofluorobenzene | 50 ppb | 70-130 | 79-123 | 42-149 |

# Column used to flag recovery values that did not meet criteria
* Values outside of QC limits
$ Values outside of NJ DKQP limits
D Surrogate diluted out
M Matrix interference

FORM 2

8260

## LCS ACCURACY REPORT

Lab ID: LCSA220616-02
Date Received: NA
Date Analyzed: 06/17/2022
LCS Data file: K6619.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Conc. Add | Conc. LCS | %Rec. LCS | # | Limits |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 50.0 | 50.7 | 101 | | 37-146 |
| Chloromethane | 50.0 | 49.7 | 99 | | 34-141 |
| Vinyl chloride | 50.0 | 54.4 | 109 | | 60-130 |
| Bromomethane | 50.0 | 46.4 | 93 | | 58-143 |
| Chloroethane | 50.0 | 49.3 | 99 | | 57-154 |
| Trichlorofluoromethane | 50.0 | 51.6 | 103 | | 41-139 |
| Acrolein | 150 | 141.3 | 94 | | 35-156 |
| 1,1-Dichloroethene | 50.0 | 50.1 | 100 | | 51-151 |
| Acetone | 100 | 76.1 | 76 | | 61-144 |
| Carbon disulfide | 50.0 | 49.4 | 99 | | 52-156 |
| Vinyl acetate | 50.0 | 46.0 | 92 | | 43-148 |
| Methylene chloride | 50.0 | 48.2 | 96 | | 50-145 |
| Acrylonitrile | 150.0 | 126.3 | 84 | | 52-158 |
| tert-Butyl alcohol (TBA) | 100.0 | 90.7 | 91 | | 60-140 |
| trans-1,2-Dichloroethene | 50.0 | 48.1 | 96 | | 50-149 |
| Methyl tert-butyl ether (MTBE) | 50.0 | 49.4 | 99 | | 62-132 |
| 1,1-Dichloroethane | 50.0 | 48.8 | 98 | | 62-132 |
| Diisopropyl ether (DIPE) | 50.0 | 48.7 | 97 | | 38-148 |
| cis-1,2-Dichloroethene | 50.0 | 50.6 | 101 | | 64-133 |
| 2,2-Dichloropropane | 50.0 | 48.9 | 98 | | 37-153 |
| 2-Butanone (MEK) | 100 | 81.2 | 81 | | 55-135 |
| Bromochloromethane | 50.0 | 49.5 | 99 | | 56-138 |
| Chloroform | 50.0 | 48.2 | 96 | | 57-133 |
| 1,1,1-Trichloroethane | 50.0 | 51.1 | 102 | | 42-142 |
| Carbon tetrachloride | 50.0 | 51.4 | 103 | | 40-144 |
| 1,1-Dichloropropene | 50.0 | 51.6 | 103 | | 57-133 |
| 1,2-Dichloroethane (EDC) | 50.0 | 46.0 | 92 | | 43-143 |
| Benzene | 50.0 | 51.0 | 102 | | 53-140 |
| Trichloroethene | 50.0 | 54.4 | 109 | | 42-139 |
| 1,2-Dichloropropane | 50.0 | 47.7 | 95 | | 62-137 |
| Dibromomethane | 50.0 | 47.4 | 95 | | 50-140 |
| 1,4-Dioxane | 1500 | 1337 | 89 | | 62-131 |
| Bromodichloromethane | 50.0 | 49.5 | 99 | | 50-139 |
| 2-Chloroethyl vinyl ether | 100 | 95.4 | 95 | | 32-150 |
| cis-1,3-Dichloropropene | 50.0 | 47.1 | 94 | | 41-152 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 97.6 | 98 | | 41-146 |
| Toluene | 50.0 | 52.3 | 105 | | 42-150 |
| trans-1,3-Dichloropropene | 50.0 | 47.0 | 94 | | 40-149 |
| 1,1,2-Trichloroethane | 50.0 | 48.6 | 97 | | 59-137 |
| Tetrachloroethene | 50.0 | 55.6 | 111 | | 51-131 |
| 1,3-Dichloropropane | 50.0 | 50.0 | 100 | | 50-147 |

## LCS ACCURACY REPORT

Lab ID: LCSA220616-02
Date Received: NA
Date Analyzed: 06/17/2022
LCS Data file: K6619.D

GC/MS Column: DB 624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Conc. Add | Conc. LCS | %Rec. LCS | # | Limits |
|---|---|---|---|---|---|
| 2-Hexanone | 100 | 95.5 | 96 | | 57-139 |
| Dibromochloromethane | 50.0 | 52.7 | 105 | | 36-150 |
| 1,2-Dibromoethane (EDB) | 50.0 | 51.3 | 103 | | 46-149 |
| Chlorobenzene | 50.0 | 50.4 | 101 | | 46-148 |
| 1,1,1,2-Tetrachloroethane | 50.0 | 51.1 | 102 | | 62-138 |
| Ethylbenzene | 50.0 | 54.0 | 108 | | 46-156 |
| m,p-Xylene | 100.0 | 109.2 | 109 | | 55-142 |
| o-Xylene | 50.0 | 54.8 | 110 | | 43-166 |
| Styrene | 50.0 | 54.1 | 108 | | 50-161 |
| Bromoform | 50.0 | 53.2 | 106 | | 31-149 |
| Isopropylbenzene | 50.0 | 55.7 | 111 | | 70-130 |
| 1,1,2,2-Tetrachloroethane | 50.0 | 45.5 | 91 | | 51-131 |
| Bromobenzene | 50.0 | 53.5 | 107 | | 65-132 |
| 1,2,3-Trichloropropane | 50.0 | 49.8 | 100 | | 57-144 |
| n-Propylbenzene | 50.0 | 55.4 | 111 | | 63-132 |
| 2-Chlorotoluene | 50.0 | 54.6 | 109 | | 38-161 |
| 1,3,5-Trimethylbenzene | 50.0 | 53.2 | 106 | | 59-147 |
| 4-Chlorotoluene | 50.0 | 53.7 | 107 | | 52-141 |
| tert-Butylbenzene | 50.0 | 55.6 | 111 | | 49-143 |
| 1,2,4-Trimethylbenzene | 50.0 | 52.2 | 104 | | 56-147 |
| sec-Butylbenzene | 50.0 | 54.2 | 108 | | 51-143 |
| 1,3-Dichlorobenzene | 50.0 | 52.6 | 105 | | 59-131 |
| 4-Isopropyltoluene | 50.0 | 53.8 | 108 | | 51-143 |
| 1,4-Dichlorobenzene | 50.0 | 53.3 | 107 | | 65-131 |
| n-Butylbenzene | 50.0 | 49.1 | 98 | | 55-142 |
| 1,2-Dichlorobenzene | 50.0 | 52.1 | 104 | | 64-132 |
| 1,2-Dibromo-3-chloropropane | 50.0 | 39.7 | 79 | | 33-161 |
| 1,2,4-Trichlorobenzene | 50.0 | 41.7 | 83 | | 32-148 |
| Hexachlorobutadiene | 50.0 | 43.2 | 86 | | 19-151 |
| Naphthalene | 50.0 | 39.8 | 80 | | 67-141 |
| 1,2,3-Trichlorobenzene | 50.0 | 37.1 | 74 | | 34-156 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 50.0 | 55.1 | 110 | | 56-154 |
| Methyl acetate | 50.0 | 44.7 | 89 | | 41-147 |
| Cyclohexane | 50.0 | 56.4 | 113 | | 38-150 |
| Methylcyclohexane | 50.0 | 58.2 | 116 | | 48-138 |

# Column used to flag recovery and RPD values that did not meet criteria
* Values outside of QC limits
$ Values outside of NJ DKQP limits

## LCS ACCURACY REPORT

Lab ID: LCSA220616-02
Date Received: NA
Date Analyzed: 06/17/2022
LCS Data file: K6619.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Conc. Add | LCS | MS Conc. | %Rec | # |
|---|---|---|---|---|---|

As per SW-846 8260C, up to 10% of the compounds may be out , but must be within 40-160%
As per NJDEP DKQPs, only the following compounds may be in the 40-160% range:
Acetone; Bromomethane; 2-Butanone (MEK); Carbon disulfide; Chloroethane; Chloromethane
1,2-Dibromo-3-chloropropane; Dichlorodifluoromethane; 1,4-Dioxane; 2-Hexanone
Naphthalene; 4-Methyl-2-pentanone (MIBK); Trichlorofluoromethane

| | Leachate Aqueous/Meoh | Soil/Sediment |
|---|---|---|
| LCS ACCURACY (%REC) | 70-130 | 70-130 |

# Column used to flag recovery values that did not meet criteria
* Values outside of QC limits
$ Values outside of NJ DKQP limits
NC Not calculable

8260

## SAMPLE MS RESULTS SUMMARY

Lab ID: E22-03482-009
Client ID: MW-5d/36.00
Date Received: NA
Date Analyzed: 06/17/2022
Sample Data file: K6623.D
Sample MS Data file: K6620.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1
Dilution Factor: 1

| Compound | Conc. Add | Sample | Conc. MS | %Rec. MS | # | Rec. Limits |
|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 50.0 | 0.00 | 47.90 | 96 | | 46-125 |
| Chloromethane | 50.0 | 0.00 | 48.40 | 97 | | 42-131 |
| Vinyl chloride | 50.0 | 0.00 | 53.60 | 107 | | 49-146 |
| Bromomethane | 50.0 | 0.00 | 45.20 | 90 | | 44-159 |
| Chloroethane | 50.0 | 0.00 | 48.40 | 97 | | 43-160 |
| Trichlorofluoromethane | 50.0 | 0.00 | 49.50 | 99 | | 47-153 |
| Acrolein | 150.0 | 0.00 | 141.00 | 94 | | 9-162 |
| 1,1-Dichloroethene | 50.0 | 0.00 | 48.30 | 97 | | 49-155 |
| Acetone | 100.0 | 0.00 | 75.30 | 75 | | 29-181 |
| Carbon disulfide | 50.0 | 0.00 | 48.10 | 96 | | 48-152 |
| Vinyl acetate | 50.0 | 0.00 | 44.60 | 89 | | 22-176 |
| Methylene chloride | 50.0 | 0.00 | 46.70 | 93 | | 38-160 |
| Acrylonitrile | 150.0 | 0.00 | 121.00 | 81 | | 45-177 |
| tert-Butyl alcohol (TBA) | 100.0 | 2.50 | 88.90 | 86 | | 33-164 |
| trans-1,2-Dichloroethene | 50.0 | 0.00 | 46.10 | 92 | | 45-154 |
| Methyl tert-butyl ether (MTBE | 50.0 | 3.00 | 47.50 | 89 | | 49-153 |
| 1,1-Dichloroethane | 50.0 | 0.00 | 45.90 | 92 | | 43-147 |
| Diisopropyl ether (DIPE) | 50.0 | 0.00 | 46.50 | 93 | | 52-138 |
| cis-1,2-Dichloroethene | 50.0 | 0.60 | 47.60 | 94 | | 49-143 |
| 2,2-Dichloropropane | 50.0 | 0.00 | 48.90 | 98 | | 42-140 |
| 2-Butanone (MEK) | 100.0 | 0.00 | 78.10 | 78 | | 42-141 |
| Bromochloromethane | 50.0 | 0.00 | 48.00 | 96 | | 45-153 |
| Chloroform | 50.0 | 0.00 | 46.50 | 93 | | 40-152 |
| 1,1,1-Trichloroethane | 50.0 | 0.00 | 49.20 | 98 | | 41-151 |
| Carbon tetrachloride | 50.0 | 0.00 | 48.40 | 97 | | 39-153 |
| 1,1-Dichloropropene | 50.0 | 0.00 | 48.60 | 97 | | 44-140 |
| 1,2-Dichloroethane (EDC) | 50.0 | 0.00 | 44.30 | 89 | | 49-140 |
| Benzene | 50.0 | 0.90 | 50.00 | 98 | | 47-145 |
| Trichloroethene | 50.0 | 0.00 | 52.80 | 106 | | 40-158 |
| 1,2-Dichloropropane | 50.0 | 0.00 | 47.30 | 95 | | 44-149 |
| Dibromomethane | 50.0 | 0.00 | 46.90 | 94 | | 48-147 |
| 1,4-Dioxane | 1500.0 | 0.00 | 1395.00 | 93 | | 36-155 |
| Bromodichloromethane | 50.0 | 0.00 | 48.40 | 97 | | 40-159 |
| 2-Chloroethyl vinyl ether | 100.0 | 0.00 | 94.60 | 95 | | 0-176 |
| cis-1,3-Dichloropropene | 50.0 | 0.00 | 46.10 | 92 | | 46-145 |
| 4-Methyl-2-pentanone (MIBK | 100.0 | 0.00 | 94.80 | 95 | | 49-148 |
| Toluene | 50.0 | 0.00 | 51.50 | 103 | | 47-148 |
| trans-1,3-Dichloropropene | 50.0 | 0.00 | 46.50 | 93 | | 43-147 |
| 1,1,2-Trichloroethane | 50.0 | 0.00 | 47.60 | 95 | | 47-147 |
| Tetrachloroethene | 50.0 | 0.00 | 55.30 | 111 | | 35-150 |
| 1,3-Dichloropropane | 50.0 | 0.00 | 49.80 | 100 | | 46-151 |

## SAMPLE MS RESULTS SUMMARY

Lab ID: E22-03482-009
Client ID: MW-5d/36.00
Date Received: NA
Date Analyzed: 06/17/2022
Sample Data file: K6623.D
Sample MS Data file: K6620.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1
Dilution Factor: 1

| Compound | Conc. Add | Sample | Conc. MS | %Rec. MS | # | Rec. Limits |
|---|---|---|---|---|---|---|
| 2-Hexanone | 100 | 0.00 | 94.40 | 94 | | 49-154 |
| Dibromochloromethane | 50 | 0.00 | 52.00 | 104 | | 39-164 |
| 1,2-Dibromoethane (EDB) | 50 | 0.00 | 51.20 | 102 | | 41-157 |
| Chlorobenzene | 50 | 0.00 | 49.00 | 98 | | 40-150 |
| 1,1,1,2-Tetrachloroethane | 50 | 0.00 | 49.60 | 99 | | 38-162 |
| Ethylbenzene | 50 | 0.00 | 52.60 | 105 | | 39-151 |
| m,p-Xylene | 100 | 0.00 | 108.20 | 108 | | 45-148 |
| o-Xylene | 50 | 0.00 | 53.90 | 108 | | 50-145 |
| Styrene | 50 | 0.00 | 52.80 | 106 | | 44-157 |
| Bromoform | 50 | 0.00 | 53.30 | 107 | | 44-149 |
| Isopropylbenzene | 50 | 0.00 | 55.20 | 110 | | 37-149 |
| 1,1,2,2-Tetrachloroethane | 50 | 0.00 | 44.60 | 89 | | 39-135 |
| Bromobenzene | 50 | 0.00 | 53.00 | 106 | | 47-146 |
| 1,2,3-Trichloropropane | 50 | 0.00 | 49.10 | 98 | | 38-147 |
| n-Propylbenzene | 50 | 0.00 | 54.50 | 109 | | 46-136 |
| 2-Chlorotoluene | 50 | 0.00 | 53.60 | 107 | | 41-143 |
| 1,3,5-Trimethylbenzene | 50 | 0.00 | 52.20 | 104 | | 43-145 |
| 4-Chlorotoluene | 50 | 0.00 | 53.40 | 107 | | 43-140 |
| tert-Butylbenzene | 50 | 0.00 | 54.10 | 108 | | 45-142 |
| 1,2,4-Trimethylbenzene | 50 | 0.00 | 51.30 | 103 | | 43-144 |
| sec-Butylbenzene | 50 | 0.00 | 53.30 | 107 | | 42-137 |
| 1,3-Dichlorobenzene | 50 | 0.00 | 51.90 | 104 | | 50-127 |
| 4-Isopropyltoluene | 50 | 0.00 | 52.90 | 106 | | 50-135 |
| 1,4-Dichlorobenzene | 50 | 0.00 | 53.30 | 107 | | 47-131 |
| n-Butylbenzene | 50 | 0.00 | 48.30 | 97 | | 50-128 |
| 1,2-Dichlorobenzene | 50 | 0.00 | 51.80 | 104 | | 49-134 |
| 1,2-Dibromo-3-chloropropane | 50 | 0.00 | 39.70 | 79 | | 44-134 |
| 1,2,4-Trichlorobenzene | 50 | 0.00 | 42.40 | 85 | | 33-144 |
| Hexachlorobutadiene | 50 | 0.00 | 42.60 | 85 | | 21-166 |
| Naphthalene | 50 | 0.00 | 40.20 | 80 | | 45-134 |
| 1,2,3-Trichlorobenzene | 50 | 0.00 | 38.20 | 76 | | 39-148 |
| 1,1,2-Trichloro-1,2,2-trifluoro | 50 | 0.00 | 38.00 | 76 | | 43-156 |
| Methyl acetate | 50 | 0.00 | 42.70 | 85 | | 36-157 |
| Cyclohexane | 50 | 0.00 | 53.00 | 106 | | 47-132 |
| Methylcyclohexane | 50 | 0.00 | 53.80 | 108 | | 48-131 |

| | Leachate Aqueous/Meoh | Soil/Sediment |
|---|---|---|
| MS Recovery Limits (DKQP) | 70-130 | 70-130 |

# Column used to flag recovery and RPD values that did not meet criteria
* Values outside of QC limits
$ Values outside of NJ DKQP limits
NC Not calculable

## SAMPLE MS RESULTS SUMMARY

Lab ID: E22-03482-009
Client ID: MW-5d/36.00
Date Received: NA
Date Analyzed: 06/17/2022
Sample Data file: K6623.D
Sample MS Data file: K6620.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1
Dilution Factor: 1

| Compound | Conc. Add | Sample | Conc. MS | %Rec. MS | # | Rec. Limits |
|---|---|---|---|---|---|---|

2-Chloroethyl vinyl ether has zero spike recovery in the MS. This is due to the HCL acid preservation used on the samples. It is a known phenomenon, that this compound decomposes in the presence of acid.

As per SW-846 8260C, up to 10% of the compounds may be out , but may be within 40-160%
As per NJDEP DKQPs, only the following compounds may be in the 40-160% range:
Acetone; Bromomethane; 2-Butanone (MEK); Carbon disulfide; Chloroethane; Chloromethane
1,2-Dibromo-3-chloropropane; Dichlorodifluoromethane; 1,4-Dioxane; 2-Hexanone
Naphthalene; 4-Methyl-2-pentanone (MIBK); Trichlorofluoromethane

| | Leachate Aqueous/Meoh | Soil/Sediment |
|---|---|---|
| MS Recovery Limits (DKQP) | 70-130 | 70-130 |

# Column used to flag recovery and RPD values that did not meet criteria
* Values outside of QC limits
$ Values outside of NJ DKQP limits
NC Not calculable

## SAMPLE DUPLICATE RESULTS SUMMARY

Lab ID: E22-03449-002
Client ID: RW-2-2
Date Received: 06/13/2022
Date Analyzed: 06/17/2022
Sample Data file: K6629.D
Sample Dup Data file: K6634.D

GC/MS Column: DB-624
Sample wt/vol: 0.025mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 200
Dilution Factor: 200

| Compound | Sample Conc. | Sample Dup Conc. | % RPD # |
|---|---|---|---|
| 2-Hexanone | 0.00 | 0.00 | NC |
| Dibromochloromethane | 0.00 | 0.00 | NC |
| 1,2-Dibromoethane (EDB) | 0.00 | 0.00 | NC |
| Chlorobenzene | 1.00 | 0.90 | 11 |
| 1,1,1,2-Tetrachloroethane | 0.00 | 0.00 | NC |
| Ethylbenzene | 0.00 | 0.00 | NC |
| m,p-Xylene | 0.00 | 0.00 | NC |
| o-Xylene | 0.00 | 0.00 | NC |
| Styrene | 0.00 | 0.00 | NC |
| Bromoform | 0.00 | 0.00 | NC |
| Isopropylbenzene | 0.00 | 0.00 | NC |
| 1,1,2,2-Tetrachloroethane | 0.00 | 0.00 | NC |
| Bromobenzene | 0.00 | 0.00 | NC |
| 1,2,3-Trichloropropane | 0.00 | 0.00 | NC |
| n-Propylbenzene | 0.00 | 0.00 | NC |
| 2-Chlorotoluene | 0.00 | 0.00 | NC |
| 1,3,5-Trimethylbenzene | 0.00 | 0.00 | NC |
| 4-Chlorotoluene | 0.00 | 0.00 | NC |
| tert-Butylbenzene | 0.00 | 0.00 | NC |
| 1,2,4-Trimethylbenzene | 0.00 | 0.00 | NC |
| sec-Butylbenzene | 0.00 | 0.00 | NC |
| 1,3-Dichlorobenzene | 1.80 | 1.60 | 12 |
| 4-Isopropyltoluene | 0.00 | 0.00 | NC |
| 1,4-Dichlorobenzene | 5.50 | 4.70 | 16 |
| n-Butylbenzene | 0.00 | 0.00 | NC |
| 1,2-Dichlorobenzene | 4.60 | 3.90 | 16 |
| 1,2-Dibromo-3-chloropropane | 0.00 | 0.00 | NC |
| 1,2,4-Trichlorobenzene | 1.20 | 1.10 | 9 |
| Hexachlorobutadiene | 0.00 | 0.00 | NC |
| Naphthalene | 0.00 | 0.00 | NC |
| 1,2,3-Trichlorobenzene | 0.80 | 0.70 | 13 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.00 | 0.00 | NC |
| Methyl acetate | 0.00 | 0.00 | NC |
| Cyclohexane | 0.00 | 0.00 | NC |
| Methylcyclohexane | 0.00 | 0.00 | NC |

| | |
|---|---|
| Sample/Sample Dup RPD Limits | 30 |

# Column used to flag recovery and RPD values that did not meet criteria
* Values outside of QC limits
NC Not calculable

## VOLATILE METHOD BLANK SUMMARY

Lab File ID: K6617.D Instrument ID: MSD_K

Date Analyzed: 06/17/2022 Time Analyzed: 02:47

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS & MSD:

| Client ID | Lab Sample ID | Date Analyzed | Time Analyzed |
|---|---|---|---|
| MW-7dR/14.42 | E22-03482-010 | 06/17/2022 | 3:16 |
| LCSA220616-02 | LCSA220616-02 | 06/17/2022 | 3:45 |
| E22-03482-009MS | E22-03482-009MS | 06/17/2022 | 4:14 |
| FB-2 | E22-03482-005 | 06/17/2022 | 5:11 |
| MW-5d/36.00 | E22-03482-009 | 06/17/2022 | 5:41 |
| MW-10d/36.00 | E22-03482-012 | 06/17/2022 | 6:09 |
| MW-13d1/67.0 | E22-03482-014 | 06/17/2022 | 6:38 |
| MW-12S/12.65 | E22-03482-013 | 06/17/2022 | 7:07 |
| DUPLICATE | E22-03482-015 | 06/17/2022 | 7:36 |
| RW-2-1 | E22-03449-001 | 06/17/2022 | 8:05 |
| RW-2-2 | E22-03449-002 | 06/17/2022 | 8:34 |
| TRIP_BLANK | E22-03403-004 | 06/17/2022 | 9:03 |
| FIELD_BLANK | E22-03403-003 | 06/17/2022 | 9:32 |
| MW11D | E22-03403-001 | 06/17/2022 | 10:00 |
| MW10D | E22-03403-002 | 06/17/2022 | 10:29 |
| RW-2-2 | E22-03449-002DUP | 06/17/2022 | 10:57 |
| MW-7S/10.93 | E22-03482-011 | 06/17/2022 | 11:26 |
| MW-3S/11.24 | E22-03482-008DL | 06/17/2022 | 11:55 |

FORM 4

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

Lab File ID: K6587.D

Inst ID: MSD_K

BFB Injection Date: 06/16/2022

BFB Injection Time: 12:07

| m/z | Ion Abudance Criteria | %Relative Abundance | |
|---|---|---|---|
| 95 | 50 - 200% of mass 174 | 100 | |
| 96 | 5.0 - 9.0% of mass 95 | 7.0 | |
| 173 | Less than 2.0% of mass 174 | 0.8 | ( 0.7 )1 |
| 174 | 50 - 200% of mass 95 | 88.5 | |
| 175 | 5.0 - 9.0% of mass 174 | 6.8 | ( 7.7 )1 |
| 176 | 95.0 - 105.0% of mass 174 | 89.4 | ( 101.0 )1 |
| 177 | 5.0 - 10.0% of mass 176 | 5.8 | ( 6.5 )2 |
| | 1-Value is % mass 174 | 2-Value is % mass 176 | |

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

| Client ID | Lab Sample ID | File ID | Date Analyzed | Time Analyzed |
|---|---|---|---|---|
| ICC100 | ICC220616 | K6592.D | 06/16/2022 | 14:40 |
| ICC00.5 | ICC220616 | K6588.D | 06/16/2022 | 12:43 |
| ICC001 | ICC220616 | K6589.D | 06/16/2022 | 13:12 |
| ICC005 | ICC220616 | K6590.D | 06/16/2022 | 13:41 |
| ICC020 | ICC220616 | K6591.D | 06/16/2022 | 14:10 |
| ICC150 | ICC220616 | K6593.D | 06/16/2022 | 15:13 |
| ICC200 | ICC220616 | K6594.D | 06/16/2022 | 15:42 |
| ICV100 | ICV220616 | K6596.D | 06/16/2022 | 16:40 |

FORM 5

## VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

Lab File ID: K6612.D
BFB Injection Date: 06/17/2022
Inst ID: MSD_K
BFB Injection Time: 0:23

| m/z | Ion Abudance Criteria | %Relative Abundance | |
|---|---|---|---|
| 95 | 50 - 200% of mass 174 | 100 | |
| 96 | 5.0 - 9.0% of mass 95 | 6.5 | |
| 173 | Less than 2.0% of mass 174 | 0.7 | ( 0.6 )1 |
| 174 | 50 - 200% of mass 95 | 86.1 | |
| 175 | 5.0 - 9.0% of mass 174 | 7.3 | ( 8.5 )1 |
| 176 | 95.0 - 105.0% of mass 174 | 83.9 | ( 97.5 )1 |
| 177 | 5.0 - 10.0% of mass 176 | 6.0 | ( 7.2 )2 |
| | 1-Value is % mass 174 | 2-Value is % mass 176 | |

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

| Client ID | Lab Sample ID | File ID | Date Analyzed | Time Analyzed |
|---|---|---|---|---|
| CCV100 | CCV220616-02 | K6613.D | 06/17/2022 | 0:52 |
| BLK220616-02 | BLK220616-02 | K6617.D | 06/17/2022 | 2:47 |
| MW-7dR/14.42 | E22-03482-010 | K6618.D | 06/17/2022 | 3:16 |
| LCSA220616-02 | LCSA220616-02 | K6619.D | 06/17/2022 | 3:45 |
| E22-03482-009MS | E22-03482-009M | K6620.D | 06/17/2022 | 4:14 |
| FB-2 | E22-03482-005 | K6622.D | 06/17/2022 | 5:11 |
| MW-5d/36.00 | E22-03482-009 | K6623.D | 06/17/2022 | 5:41 |
| MW-10d/36.00 | E22-03482-012 | K6624.D | 06/17/2022 | 6:09 |
| MW-13d1/67.0 | E22-03482-014 | K6625.D | 06/17/2022 | 6:38 |
| MW-12S/12.65 | E22-03482-013 | K6626.D | 06/17/2022 | 7:07 |
| DUPLICATE | E22-03482-015 | K6627.D | 06/17/2022 | 7:36 |
| RW-2-1 | E22-03449-001 | K6628.D | 06/17/2022 | 8:05 |
| RW-2-2 | E22-03449-002 | K6629.D | 06/17/2022 | 8:34 |
| TRIP_BLANK | E22-03403-004 | K6630.D | 06/17/2022 | 9:03 |
| FIELD_BLANK | E22-03403-003 | K6631.D | 06/17/2022 | 9:32 |
| MW11D | E22-03403-001 | K6632.D | 06/17/2022 | 10:00 |
| MW10D | E22-03403-002 | K6633.D | 06/17/2022 | 10:29 |
| RW-2-2 | E22-03449-002DU | K6634.D | 06/17/2022 | 10:57 |
| MW-7S/10.93 | E22-03482-011 | K6635.D | 06/17/2022 | 11:26 |
| MW-3S/11.24 | E22-03482-008DI | K6636.D | 06/17/2022 | 11:55 |

FORM 5

Response Factor Report K_MSD

Method Path : C:\MSDCHEM\1\METHODS\
Method File : K8220616.M
Title : VOLATILE ORGANICS BY EPA METHOD 8260D
Last Update : Fri Jun 17 09:16:54 2022
Response Via : Initial Calibration

Calibration Files
0.5 =K6588.D 1.0 =K6589.D 5.0 =K6590.D
20. =K6591.D 100 =K6592.D 150 =K6593.D 200 =K6594.D

| | | Compound | 0.5 | 1.0 | 5.0 | 20. | 100 | 150 | 200 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) | I | Pentafluorobenzene | ---------- | ISTD | ---------- | | | | | | |
| 2) | T | Dichlorodifluorom | | 0.534 | 0.335 | 0.361 | 0.449 | 0.449 | 0.436 | 0.427 | 16.64 |
| 3) | P | Chloromethane | 1.097 | 1.048 | 0.992 | 0.996 | 1.016 | 1.037 | 0.989 | 1.025 | 3.82 |
| 4) | C | Vinyl chloride | | 0.822 | 0.681 | 0.744 | 0.813 | 0.844 | 0.818 | 0.787 | 7.86 |
| 5) | T | Bromomethane | | 0.623 | 0.548 | 0.517 | 0.620 | 0.638 | 0.600 | 0.591 | 8.12 |
| 6) | T | Chloroethane | 0.547 | 0.521 | 0.449 | 0.494 | 0.625 | 0.625 | 0.600 | 0.552 | 12.38 |
| 7) | T | Trichlorofluorome | | 1.182 | 0.815 | 0.895 | 1.311 | 1.283 | 1.304 | 1.132 | 19.52 |
| 8) | T | Acrolein | 0.192 | 0.210 | 0.201 | 0.175 | 0.207 | 0.212 | 0.194 | 0.199 | 6.54 |
| 9) | MC | 1,1-Dichloroethen | 0.713 | 0.784 | 0.512 | 0.560 | 0.698 | 0.703 | 0.700 | 0.667 | 14.30 |
| 10) | T | Acetone | | 1.180 | 1.184 | 1.091 | 1.245 | 1.299 | 1.201 | 1.200 | 5.81 |
| 11) | T | Carbon disulfide | | 2.511 | 1.917 | 1.980 | 2.356 | 2.374 | 2.366 | 2.251 | 10.73 |
| 12) | T | Vinyl acetate | | 0.471 | 0.471 | 0.476 | 0.523 | 0.510 | 0.503 | 0.492 | 4.61 |
| 13) | T | Methylene chlorid | | 0.677 | 0.538 | 0.621 | 0.646 | 0.629 | 0.620 | 0.622 | 7.45 |
| 14) | T | Acrylonitrile | 0.411 | 0.454 | 0.470 | 0.441 | 0.477 | 0.463 | 0.444 | 0.451 | 4.87 |
| 15) | T | tert-Butyl alcoho | | 0.202 | 0.193 | 0.199 | 0.191 | 0.213 | 0.193 | 0.198 | 4.07 |
| 16) | T | trans-1,2-Dichlor | 0.579 | 0.722 | 0.590 | 0.620 | 0.665 | 0.652 | 0.646 | 0.639 | 7.58 |
| 17) | T | Methyl tert-butyl | 1.662 | 1.797 | 1.949 | 1.959 | 2.146 | 2.133 | 2.111 | 1.965 | 9.34 |
| 18) | P | 1,1-Dichloroethan | 1.073 | 1.181 | 1.191 | 1.208 | 1.310 | 1.265 | 1.250 | 1.211 | 6.26 |
| 19) | T | Diisopropyl ether | 1.866 | 2.130 | 2.432 | 2.586 | 2.951 | 2.886 | 2.838 | 2.527 | 16.26 |
| 20) | T | cis-1,2-Dichloroe | 0.545 | 0.755 | 0.672 | 0.672 | 0.742 | 0.734 | 0.729 | 0.693 | 10.52 |
| 21) | T | 2,2-Dichloropropa | | 0.644 | 0.556 | 0.565 | 0.573 | 0.601 | 0.602 | 0.590 | 5.49 |
| 22) | T | 2-Butanone (MEK) | | 0.957 | 0.965 | 0.968 | 1.082 | 1.100 | 1.036 | 1.018 | 6.24 |
| 23) | T | Bromochloromethan | | 0.363 | 0.372 | 0.374 | 0.393 | 0.384 | 0.377 | 0.377 | 2.67 |
| 25) | C | Chloroform | 1.021 | 1.161 | 1.114 | 1.100 | 1.193 | 1.154 | 1.124 | 1.124 | 4.90 |
| 26) | T | 1,1,1-Trichloroet | 0.669 | 0.900 | 0.797 | 0.881 | 0.998 | 0.928 | 0.951 | 0.875 | 12.62 |
| 27) | T | Carbon tetrachlor | 0.673 | 0.916 | 0.703 | 0.783 | 0.948 | 0.894 | 0.907 | 0.832 | 13.37 |
| 28) | T | 1,1-Dichloroprope | 0.722 | 0.836 | 0.662 | 0.755 | 0.886 | 0.852 | 0.860 | 0.796 | 10.50 |
| 29) | T | 1,2-Dichloroethan | 0.981 | 1.164 | 1.053 | 1.042 | 1.111 | 1.077 | 1.058 | 1.069 | 5.34 |
| 30) | S | 1,2-Dichloroethan | 0.678 | 0.716 | 0.702 | 0.694 | 0.666 | 0.645 | 0.623 | 0.675 | 4.84 |
| 31) | I | 1,4-Difluorobenzene | ---------- | ISTD | ---------- | | | | | | |
| 32) | M | Benzene | 1.349 | 1.563 | 1.534 | 1.543 | 1.729 | 1.692 | 1.681 | 1.585 | 8.23 |
| 33) | M | Trichloroethene | 0.358 | 0.412 | 0.359 | 0.373 | 0.433 | 0.420 | 0.420 | 0.396 | 8.04 |
| 34) | C | 1,2-Dichloropropa | 0.453 | 0.439 | 0.465 | 0.460 | 0.508 | 0.493 | 0.489 | 0.472 | 5.25 |
| 35) | T | Dibromomethane | 0.307 | 0.318 | 0.306 | 0.290 | 0.319 | 0.310 | 0.306 | 0.308 | 3.09 |
| 36) | T | 1,4-Dioxane | 0.009 | 0.009 | 0.009 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 5.54 |
| 37) | T | Bromodichlorometh | 0.520 | 0.559 | 0.535 | 0.532 | 0.609 | 0.592 | 0.585 | 0.562 | 6.10 |
| 38) | T | 2-Chloroethyl vin | 0.227 | 0.219 | 0.232 | 0.230 | 0.254 | 0.246 | 0.244 | 0.236 | 5.25 |
| 39) | T | cis-1,3-Dichlorop | | 0.568 | 0.577 | 0.636 | 0.749 | 0.743 | 0.735 | 0.668 | 12.68 |
| 40) | T | 4-Methyl-2-pentan | 0.761 | 0.696 | 0.879 | 0.946 | 1.083 | 1.083 | 1.036 | 0.926 | 16.74 |
| 41) | S | Toluene-d8 | 1.260 | 1.287 | 1.313 | 1.323 | 1.349 | 1.319 | 1.300 | 1.307 | 2.17 |
| 42) | MC | Toluene | 0.764 | 0.992 | 0.906 | 0.940 | 1.124 | 1.099 | 1.094 | 0.988 | 13.14 |
| 43) | T | trans-1,3-Dichlor | | 0.498 | 0.574 | 0.616 | 0.749 | 0.745 | 0.744 | 0.654 | 16.38 |
| 44) | T | 1,1,2-Trichloroet | 0.326 | 0.354 | 0.359 | 0.350 | 0.385 | 0.370 | 0.365 | 0.358 | 5.09 |
| 45) | T | Tetrachloroethene | 0.361 | 0.484 | 0.367 | 0.397 | 0.484 | 0.467 | 0.474 | 0.433 | 12.91 |
| 46) | T | 1,3-Dichloropropa | 0.550 | 0.634 | 0.654 | 0.697 | 0.784 | 0.758 | 0.753 | 0.690 | 12.05 |
| 47) | T | 2-Hexanone | 0.610 | 0.602 | 0.729 | 0.804 | 0.874 | 0.897 | 0.848 | 0.766 | 15.97 |
| 48) | T | Dibromochlorometh | 0.379 | 0.408 | 0.440 | 0.464 | 0.549 | 0.536 | 0.525 | 0.472 | 14.11 |
| 49) | T | 1,2-Dibromoethane | 0.411 | 0.443 | 0.427 | 0.457 | 0.517 | 0.507 | 0.496 | 0.465 | 8.92 |
| 50) | I | Chlorobenzene-d5 | ---------- | ISTD | ---------- | | | | | | |
| 51) | MP | Chlorobenzene | 1.014 | 1.233 | 1.046 | 1.054 | 1.179 | 1.159 | 1.161 | 1.121 | 7.34 |
| 52) | T | 1,1,1,2-Tetrachlo | 0.446 | 0.404 | 0.414 | 0.407 | 0.448 | 0.441 | 0.439 | 0.428 | 4.48 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 53) | C | Ethylbenzene | 1.340 | 1.655 | 1.510 | 1.692 | 1.924 | 1.883 | 1.885 | 1.698 | 12.86 |
| 54) | T | m,p-Xylene | 0.511 | 0.598 | 0.621 | 0.688 | 0.805 | 0.801 | 0.821 | 0.692 | 17.51 |
| 55) | T | o-Xylene | 0.488 | 0.615 | 0.606 | 0.669 | 0.800 | 0.806 | 0.820 | 0.686 | 18.44 |
| 56) | T | Styrene | | 0.872 | 0.965 | 1.125 | 1.358 | 1.368 | 1.392 | 1.180 | 19.19 |
| 57) | P | Bromoform | 0.333 | 0.296 | 0.313 | 0.342 | 0.406 | 0.414 | 0.413 | 0.360 | 13.98 |
| 58) | T | Isopropylbenzene | | 1.424 | 1.315 | 1.602 | 1.989 | 1.963 | 1.993 | 1.714 | 17.91 |
| 59) | S | Bromofluorobenzen | 0.444 | 0.456 | 0.462 | 0.481 | 0.484 | 0.470 | 0.473 | 0.467 | 3.01 |
| 60) | P | 1,1,2,2-Tetrachlo | | 0.667 | 0.640 | 0.671 | 0.708 | 0.711 | 0.708 | 0.684 | 4.29 |
| 61) | T | Bromobenzene | 0.438 | 0.493 | 0.475 | 0.480 | 0.525 | 0.524 | 0.527 | 0.495 | 6.70 |
| 62) | T | 1,2,3-Trichloropr | 0.470 | 0.586 | 0.599 | 0.602 | 0.629 | 0.620 | 0.606 | 0.587 | 9.12 |
| 63) | T | n-Propylbenzene | 1.403 | 1.909 | 1.679 | 1.965 | 2.239 | 2.193 | 2.236 | 1.946 | 16.23 |
| 64) | T | 2-Chlorotoluene | 0.833 | 1.140 | 1.133 | 1.202 | 1.331 | 1.316 | 1.315 | 1.181 | 14.81 |
| 65) | T | 1,3,5-Trimethylbe | | 1.192 | 1.244 | 1.482 | 1.703 | 1.719 | 1.776 | 1.519 | 16.74 |
| 66) | T | 4-Chlorotoluene | 1.049 | 1.329 | 1.342 | 1.488 | 1.650 | 1.664 | 1.686 | 1.458 | 16.09 |
| 67) | T | tert-Butylbenzene | | 1.000 | 0.876 | 1.142 | 1.373 | 1.397 | 1.439 | 1.204 | 19.42 |
| 68) | T | 1,2,4-Trimethylbe | | 1.270 | 1.306 | 1.530 | 1.699 | 1.709 | 1.728 | 1.540 | 13.52 |
| 69) | T | sec-Butylbenzene | | 1.562 | 1.322 | 1.700 | 2.051 | 2.053 | 2.122 | 1.802 | 18.01 |
| 70) | T | 1,3-Dichlorobenze | 0.788 | 0.948 | 0.888 | 0.933 | 1.006 | 1.008 | 1.013 | 0.940 | 8.70 |
| 71) | T | 4-Isopropyltoluen | | 1.301 | 1.206 | 1.536 | 1.806 | 1.808 | 1.864 | 1.587 | 17.89 |
| 72) | T | 1,4-Dichlorobenze | 0.696 | 0.912 | 0.928 | 0.976 | 1.035 | 1.026 | 1.038 | 0.945 | 12.80 |
| 73) | T | n-Butylbenzene | | | 1.000 | 1.271 | 1.539 | 1.582 | 1.627 | 1.404 | 18.86 |
| 74) | T | 1,2-Dichlorobenze | 0.726 | 0.861 | 0.903 | 0.952 | 1.000 | 1.017 | 1.032 | 0.927 | 11.68 |
| 75) | T | 1,2-Dibromo-3-chl | | 0.168 | 0.134 | 0.138 | 0.154 | 0.164 | 0.160 | 0.153 | 9.22 |
| 76) | T | 1,2,4-Trichlorobe | | 0.562 | 0.512 | 0.527 | 0.599 | 0.645 | 0.683 | 0.588 | 11.44 |
| 77) | T | Hexachlorobutadie | | | 0.187 | 0.192 | 0.225 | 0.233 | 0.248 | 0.217 | 12.23 |
| 78) | T | Naphthalene | | 1.309 | 1.372 | 1.557 | 1.799 | 1.923 | 1.974 | 1.656 | 17.17 |
| 79) | T | 1,2,3-Trichlorobe | | 0.546 | 0.528 | 0.485 | 0.508 | 0.545 | 0.591 | 0.534 | 6.87 |
| 80) | T | 1,1,2-Trichloro-1 | | 0.418 | 0.261 | 0.323 | 0.424 | 0.411 | 0.435 | 0.379 | 18.63 |
| 81) | T | Methyl acetate | 0.805 | 0.689 | 0.732 | 0.699 | 0.765 | 0.817 | 0.825 | 0.762 | 7.40 |
| 82) | T | Cyclohexane | | 0.602 | 0.474 | 0.563 | 0.720 | 0.678 | 0.715 | 0.626 | 15.56 |
| 83) | T | Methylcyclohexane | | 0.496 | 0.355 | 0.404 | 0.573 | 0.555 | 0.588 | 0.495 | 19.41 |

(#) = Out of Range ### Number of calibration levels exceeded format ###

K8220616.M Fri Jun 17 09:32:46 2022

Evaluate Continuing Calibration Report

Data Path : C:\MSDCHEM\1\DATA\22-06-16\
Data File : K6596.D
Acq On : 16 Jun 2022 16:40
Operator : BARBARA
Sample : ICV100,ICV220616,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 17 09:17:04 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Pentafluorobenzene | 1.000 | 1.000 | 0.0 | 130 | 0.00 |
| 2 | T | Dichlorodifluoromethane | 0.427 | 0.394 | 7.7 | 114 | -0.02 |
| 3 | P | Chloromethane | 1.025 | 0.958 | 6.5 | 122 | 0.00 |
| 4 | C | Vinyl chloride | 0.787 | 0.791 | -0.5 | 126 | -0.01 |
| 5 | T | Bromomethane | 0.591 | 0.580 | 1.9 | 121 | 0.01 |
| 6 | T | Chloroethane | 0.552 | 0.567 | -2.7 | 118 | 0.00 |
| 7 | T | Trichlorofluoromethane | 1.132 | 1.102 | 2.7 | 109 | -0.01 |
| 8 | T | Acrolein | 0.199 | 0.163 | 18.1 | 102 | 0.00 |
| 9 | MC | 1,1-Dichloroethene | 0.667 | 0.629 | 5.7 | 117 | 0.01 |
| 10 | T | Acetone | 1.200 | 1.083 | 9.8 | 113 | 0.00 |
| 11 | T | Carbon disulfide | 2.251 | 2.159 | 4.1 | 119 | 0.00 |
| 12 | T | Vinyl acetate | 0.492 | 0.471 | 4.3 | 117 | 0.00 |
| 13 | T | Methylene chloride | 0.622 | 0.591 | 5.0 | 119 | 0.00 |
| 14 | T | Acrylonitrile | 0.451 | 0.399 | 11.5 | 108 | 0.00 |
| 15 | T | tert-Butyl alcohol (TBA) | 0.198 | 0.206 | -4.0 | 140 | 0.02 |
| 16 | T | trans-1,2-Dichloroethene | 0.639 | 0.618 | 3.3 | 120 | 0.00 |
| 17 | T | Methyl tert-butyl ether (MT | 1.965 | 1.989 | -1.2 | 120 | 0.00 |
| 18 | P | 1,1-Dichloroethane | 1.211 | 1.187 | 2.0 | 117 | 0.00 |
| 19 | T | Diisopropyl ether (DIPE) | 2.527 | 2.641 | -4.5 | 116 | 0.00 |
| 20 | T | cis-1,2-Dichloroethene | 0.693 | 0.696 | -0.4 | 122 | 0.00 |
| 21 | T | 2,2-Dichloropropane | 0.590 | 0.590 | 0.0 | 133 | 0.00 |
| 22 | T | 2-Butanone (MEK) | 1.018 | 0.951 | 6.6 | 114 | 0.00 |
| 23 | T | Bromochloromethane | 0.377 | 0.367 | 2.7 | 121 | 0.00 |
| 25 | C | Chloroform | 1.124 | 1.082 | 3.7 | 118 | 0.00 |
| 26 | T | 1,1,1-Trichloroethane | 0.875 | 0.908 | -3.8 | 118 | 0.00 |
| 27 | T | Carbon tetrachloride | 0.832 | 0.846 | -1.7 | 116 | 0.00 |
| 28 | T | 1,1-Dichloropropene | 0.796 | 0.795 | 0.1 | 116 | 0.00 |
| 29 | T | 1,2-Dichloroethane (EDC) | 1.069 | 0.997 | 6.7 | 116 | 0.00 |
| 30 | S | 1,2-Dichloroethane-d4 | 0.675 | 0.626 | 7.3 | 122 | 0.00 |
| 31 | I | 1,4-Difluorobenzene | 1.000 | 1.000 | 0.0 | 126 | 0.00 |
| 32 | M | Benzene | 1.585 | 1.621 | -2.3 | 118 | 0.00 |
| 33 | M | Trichloroethene | 0.396 | 0.401 | -1.3 | 117 | 0.00 |
| 34 | C | 1,2-Dichloropropane | 0.472 | 0.469 | 0.6 | 117 | 0.00 |
| 35 | T | Dibromomethane | 0.308 | 0.293 | 4.9 | 116 | 0.00 |
| 36 | T | 1,4-Dioxane | 0.010 | 0.009 | 10.0 | 124 | 0.00 |
| 37 | T | Bromodichloromethane | 0.562 | 0.565 | -0.5 | 117 | 0.00 |
| 38 | T | 2-Chloroethyl vinyl ether | 0.236 | 0.235 | 0.4 | 117 | 0.00 |
| 39 | T | cis-1,3-Dichloropropene | 0.668 | 0.706 | -5.7 | 119 | 0.00 |
| 40 | T | 4-Methyl-2-pentanone (MIBK) | 0.926 | 0.975 | -5.3 | 114 | 0.00 |
| 41 | S | Toluene-d8 | 1.307 | 1.288 | 1.5 | 121 | 0.00 |
| 42 | MC | Toluene | 0.988 | 1.038 | -5.1 | 117 | 0.00 |
| 43 | T | trans-1,3-Dichloropropene | 0.654 | 0.698 | -6.7 | 118 | 0.00 |
| 44 | T | 1,1,2-Trichloroethane | 0.358 | 0.351 | 2.0 | 115 | 0.00 |
| 45 | T | Tetrachloroethene | 0.433 | 0.455 | -5.1 | 119 | 0.00 |
| 46 | T | 1,3-Dichloropropane | 0.690 | 0.707 | -2.5 | 114 | 0.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 47 | T | 2-Hexanone | 0.766 | 0.813 | -6.1 | 117 | 0.00 |
| 48 | T | Dibromochloromethane | 0.472 | 0.506 | -7.2 | 116 | 0.00 |
| 49 | T | 1,2-Dibromoethane (EDB) | 0.465 | 0.481 | -3.4 | 118 | 0.00 |
| 50 | I | Chlorobenzene-d5 | 1.000 | 1.000 | 0.0 | 122 | 0.00 |
| 51 | MP | Chlorobenzene | 1.121 | 1.130 | -0.8 | 117 | 0.00 |
| 52 | T | 1,1,1,2-Tetrachloroethane | 0.428 | 0.430 | -0.5 | 117 | 0.00 |
| 53 | C | Ethylbenzene | 1.698 | 1.808 | -6.5 | 115 | 0.00 |
| 54 | T | m,p-Xylene | 0.692 | 0.759 | -9.7 | 115 | 0.00 |
| 55 | T | o-Xylene | 0.686 | 0.764 | -11.4 | 116 | 0.00 |
| 56 | T | Styrene | 1.180 | 1.287 | -9.1 | 115 | 0.00 |
| 57 | P | Bromoform | 0.360 | 0.393 | -9.2 | 118 | 0.00 |
| 58 | T | Isopropylbenzene | 1.714 | 1.859 | -8.5 | 114 | 0.00 |
| 59 | S | Bromofluorobenzene | 0.467 | 0.471 | -0.9 | 119 | 0.00 |
| 60 | P | 1,1,2,2-Tetrachloroethane | 0.684 | 0.665 | 2.8 | 114 | 0.00 |
| 61 | T | Bromobenzene | 0.495 | 0.511 | -3.2 | 119 | 0.00 |
| 62 | T | 1,2,3-Trichloropropane | 0.587 | 0.589 | -0.3 | 114 | 0.00 |
| 63 | T | n-Propylbenzene | 1.946 | 2.090 | -7.4 | 114 | 0.00 |
| 64 | T | 2-Chlorotoluene | 1.181 | 1.256 | -6.4 | 115 | 0.00 |
| 65 | T | 1,3,5-Trimethylbenzene | 1.519 | 1.579 | -3.9 | 113 | 0.00 |
| 66 | T | 4-Chlorotoluene | 1.458 | 1.548 | -6.2 | 114 | 0.00 |
| 67 | T | tert-Butylbenzene | 1.204 | 1.301 | -8.1 | 115 | 0.00 |
| 68 | T | 1,2,4-Trimethylbenzene | 1.540 | 1.615 | -4.9 | 116 | 0.00 |
| 69 | T | sec-Butylbenzene | 1.802 | 1.918 | -6.4 | 114 | 0.00 |
| 70 | T | 1,3-Dichlorobenzene | 0.940 | 0.963 | -2.4 | 117 | 0.00 |
| 71 | T | 4-Isopropyltoluene | 1.587 | 1.693 | -6.7 | 114 | 0.00 |
| 72 | T | 1,4-Dichlorobenzene | 0.945 | 0.989 | -4.7 | 116 | 0.00 |
| 73 | T | n-Butylbenzene | 1.404 | 1.446 | -3.0 | 115 | 0.00 |
| 74 | T | 1,2-Dichlorobenzene | 0.927 | 0.956 | -3.1 | 117 | 0.00 |
| 75 | T | 1,2-Dibromo-3-chloropropane | 0.153 | 0.144 | 5.9 | 114 | 0.00 |
| 76 | T | 1,2,4-Trichlorobenzene | 0.588 | 0.594 | -1.0 | 121 | 0.00 |
| 77 | T | Hexachlorobutadiene | 0.217 | 0.220 | -1.4 | 119 | 0.00 |
| 78 | T | Naphthalene | 1.656 | 1.664 | -0.5 | 113 | 0.00 |
| 79 | T | 1,2,3-Trichlorobenzene | 0.534 | 0.495 | 7.3 | 119 | 0.00 |
| 80 | T | 1,1,2-Trichloro-1,2,2-trifl | 0.379 | 0.385 | -1.6 | 111 | 0.00 |
| 81 | T | Methyl acetate | 0.762 | 0.718 | 5.8 | 114 | 0.00 |
| 82 | T | Cyclohexane | 0.626 | 0.671 | -7.2 | 113 | -0.01 |
| 83 | T | Methylcyclohexane | 0.495 | 0.544 | -9.9 | 116 | 0.00 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0

K8220616.M Fri Jun 17 09:33:18 2022

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6613.D
Acq On : 17 Jun 2022 00:52
Operator : BARBARA
Sample : CCV100,CCV220616-02,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 17 09:25:06 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Pentafluorobenzene | 1.000 | 1.000 | 0.0 | 137 | 0.00 |
| 2 | T | Dichlorodifluoromethane | 0.427 | 0.400 | 6.3 | 122 | -0.01 |
| 3 | P | Chloromethane | 1.025 | 0.893 | 12.9 | 121 | 0.00 |
| 4 | C | Vinyl chloride | 0.787 | 0.808 | -2.7 | 136 | 0.00 |
| 5 | T | Bromomethane | 0.591 | 0.589 | 0.3 | 130 | 0.00 |
| 6 | T | Chloroethane | 0.552 | 0.584 | -5.8 | 128 | 0.00 |
| 7 | T | Trichlorofluoromethane | 1.132 | 1.180 | -4.2 | 124 | -0.01 |
| 9 | MC | 1,1-Dichloroethene | 0.667 | 0.676 | -1.3 | 133 | 0.01 |
| 10 | T | Acetone | 1.200 | 1.044 | 13.0 | 115 | 0.00 |
| 11 | T | Carbon disulfide | 2.251 | 2.256 | -0.2 | 132 | 0.00 |
| 12 | T | Vinyl acetate | 0.492 | 0.444 | 9.8 | 117 | 0.00 |
| 13 | T | Methylene chloride | 0.622 | 0.575 | 7.6 | 122 | 0.00 |
| 14 | T | Acrylonitrile | 0.451 | 0.366 | 18.8 | 105 | 0.00 |
| 15 | T | tert-Butyl alcohol (TBA) | 0.198 | 0.186 | 6.1 | 134 | 0.02 |
| 16 | T | trans-1,2-Dichloroethene | 0.639 | 0.601 | 5.9 | 124 | 0.00 |
| 17 | T | Methyl tert-butyl ether (MT | 1.965 | 1.884 | 4.1 | 121 | 0.00 |
| 18 | P | 1,1-Dichloroethane | 1.211 | 1.113 | 8.1 | 117 | 0.00 |
| 19 | T | Diisopropyl ether (DIPE) | 2.527 | 2.372 | 6.1 | 110 | 0.00 |
| 20 | T | cis-1,2-Dichloroethene | 0.693 | 0.675 | 2.6 | 125 | 0.00 |
| 22 | T | 2-Butanone (MEK) | 1.018 | 0.850 | 16.5 | 108 | 0.00 |
| 23 | T | Bromochloromethane | 0.377 | 0.365 | 3.2 | 128 | 0.00 |
| 25 | C | Chloroform | 1.124 | 1.028 | 8.5 | 118 | 0.00 |
| 26 | T | 1,1,1-Trichloroethane | 0.875 | 0.870 | 0.6 | 120 | 0.00 |
| 27 | T | Carbon tetrachloride | 0.832 | 0.828 | 0.5 | 120 | 0.00 |
| 28 | T | 1,1-Dichloropropene | 0.796 | 0.770 | 3.3 | 119 | 0.00 |
| 29 | T | 1,2-Dichloroethane (EDC) | 1.069 | 0.932 | 12.8 | 115 | 0.00 |
| 30 | S | 1,2-Dichloroethane-d4 | 0.675 | 0.579 | 14.2 | 119 | 0.00 |
| 31 | I | 1,4-Difluorobenzene | 1.000 | 1.000 | 0.0 | 129 | 0.00 |
| 32 | M | Benzene | 1.585 | 1.592 | -0.4 | 119 | 0.00 |
| 33 | M | Trichloroethene | 0.396 | 0.419 | -5.8 | 125 | 0.00 |
| 34 | C | 1,2-Dichloropropane | 0.472 | 0.442 | 6.4 | 112 | 0.00 |
| 35 | T | Dibromomethane | 0.308 | 0.293 | 4.9 | 119 | 0.00 |
| 36 | T | 1,4-Dioxane | 0.010 | 0.009 | 10.0 | 122 | 0.00 |
| 37 | T | Bromodichloromethane | 0.562 | 0.559 | 0.5 | 118 | 0.00 |
| 38 | T | 2-Chloroethyl vinyl ether | 0.236 | 0.221 | 6.4 | 112 | 0.00 |
| 39 | T | cis-1,3-Dichloropropene | 0.668 | 0.649 | 2.8 | 112 | 0.00 |
| 40 | T | 4-Methyl-2-pentanone (MIBK) | 0.926 | 0.880 | 5.0 | 105 | 0.00 |
| 41 | S | Toluene-d8 | 1.307 | 1.285 | 1.7 | 123 | 0.00 |
| 42 | MC | Toluene | 0.988 | 1.067 | -8.0 | 122 | 0.00 |
| 43 | T | trans-1,3-Dichloropropene | 0.654 | 0.642 | 1.8 | 111 | 0.00 |
| 44 | T | 1,1,2-Trichloroethane | 0.358 | 0.347 | 3.1 | 116 | 0.00 |
| 45 | T | Tetrachloroethene | 0.433 | 0.493 | -13.9 | 131 | 0.00 |
| 46 | T | 1,3-Dichloropropane | 0.690 | 0.692 | -0.3 | 114 | 0.00 |
| 47 | T | 2-Hexanone | 0.766 | 0.720 | 6.0 | 106 | 0.00 |
| 48 | T | Dibromochloromethane | 0.472 | 0.508 | -7.6 | 119 | 0.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 49 | T | 1,2-Dibromoethane (EDB) | 0.465 | 0.489 | -5.2 | 122 | 0.00 |
| 50 | I | Chlorobenzene-d5 | 1.000 | 1.000 | 0.0 | 127 | 0.00 |
| 51 | MP | Chlorobenzene | 1.121 | 1.134 | -1.2 | 122 | 0.00 |
| 52 | T | 1,1,1,2-Tetrachloroethane | 0.428 | 0.431 | -0.7 | 122 | 0.00 |
| 53 | C | Ethylbenzene | 1.698 | 1.791 | -5.5 | 118 | 0.00 |
| 54 | T | m,p-Xylene | 0.692 | 0.777 | -12.3 | 123 | 0.00 |
| 55 | T | o-Xylene | 0.686 | 0.780 | -13.7 | 124 | 0.00 |
| 56 | T | Styrene | 1.180 | 1.329 | -12.6 | 124 | 0.00 |
| 57 | P | Bromoform | 0.360 | 0.398 | -10.6 | 125 | 0.00 |
| 58 | T | Isopropylbenzene | 1.714 | 1.942 | -13.3 | 124 | 0.00 |
| 59 | S | Bromofluorobenzene | 0.467 | 0.468 | -0.2 | 123 | 0.00 |
| 60 | P | 1,1,2,2-Tetrachloroethane | 0.684 | 0.630 | 7.9 | 113 | 0.00 |
| 61 | T | Bromobenzene | 0.495 | 0.530 | -7.1 | 128 | 0.00 |
| 62 | T | 1,2,3-Trichloropropane | 0.587 | 0.568 | 3.2 | 115 | 0.00 |
| 63 | T | n-Propylbenzene | 1.946 | 2.135 | -9.7 | 121 | 0.00 |
| 64 | T | 2-Chlorotoluene | 1.181 | 1.276 | -8.0 | 122 | 0.00 |
| 65 | T | 1,3,5-Trimethylbenzene | 1.519 | 1.641 | -8.0 | 123 | 0.00 |
| 66 | T | 4-Chlorotoluene | 1.458 | 1.597 | -9.5 | 123 | 0.00 |
| 67 | T | tert-Butylbenzene | 1.204 | 1.368 | -13.6 | 127 | 0.00 |
| 68 | T | 1,2,4-Trimethylbenzene | 1.540 | 1.664 | -8.1 | 125 | 0.00 |
| 69 | T | sec-Butylbenzene | 1.802 | 2.013 | -11.7 | 125 | 0.00 |
| 70 | T | 1,3-Dichlorobenzene | 0.940 | 1.008 | -7.2 | 127 | 0.00 |
| 71 | T | 4-Isopropyltoluene | 1.587 | 1.780 | -12.2 | 125 | 0.00 |
| 72 | T | 1,4-Dichlorobenzene | 0.945 | 1.035 | -9.5 | 127 | 0.00 |
| 73 | T | n-Butylbenzene | 1.404 | 1.474 | -5.0 | 122 | 0.00 |
| 74 | T | 1,2-Dichlorobenzene | 0.927 | 1.011 | -9.1 | 129 | 0.00 |
| 75 | T | 1,2-Dibromo-3-chloropropane | 0.153 | 0.137 | 10.5 | 113 | 0.00 |
| 76 | T | 1,2,4-Trichlorobenzene | 0.588 | 0.617 | -4.9 | 131 | 0.00 |
| 77 | T | Hexachlorobutadiene | 0.217 | 0.234 | -7.8 | 132 | 0.00 |
| 78 | T | Naphthalene | 1.656 | 1.708 | -3.1 | 121 | 0.00 |
| 79 | T | 1,2,3-Trichlorobenzene | 0.534 | 0.522 | 2.2 | 131 | 0.00 |
| 80 | T | 1,1,2-Trichloro-1,2,2-trifl | 0.379 | 0.411 | -8.4 | 123 | 0.01 |
| 81 | T | Methyl acetate | 0.762 | 0.662 | 13.1 | 110 | 0.00 |
| 82 | T | Cyclohexane | 0.626 | 0.656 | -4.8 | 116 | -0.01 |
| 83 | T | Methylcyclohexane | 0.495 | 0.549 | -10.9 | 122 | 0.00 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0

K8220616.M Fri Jun 17 12:43:21 2022

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): K6592.D

Date Analyzed: 06/16/2022

Instrument ID: MSD_K

Time Analyzed: 14:40

| | 50UG/L | IS1 AREA # | RT # | IS2 AREA # | RT # | IS3 AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 316572 | 6.00 | 503165 | 6.83 | 556283 | 10.17 |
| | UPPER LIMIT | 633144 | 6.50 | 1006330 | 7.33 | 1112566 | 10.67 |
| | LOWER LIMIT | 158286 | 5.50 | 251582.5 | 6.33 | 278141.5 | 9.67 |
| | LAB SAMPLE ID | | | | | | |
| 01 | ICC220616 | 256625 | 6.01 | 410826 | 6.83 | 427696 | 10.17 |
| 02 | ICC220616 | 253514 | 6.01 | 413477 | 6.83 | 440030 | 10.18 |
| 03 | ICC220616 | 263417 | 6.01 | 428109 | 6.83 | 459060 | 10.18 |
| 04 | ICC220616 | 283535 | 6.00 | 456587 | 6.83 | 493545 | 10.18 |
| 05 | ICC220616 | 366596 | 6.00 | 576537 | 6.83 | 626029 | 10.18 |
| 06 | ICC220616 | 408300 | 6.00 | 636604 | 6.83 | 678915 | 10.18 |
| 07 | ICV220616 | 410519 | 6.00 | 635229 | 6.83 | 678059 | 10.18 |
| 08 | | | | | | | |
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| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = PENTAFLUOROBENZENE
IS2 = 1,4-DIFLUOROBENZENE
IS3 = CHLOROBENZENE-D5

AREA UPPER LIMIT = +200% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

FORM 8

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): K6613.D

Date Analyzed: 06/17/2022

Instrument ID: MSD_K

Time Analyzed: 0:52

| | 50UG/L | IS1 AREA # | RT # | IS2 AREA # | RT # | IS3 AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 435035 | 6.00 | 648554 | 6.83 | 707405 | 10.18 |
| | UPPER LIMIT | 870070 | 6.50 | 1297108 | 7.33 | 1414810 | 10.68 |
| | LOWER LIMIT | 217517.5 | 5.50 | 324277 | 6.33 | 353702.5 | 9.68 |
| | LAB SAMPLE ID | | | | | | |
| 01 | BLK220616-02 | 363204 | 6.01 | 551741 | 6.83 | 593443 | 10.18 |
| 02 | E22-03482-010 | 393620 | 6.01 | 598105 | 6.83 | 627988 | 10.18 |
| 03 | LCSA220616-02 | 413706 | 6.00 | 639496 | 6.83 | 683174 | 10.18 |
| 04 | E22-03482-009MS | 428683 | 6.00 | 646319 | 6.83 | 699248 | 10.17 |
| 05 | E22-03482-005 | 372188 | 6.00 | 572189 | 6.83 | 608331 | 10.18 |
| 06 | E22-03482-009 | 357448 | 6.01 | 551041 | 6.83 | 587900 | 10.18 |
| 07 | E22-03482-012 | 345793 | 6.01 | 545371 | 6.83 | 564865 | 10.18 |
| 08 | E22-03482-014 | 324924 | 6.01 | 514673 | 6.83 | 552044 | 10.18 |
| 09 | E22-03482-013 | 316397 | 6.01 | 511109 | 6.83 | 544837 | 10.18 |
| 10 | E22-03482-015 | 336687 | 6.01 | 548192 | 6.83 | 583408 | 10.18 |
| 11 | E22-03449-001 | 354705 | 6.01 | 546785 | 6.83 | 595046 | 10.18 |
| 12 | E22-03449-002 | 328932 | 6.00 | 511848 | 6.83 | 557328 | 10.17 |
| 13 | E22-03403-004 | 330274 | 6.00 | 520135 | 6.83 | 558767 | 10.18 |
| 14 | E22-03403-003 | 316723 | 6.01 | 505396 | 6.83 | 538388 | 10.18 |
| 15 | E22-03403-001 | 308108 | 6.01 | 492525 | 6.83 | 518596 | 10.18 |
| 16 | E22-03403-002 | 306698 | 6.01 | 487500 | 6.83 | 499265 | 10.18 |
| 17 | E22-03449-002DUP | 293814 | 6.01 | 466845 | 6.83 | 492097 | 10.18 |
| 18 | E22-03482-011 | 310340 | 6.01 | 491483 | 6.83 | 521946 | 10.18 |
| 19 | E22-03482-008DL | 347417 | 6.01 | 560101 | 6.83 | 599945 | 10.18 |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = PENTAFLUOROBENZENE
IS2 = 1,4-DIFLUOROBENZENE
IS3 = CHLOROBENZENE-D5

AREA UPPER LIMIT = +200% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

FORM 8

VOLATILE ORGANICS SAMPLE DATA

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6632.D
Acq On : 17 Jun 2022 10:00
Operator : BARBARA
Sample : MW11D,E22-03403-001,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial : 45 Sample Multiplier: 1

Quant Time: Jun 17 12:31:07 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration

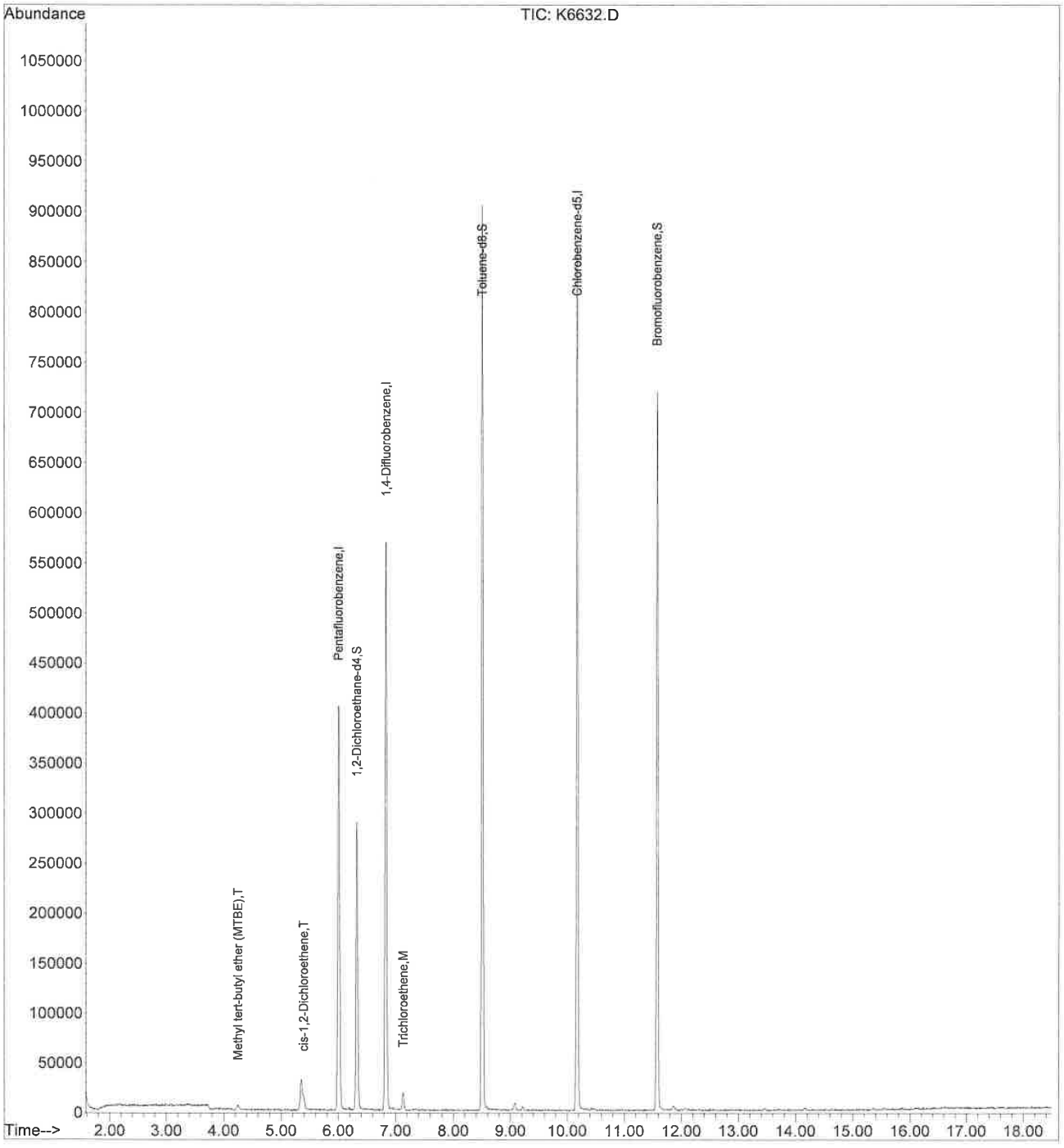
| Internal Standards | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 1) Pentafluorobenzene | 6.01 | 168 | 308108 | 50.00 | UG | | 0.00 |
| 31) 1,4-Difluorobenzene | 6.83 | 114 | 492525 | 50.00 | UG | | 0.00 |
| 50) Chlorobenzene-d5 | 10.18 | 117 | 518596 | 50.00 | UG | | 0.00 |
| **System Monitoring Compounds** | | | | | | | |
| 30) 1,2-Dichloroethane-d4 | 6.32 | 65 | 208538 | 50.14 | UG | | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 100.28% | | | | |
| 41) Toluene-d8 | 8.51 | 98 | 616807 | 47.90 | UG | | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 95.80% | | | | |
| 59) Bromofluorobenzene | 11.58 | 95 | 233865 | 48.26 | UG | | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 96.52% | | | | |
| **Target Compounds** | | | | | | | Qvalue |
| 17) Methyl tert-butyl ether (M | 4.25 | 73 | 3996 | 0.33 | UG | | 100 |
| 20) cis-1,2-Dichloroethene | 5.40 | 96 | 4939 | 1.16 | UG | # | 99 |
| 33) Trichloroethene | 7.13 | 95 | 5753 | 1.47 | UG | # | 49 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6632.D
Acq On : 17 Jun 2022 10:00
Operator : BARBARA
Sample : MW11D,E22-03403-001,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial : 45 Sample Multiplier: 1

Quant Time: Jun 17 12:31:07 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration




K8220616.M Wed Jun 22 11:12:18 2022 Page: 2

LSC Area Percent Report

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6632.D
Acq On : 17 Jun 2022 10:00
Operator : BARBARA
Sample : MW11D,E22-03403-001,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial : 45 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1 % of largest Peak
Start Thrs: 0.07 Max Peaks: 100
Stop Thrs : 0.2 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 10

Method : C:\MSDCHEM\1\METHODS\K8220616.M
Title : VOLATILE ORGANICS BY EPA METHOD 8260D

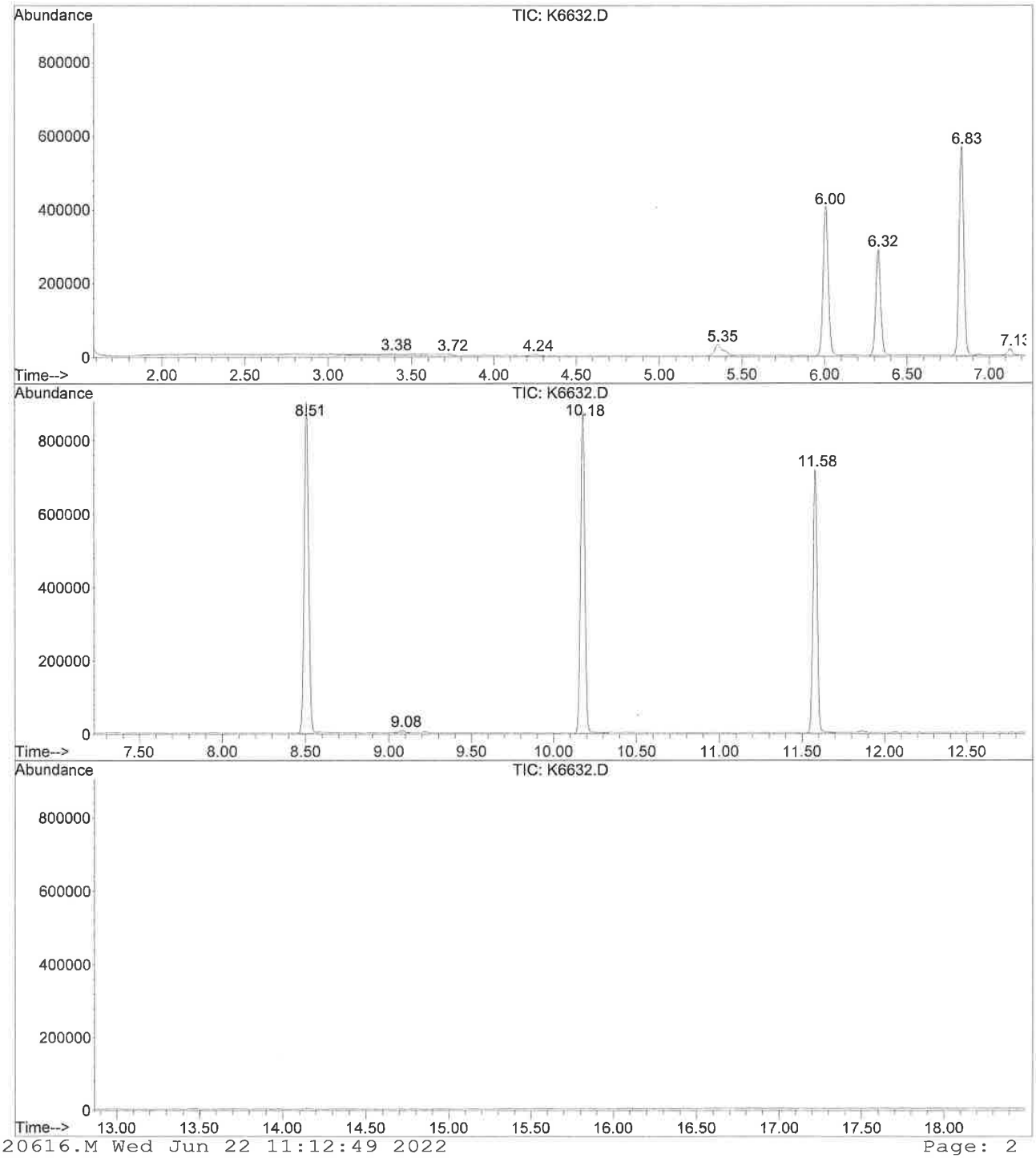
Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.383 | 282 | 344 | 377 | rVV | 3889 | 71020 | 4.27% | 0.952% |
| 2 | 3.724 | 377 | 409 | 420 | rVB | 5522 | 52377 | 3.15% | 0.702% |
| 3 | 4.243 | 497 | 508 | 521 | rBV7 | 5337 | 19565 | 1.18% | 0.262% |
| 4 | 5.354 | 708 | 720 | 740 | rBV2 | 30465 | 105916 | 6.37% | 1.420% |
| 5 | 6.005 | 832 | 844 | 863 | rBV | 404195 | 880047 | 52.89% | 11.799% |
| 6 | 6.324 | 894 | 905 | 919 | rBV | 288152 | 599822 | 36.05% | 8.042% |
| 7 | 6.833 | 990 | 1002 | 1019 | rBV | 567878 | 1143222 | 68.70% | 15.327% |
| 8 | 7.132 | 1049 | 1059 | 1070 | rVB3 | 17855 | 39331 | 2.36% | 0.527% |
| 9 | 8.505 | 1310 | 1321 | 1334 | rBV | 903609 | 1664019 | 100.00% | 22.309% |
| 10 | 9.077 | 1420 | 1430 | 1441 | rVB2 | 7195 | 19293 | 1.16% | 0.259% |
| 11 | 10.178 | 1629 | 1640 | 1670 | rBV | 874109 | 1602557 | 96.31% | 21.485% |
| 12 | 11.578 | 1897 | 1907 | 1932 | rVB | 717291 | 1261643 | 75.82% | 16.915% |

Sum of corrected areas: 7458812

LSC Report - Integrated Chromatogram

```
Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6632.D
Acq On    : 17 Jun 2022  10:00
Operator  : BARBARA
Sample    : MW11D,E22-03403-001,A,5mL,100
Misc      : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial  : 45   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P
```




K8220616.M Wed Jun 22 11:12:49 2022 Page: 2

Library Search Compound Report

```
Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6632.D
Acq On    : 17 Jun 2022  10:00
Operator  : BARBARA
Sample    : MW11D,E22-03403-001,A,5mL,100
Misc      : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial  : 45   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

**********
```

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6633.D
Acq On : 17 Jun 2022 10:29
Operator : BARBARA
Sample : MW10D,E22-03403-002,A,0.1mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,50
ALS Vial : 46 Sample Multiplier: 1

Quant Time: Jun 17 12:31:52 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration

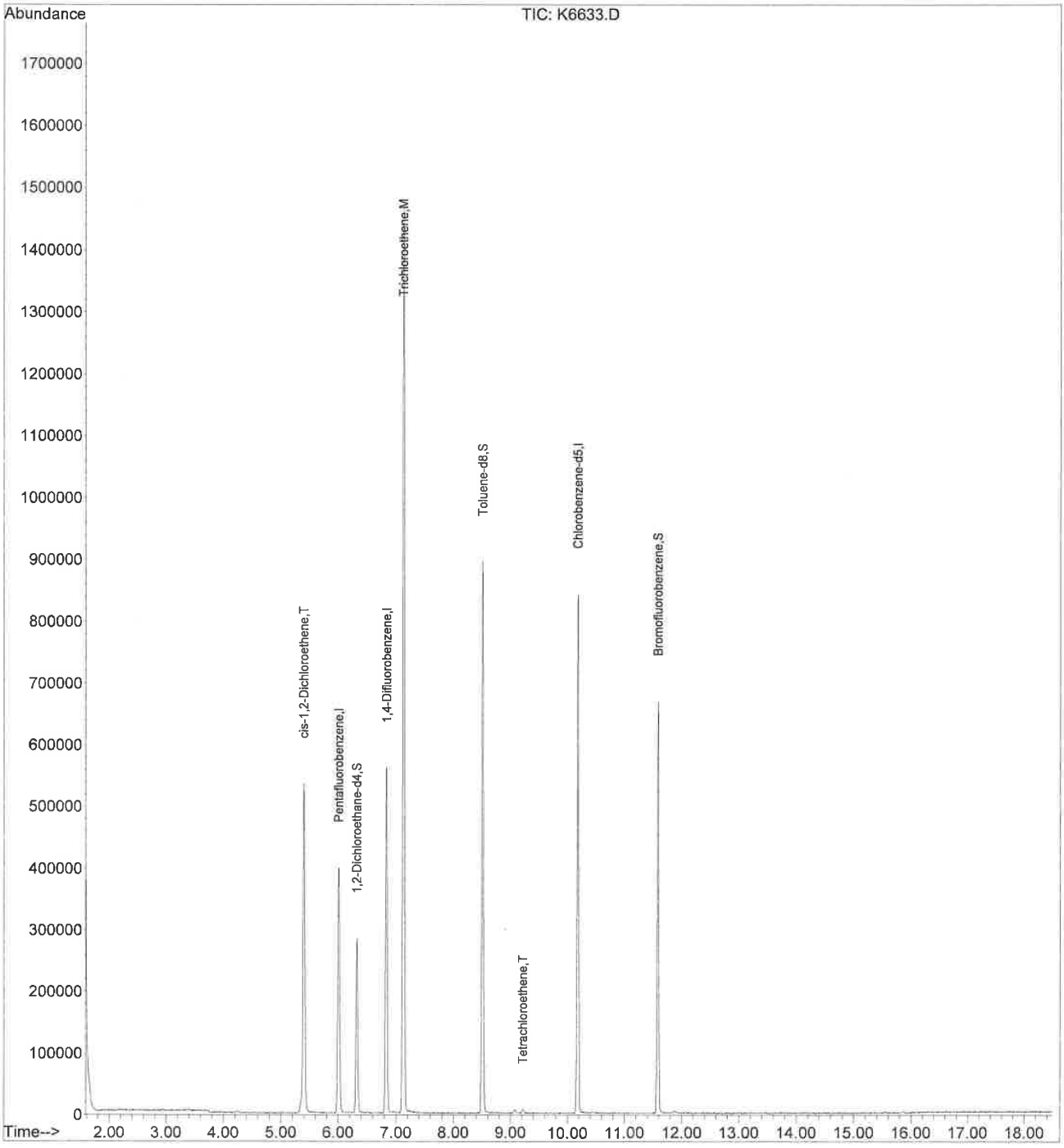
| Internal Standards | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 1) Pentafluorobenzene | 6.01 | 168 | 306698 | 50.00 | UG | | 0.00 |
| 31) 1,4-Difluorobenzene | 6.83 | 114 | 487500 | 50.00 | UG | | 0.00 |
| 50) Chlorobenzene-d5 | 10.18 | 117 | 499265 | 50.00 | UG | | 0.00 |
| **System Monitoring Compounds** | | | | | | | |
| 30) 1,2-Dichloroethane-d4 | 6.32 | 65 | 207594 | 50.15 | UG | | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 100.30% | | | | |
| 41) Toluene-d8 | 8.51 | 98 | 607331 | 47.65 | UG | | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 95.30% | | | | |
| 59) Bromofluorobenzene | 11.58 | 95 | 214928 | 46.07 | UG | | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 92.14% | | | | |
| **Target Compounds** | | | | | | | Qvalue |
| 20) cis-1,2-Dichloroethene | 5.40 | 96 | 254155 | 59.82 | UG | # | 99 |
| 33) Trichloroethene | 7.13 | 95 | 483714 | 125.20 | UG | # | 97 |
| 45) Tetrachloroethene | 9.21 | 166 | 2345 | 0.55 | UG | | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6633.D
Acq On : 17 Jun 2022 10:29
Operator : BARBARA
Sample : MW10D,E22-03403-002,A,0.1mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,50
ALS Vial : 46 Sample Multiplier: 1

Quant Time: Jun 17 12:31:52 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration




K8220616.M Wed Jun 22 11:13:09 2022 Page: 2

LSC Area Percent Report

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6633.D
Acq On : 17 Jun 2022 10:29
Operator : BARBARA
Sample : MW10D,E22-03403-002,A,0.1mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,50
ALS Vial : 46 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1 % of largest Peak
Start Thrs: 0.07 Max Peaks: 100
Stop Thrs : 0.2 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 10

Method : C:\MSDCHEM\1\METHODS\K8220616.M
Title : VOLATILE ORGANICS BY EPA METHOD 8260D

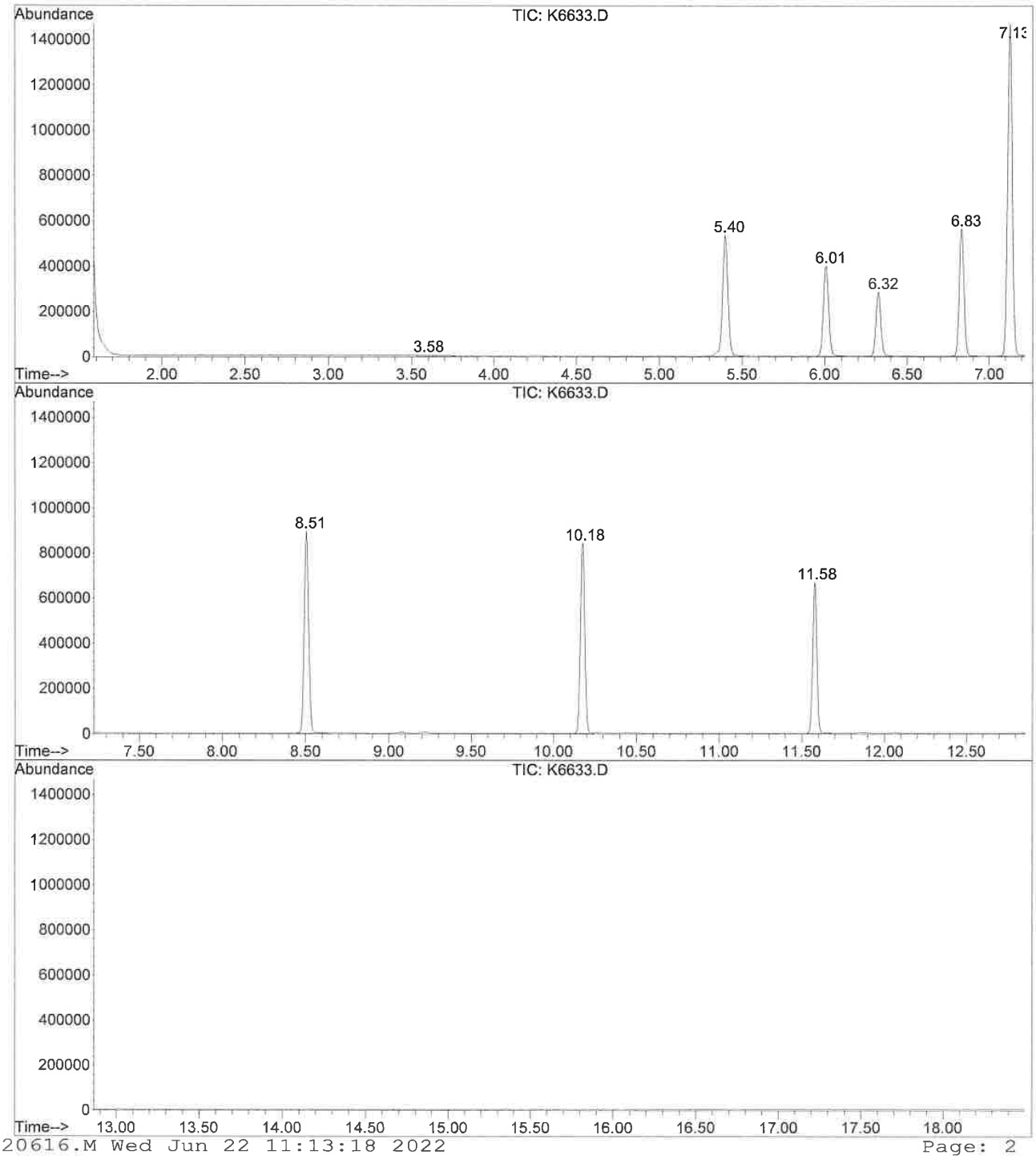
Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.577 | 372 | 381 | 419 | rVB | 4982 | 50912 | 1.76% | 0.457% |
| 2 | 5.396 | 706 | 728 | 748 | rBV | 534125 | 1211153 | 41.84% | 10.883% |
| 3 | 6.010 | 832 | 845 | 866 | rBV | 397271 | 873760 | 30.19% | 7.851% |
| 4 | 6.324 | 892 | 905 | 922 | rBV | 283198 | 604304 | 20.88% | 5.430% |
| 5 | 6.833 | 991 | 1002 | 1019 | rBV | 559813 | 1127488 | 38.95% | 10.131% |
| 6 | 7.126 | 1045 | 1058 | 1074 | rBV | 1468450 | 2894647 | 100.00% | 26.010% |
| 7 | 8.505 | 1310 | 1321 | 1347 | rBV | 893927 | 1650849 | 57.03% | 14.834% |
| 8 | 10.178 | 1630 | 1640 | 1653 | rBV | 840909 | 1540323 | 53.21% | 13.841% |
| 9 | 11.578 | 1897 | 1907 | 1927 | rBV | 666707 | 1175495 | 40.61% | 10.563% |

Sum of corrected areas: 11128931

LSC Report - Integrated Chromatogram

```
Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6633.D
Acq On    : 17 Jun 2022  10:29
Operator  : BARBARA
Sample    : MW10D,E22-03403-002,A,0.1mL,100
Misc      : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,50
ALS Vial  : 46   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P
```




K8220616.M Wed Jun 22 11:13:18 2022 Page: 2

Library Search Compound Report

```
Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6633.D
Acq On    : 17 Jun 2022  10:29
Operator  : BARBARA
Sample    : MW10D,E22-03403-002,A,0.1mL,100
Misc      : EWMA/SWIVELIER_~_2,06/09/22,06/09/22,50
ALS Vial  : 46   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

**********
```

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6631.D
Acq On : 17 Jun 2022 9:32
Operator : BARBARA
Sample : FIELD_BLANK,E22-03403-003,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial : 44 Sample Multiplier: 1

Quant Time: Jun 17 12:30:08 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Pentafluorobenzene | 6.01 | 168 | 316723 | 50.00 | UG | 0.00 |
| 31) 1,4-Difluorobenzene | 6.83 | 114 | 505396 | 50.00 | UG | 0.00 |
| 50) Chlorobenzene-d5 | 10.18 | 117 | 538388 | 50.00 | UG | 0.00 |
| **System Monitoring Compounds** | | | | | | |
| 30) 1,2-Dichloroethane-d4 | 6.32 | 65 | 214243 | 50.12 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 100.24% | | | |
| 41) Toluene-d8 | 8.51 | 98 | 632534 | 47.87 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 95.74% | | | |
| 59) Bromofluorobenzene | 11.58 | 95 | 239683 | 47.64 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 95.28% | | | |

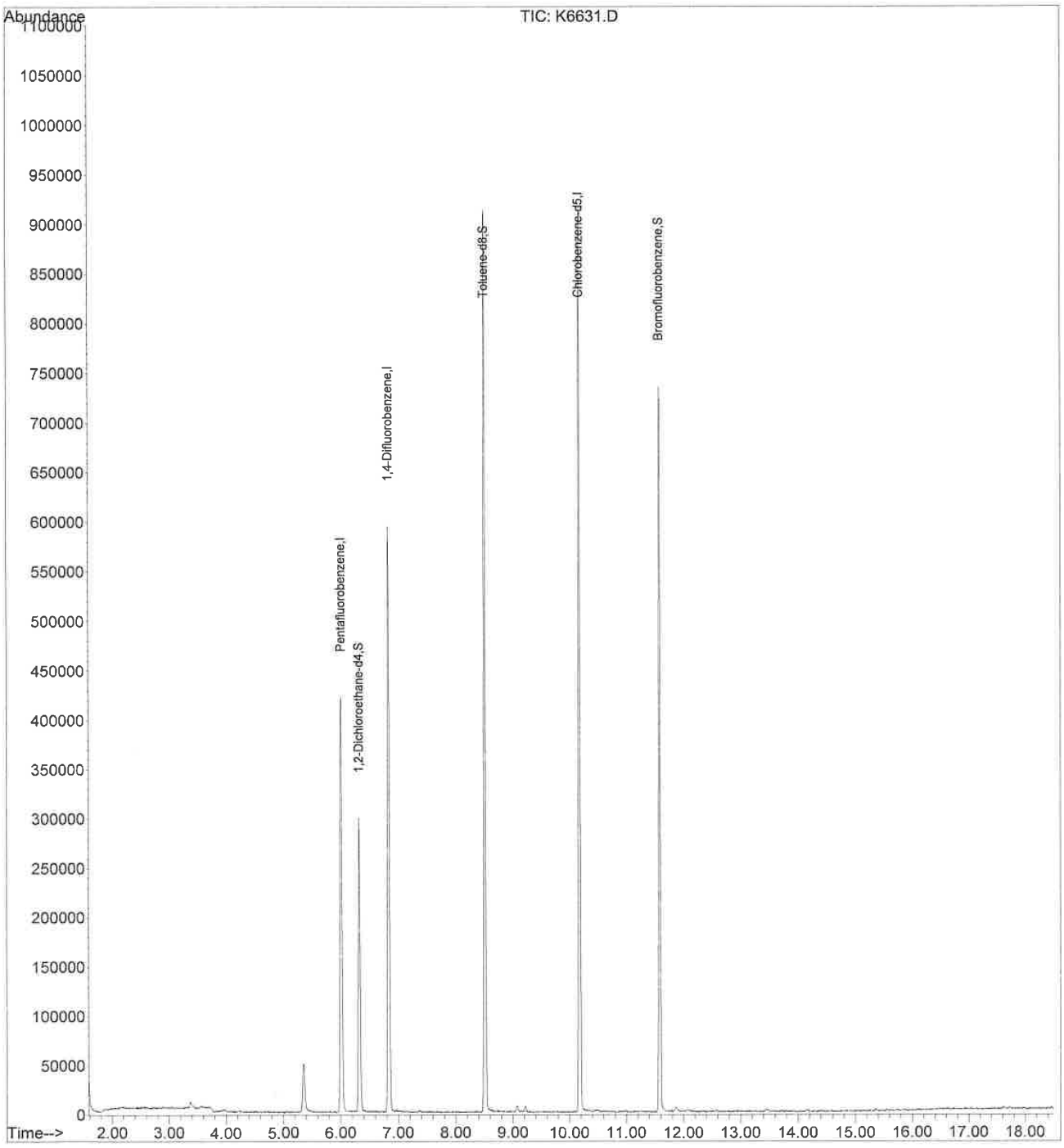
| Target Compounds | Qvalue |
|---|---|

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6631.D
Acq On : 17 Jun 2022 9:32
Operator : BARBARA
Sample : FIELD_BLANK,E22-03403-003,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial : 44 Sample Multiplier: 1

Quant Time: Jun 17 12:30:08 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6631.D
Acq On : 17 Jun 2022 9:32
Operator : BARBARA
Sample : FIELD_BLANK,E22-03403-003,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial : 44 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1 % of largest Peak
Start Thrs: 0.07 Max Peaks: 100
Stop Thrs : 0.2 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 10

Method : C:\MSDCHEM\1\METHODS\K8220616.M
Title : VOLATILE ORGANICS BY EPA METHOD 8260D

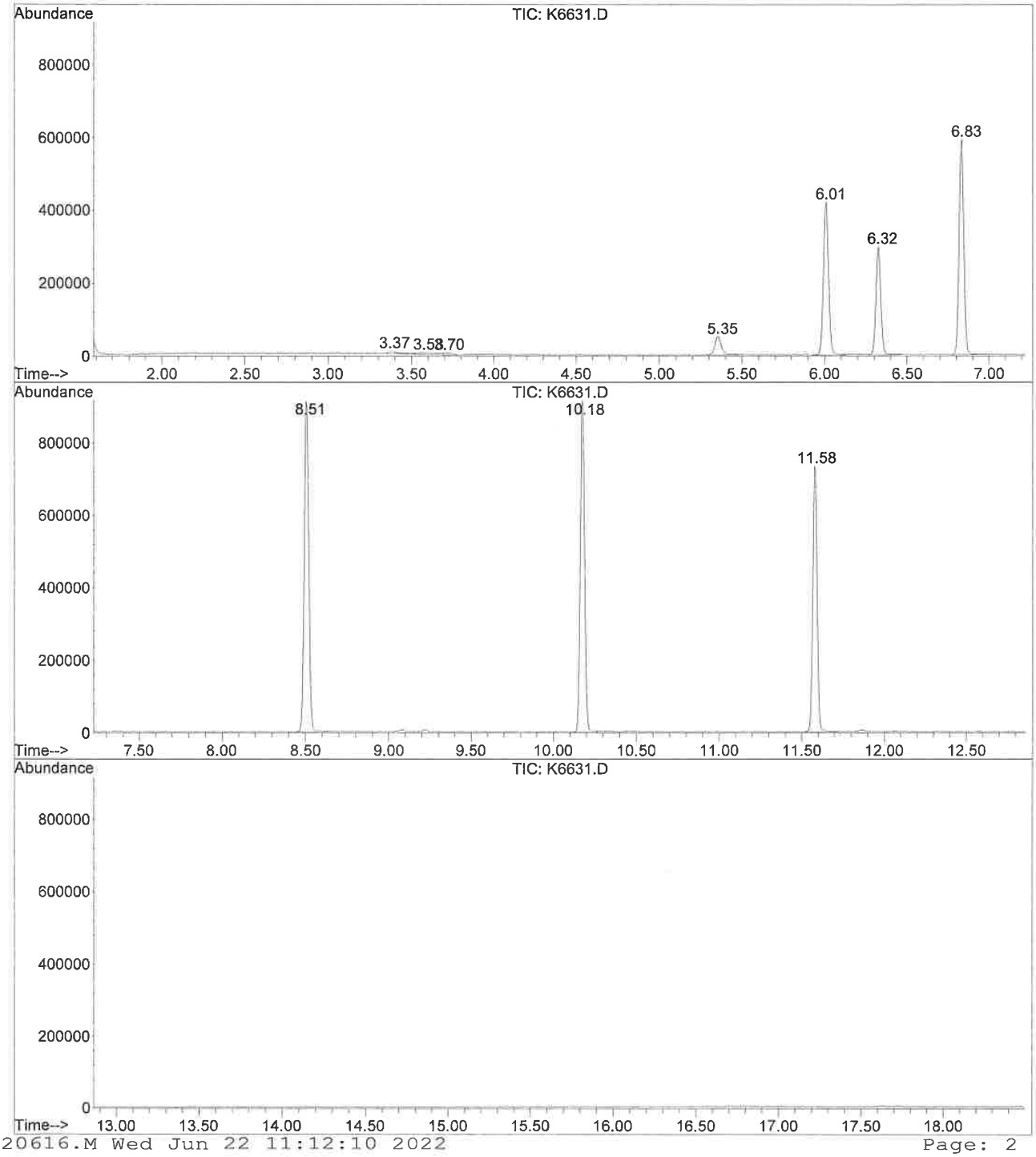
Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.373 | 338 | 342 | 371 | rVV2 | 6940 | 23594 | 1.37% | 0.309% |
| 2 | 3.577 | 371 | 381 | 403 | rVV8 | 5604 | 39052 | 2.26% | 0.512% |
| 3 | 3.703 | 403 | 405 | 420 | rVB8 | 6213 | 19600 | 1.13% | 0.257% |
| 4 | 5.354 | 706 | 720 | 744 | rBV2 | 49244 | 139773 | 8.09% | 1.832% |
| 5 | 6.010 | 829 | 845 | 868 | rBV | 420679 | 912919 | 52.86% | 11.965% |
| 6 | 6.324 | 894 | 905 | 932 | rVB | 297507 | 620970 | 35.96% | 8.138% |
| 7 | 6.833 | 988 | 1002 | 1019 | rBV | 592309 | 1173413 | 67.95% | 15.379% |
| 8 | 8.505 | 1308 | 1321 | 1345 | rBV | 911531 | 1726947 | 100.00% | 22.633% |
| 9 | 10.178 | 1629 | 1640 | 1657 | rBV | 914009 | 1657460 | 95.98% | 21.722% |
| 10 | 11.578 | 1895 | 1907 | 1934 | rBV | 733177 | 1316433 | 76.23% | 17.253% |

Sum of corrected areas: 7630161

LSC Report - Integrated Chromatogram

```
Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6631.D
Acq On    : 17 Jun 2022    9:32
Operator  : BARBARA
Sample    : FIELD_BLANK,E22-03403-003,A,5mL,100
Misc      : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial  : 44   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P
```



Library Search Compound Report

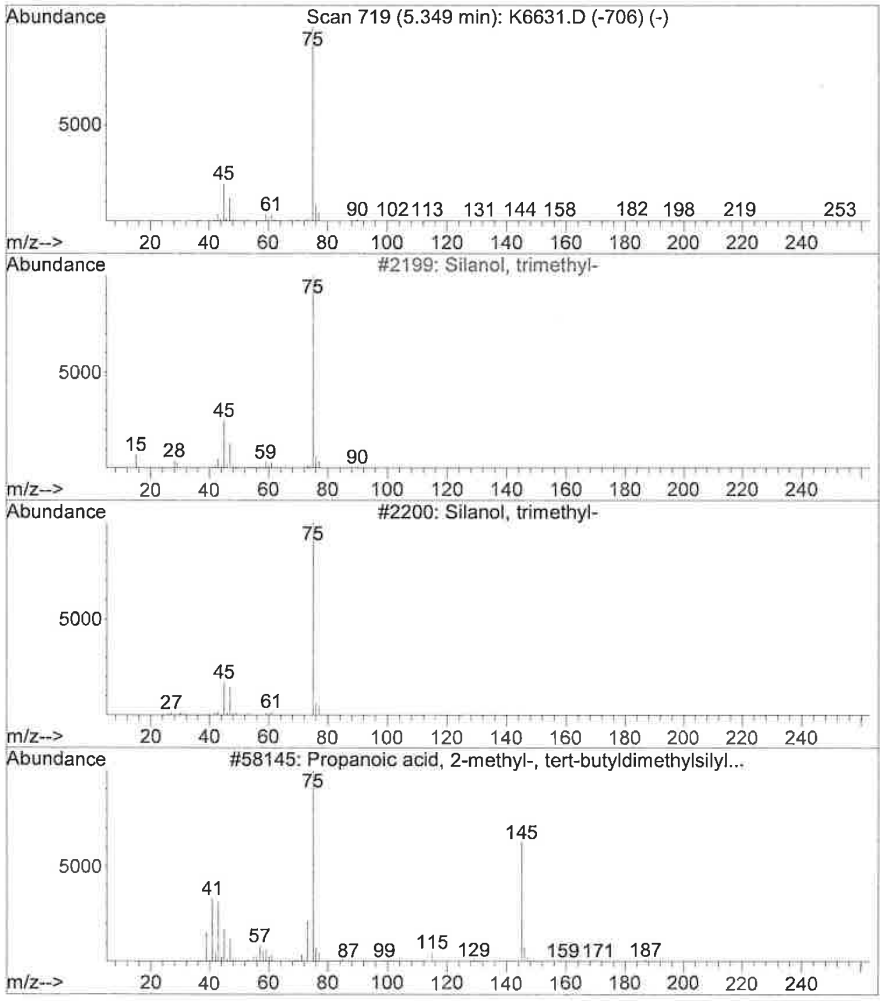
```
Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6631.D
Acq On    : 17 Jun 2022    9:32
Operator  : BARBARA
Sample    : FIELD_BLANK,E22-03403-003,A,5mL,100
Misc      : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial  : 44   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P
```

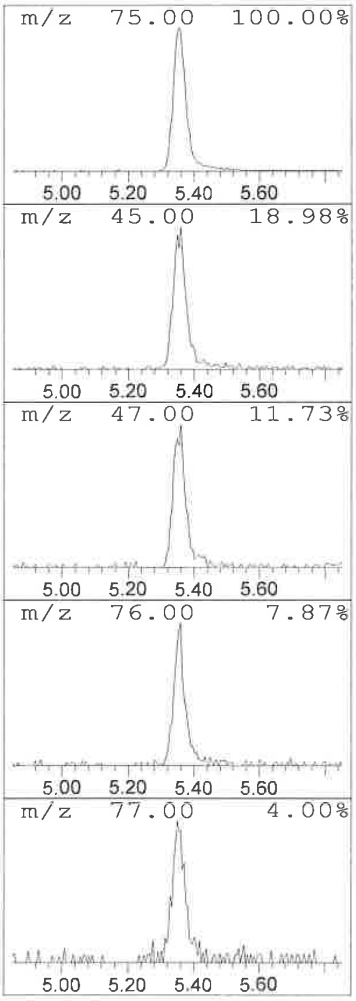
**********

Peak Number 1 Silanol, trimethyl- Concentration Rank 1

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 5.35 | 7.66 UG | 139773 | Pentafluorobenzene | 6.01 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Silanol, trimethyl- | 90 | C3H10OSi | 001066-40-6 | 86 |
| 2 | Silanol, trimethyl- | 90 | C3H10OSi | 001066-40-6 | 78 |
| 3 | Propanoic acid, 2-methyl-, tert-... | 202 | C10H22O2Si | 111864-21-2 | 78 |
| 4 | Acetic acid, trimethylsilyl ester | 132 | C5H12O2Si | 018147-36-9 | 78 |
| 5 | Silanol, dimethyl(1,1,2-trimethy... | 160 | C8H20OSi | 055644-10-5 | 72 |



Tentatively Identified Compound (LSC) summary

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6631.D
Acq On : 17 Jun 2022 9:32
Operator : BARBARA
Sample : FIELD_BLANK,E22-03403-003,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial : 44 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P

| | | | | | | Internal Standard | | | |
|---|---|---|---|---|---|---|---|---|---|
| TIC Top Hit name | | RT | EstConc | Units | Response | # | RT | Resp | Conc |
| Silanol, trimethyl- | | | | | | 5.35 | | 7.7 | 001066-40-6 |
| 139773 | 1 | 6.01 | 912919 | 50.0 | | | | | |

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6630.D
Acq On : 17 Jun 2022 9:03
Operator : BARBARA
Sample : TRIP_BLANK,E22-03403-004,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial : 43 Sample Multiplier: 1

Quant Time: Jun 17 12:51:52 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration

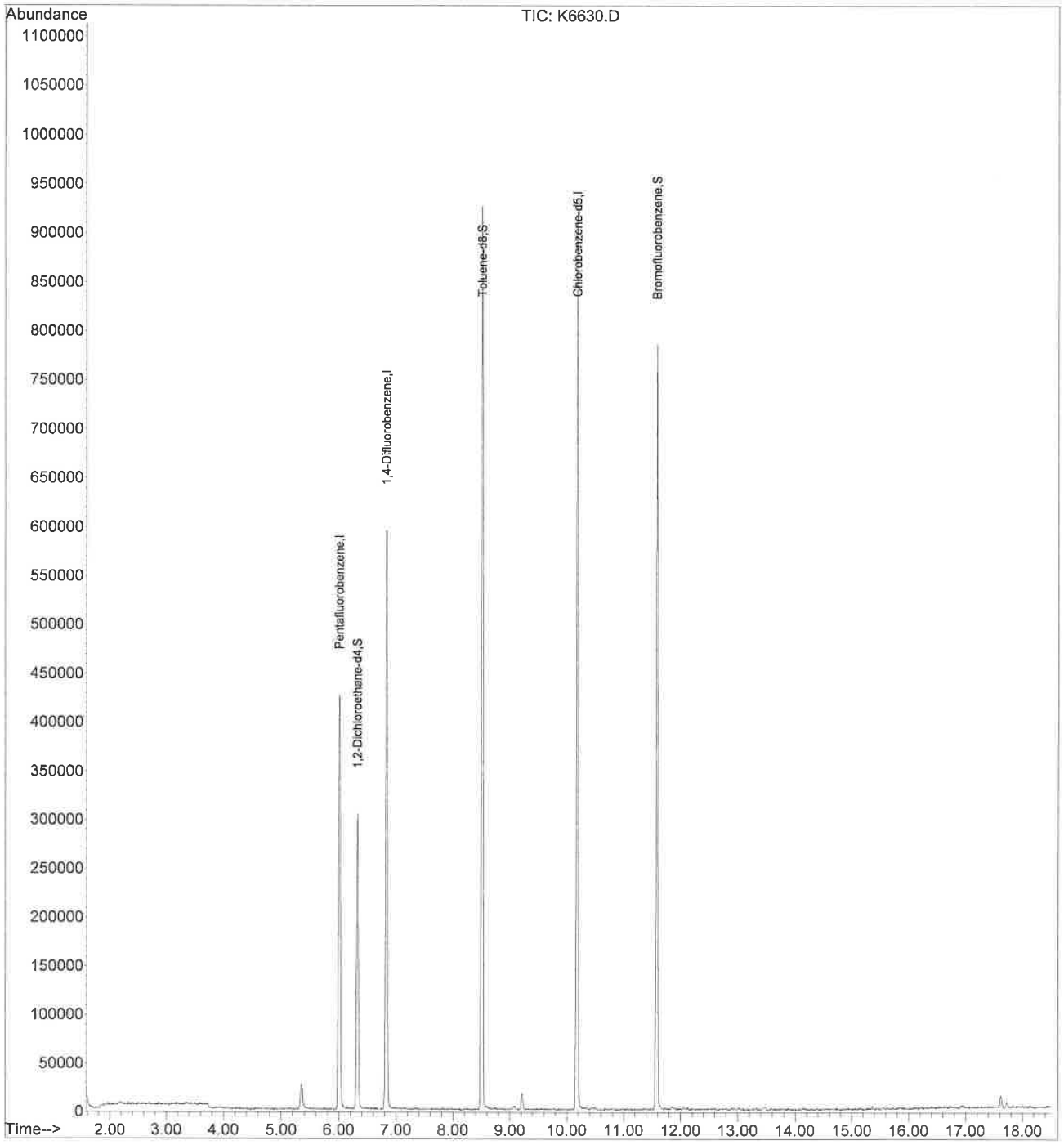
| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Pentafluorobenzene | 6.00 | 168 | 330274 | 50.00 | UG | 0.00 |
| 31) 1,4-Difluorobenzene | 6.83 | 114 | 520135 | 50.00 | UG | 0.00 |
| 50) Chlorobenzene-d5 | 10.18 | 117 | 558767 | 50.00 | UG | 0.00 |
| **System Monitoring Compounds** | | | | | | |
| 30) 1,2-Dichloroethane-d4 | 6.32 | 65 | 221297 | 49.64 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 99.28% | | | |
| 41) Toluene-d8 | 8.51 | 98 | 658677 | 48.44 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 96.88% | | | |
| 59) Bromofluorobenzene | 11.58 | 95 | 251243 | 48.12 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 96.24% | | | |
| **Target Compounds** | | | | | | Qvalue |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6630.D
Acq On : 17 Jun 2022 9:03
Operator : BARBARA
Sample : TRIP_BLANK,E22-03403-004,A,5mL,100
Misc : EWMA/SWIVELIER_-_2,06/09/22,06/09/22,1
ALS Vial : 43 Sample Multiplier: 1

Quant Time: Jun 17 12:51:52 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration



## VOLATILE ORGANICS

Lab ID: BLK220616-02
Client ID: BLK220616-02
Date Received: NA
Date Analyzed: 06/17/2022
Data file: K6617.D 06/17/2022 02:47

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Dichlorodifluoromethane | ND | | 1.00 | 0.552 |
| Chloromethane | ND | | 0.500 | 0.309 |
| Vinyl chloride | ND | | 1.00 | 0.352 |
| Bromomethane | ND | | 1.00 | 0.386 |
| Chloroethane | ND | | 0.500 | 0.324 |
| Trichlorofluoromethane | ND | | 1.00 | 0.503 |
| 1,1-Dichloroethene | ND | | 0.500 | 0.363 |
| Acetone | ND | | 2.00 | 0.847 |
| Carbon disulfide | ND | | 1.00 | 0.403 |
| Methylene chloride | ND | | 1.00 | 0.500 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 0.372 |
| Methyl tert-butyl ether (MTBE) | ND | | 0.500 | 0.245 |
| 1,1-Dichloroethane | ND | | 0.500 | 0.285 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 0.277 |
| 2-Butanone (MEK) | ND | | 2.00 | 0.802 |
| Bromochloromethane | ND | | 1.00 | 0.379 |
| Chloroform | ND | | 0.500 | 0.285 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 0.381 |
| Carbon tetrachloride | ND | | 0.500 | 0.349 |
| 1,2-Dichloroethane (EDC) | ND | | 0.500 | 0.273 |
| Benzene | ND | | 0.500 | 0.270 |
| Trichloroethene | ND | | 0.500 | 0.347 |
| 1,2-Dichloropropane | ND | | 0.500 | 0.272 |
| 1,4-Dioxane | ND | | 100 | 51.1 |
| Bromodichloromethane | ND | | 0.500 | 0.258 |
| cis-1,3-Dichloropropene | ND | | 1.00 | 0.264 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1.00 | 0.611 |

## VOLATILE ORGANICS

Lab ID: BLK220616-02
Client ID: BLK220616-02
Date Received: NA
Date Analyzed: 06/17/2022
Data file: K6617.D 06/17/2022 02:47

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
% Moisture: 100
Dilution Factor: 1

| Compound | Concentration | Q | RL | MDL |
|---|---|---|---|---|
| Toluene | ND | | 0.500 | 0.302 |
| trans-1,3-Dichloropropene | ND | | 1.00 | 0.330 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 0.313 |
| Tetrachloroethene | ND | | 0.500 | 0.365 |
| 2-Hexanone | ND | | 1.00 | 0.818 |
| Dibromochloromethane | ND | | 0.500 | 0.263 |
| 1,2-Dibromoethane (EDB) | ND | | 0.500 | 0.289 |
| Chlorobenzene | ND | | 0.500 | 0.304 |
| Ethylbenzene | ND | | 0.500 | 0.313 |
| Total Xylenes | ND | | 1.00 | 0.345 |
| Styrene | ND | | 1.00 | 0.317 |
| Bromoform | ND | | 0.500 | 0.328 |
| Isopropylbenzene | ND | | 1.00 | 0.332 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | 0.284 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 0.386 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 0.397 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 0.354 |
| 1,2-Dibromo-3-chloropropane | ND | | 1.00 | 0.410 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | 0.358 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | 0.406 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 1.00 | 0.538 |
| Methyl acetate | ND | | 0.500 | 0.345 |
| Cyclohexane | ND | | 1.00 | 0.469 |
| Methylcyclohexane | ND | | 1.00 | 0.421 |
| 1,3-Dichloropropene (cis- and trans-) | ND | | 1.00 | 0.264 |

Total Target Compounds (52): 0

D --- Dilution Performed
J --- Value Less than RL & greater than MDL
E --- Exceeds upper level of Calibration curve

B --- Compound detected in Blank
C --- Common laboratory contamination

## VOLATILE ORGANICS
### Tentatively Identified Compounds

Lab ID: BLK220616-02
Client ID: BLK220616-02
Date Received: NA
Date Analyzed: 06/17/2022
Date File: K6617.D

GC/MS Column: DB-624
Sample wt/vol: 5mL
Matrix-Units: Aqueous-µg/L
Dilution Factor: 1
% Moisture: 100

| CAS # | Compound | Estimated Concentration | Q | Retention Time |
|---|---|---|---|---|
| | No peaks detected | | | |

Total TICs = 0

D --- Dilution Performed

J --- Estimated concentration for TICs

N --- Presumptive evidence of a compound from the use of GC/MS NIST library search

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6617.D
Acq On : 17 Jun 2022 2:47
Operator : BARBARA
Sample : BLK220616-02,BLK220616-02,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Jun 17 09:25:41 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration

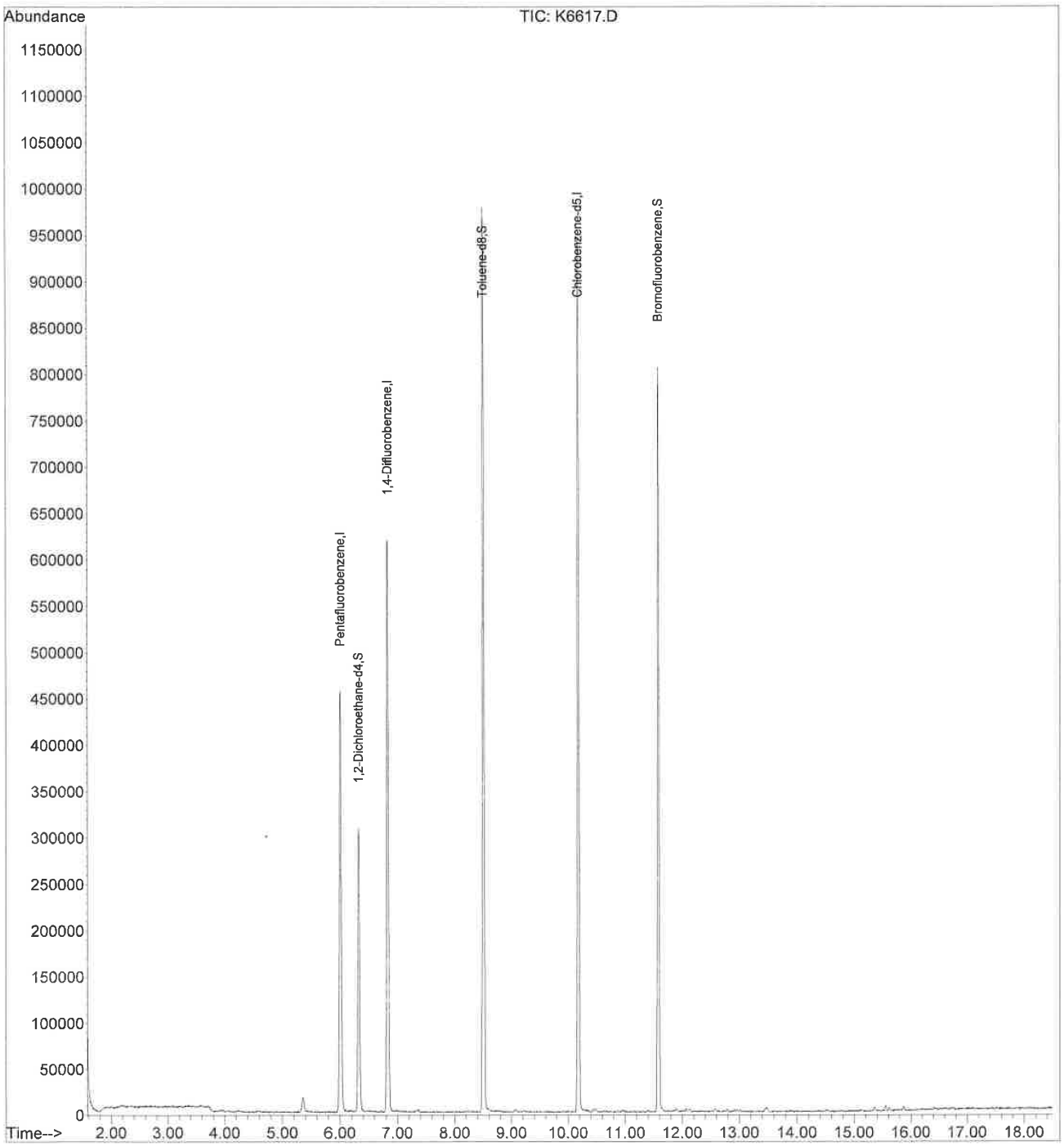
| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Pentafluorobenzene | 6.01 | 168 | 363204 | 50.00 | UG | 0.00 |
| 31) 1,4-Difluorobenzene | 6.83 | 114 | 551741 | 50.00 | UG | 0.00 |
| 50) Chlorobenzene-d5 | 10.18 | 117 | 593443 | 50.00 | UG | 0.00 |
| **System Monitoring Compounds** | | | | | | |
| 30) 1,2-Dichloroethane-d4 | 6.32 | 65 | 226070 | 46.11 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 92.22% | | | |
| 41) Toluene-d8 | 8.51 | 98 | 692371 | 48.00 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 96.00% | | | |
| 59) Bromofluorobenzene | 11.58 | 95 | 262077 | 47.26 | UG | 0.00 |
| Spiked Amount 50.000 | Range 80 - 120 | | Recovery = 94.52% | | | |
| **Target Compounds** | | | | | | Qvalue |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6617.D
Acq On : 17 Jun 2022 2:47
Operator : BARBARA
Sample : BLK220616-02,BLK220616-02,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Jun 17 09:25:41 2022
Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title : VOLATILE ORGANICS BY EPA METHOD 8260D
QLast Update : Fri Jun 17 09:16:54 2022
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6617.D
Acq On : 17 Jun 2022 2:47
Operator : BARBARA
Sample : BLK220616-02,BLK220616-02,A,5mL,100
Misc : NA,NA,NA,1
ALS Vial : 30 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1 % of largest Peak
Start Thrs: 0.07 Max Peaks: 100
Stop Thrs : 0.2 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 10

Method : C:\MSDCHEM\1\METHODS\K8220616.M
Title : VOLATILE ORGANICS BY EPA METHOD 8260D

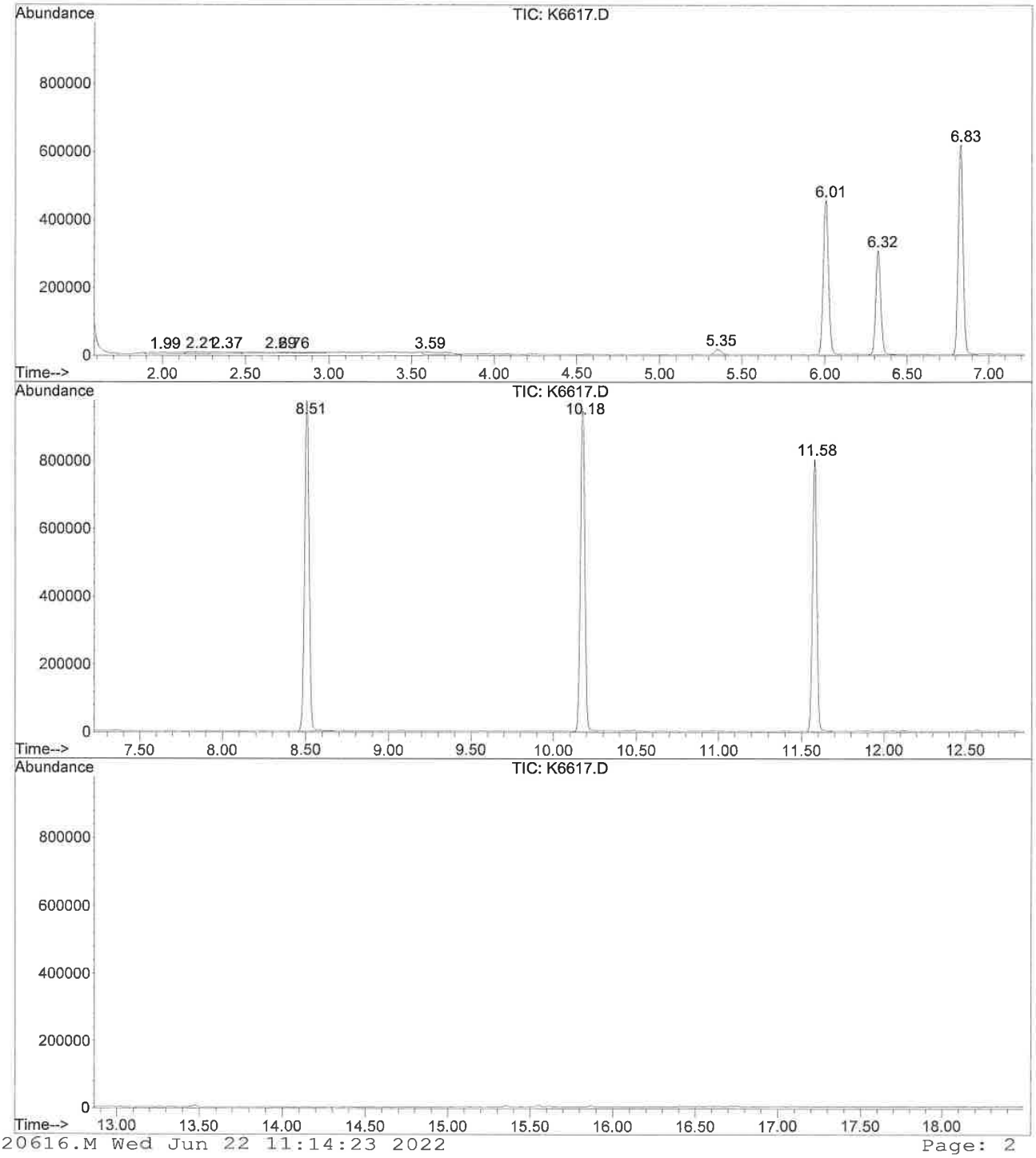
Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.993 | 60 | 79 | 106 | rVV | 5734 | 62215 | 3.36% | 0.749% |
| 2 | 2.208 | 106 | 120 | 134 | rVV | 6174 | 42362 | 2.29% | 0.510% |
| 3 | 2.366 | 134 | 150 | 171 | rVV | 5082 | 43902 | 2.37% | 0.528% |
| 4 | 2.686 | 171 | 211 | 224 | rVV | 4425 | 47835 | 2.58% | 0.576% |
| 5 | 2.764 | 224 | 226 | 268 | rVB | 3359 | 25234 | 1.36% | 0.304% |
| 6 | 3.587 | 379 | 383 | 425 | rVB | 7725 | 70690 | 3.82% | 0.851% |
| 7 | 5.349 | 711 | 719 | 733 | rVB2 | 15391 | 42382 | 2.29% | 0.510% |
| 8 | 6.010 | 833 | 845 | 861 | rBV | 455022 | 998922 | 53.93% | 12.021% |
| 9 | 6.324 | 893 | 905 | 926 | rBV | 307011 | 649501 | 35.06% | 7.816% |
| 10 | 6.833 | 991 | 1002 | 1021 | rBV | 617519 | 1252866 | 67.64% | 15.077% |
| 11 | 8.505 | 1311 | 1321 | 1352 | rBV | 976941 | 1852370 | 100.00% | 22.291% |
| 12 | 10.178 | 1627 | 1640 | 1657 | rBV | 947044 | 1782802 | 96.24% | 21.454% |
| 13 | 11.578 | 1897 | 1907 | 1928 | rBV | 804028 | 1438940 | 77.68% | 17.316% |

Sum of corrected areas: 8310021

LSC Report - Integrated Chromatogram

```
Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6617.D
Acq On    : 17 Jun 2022    2:47
Operator  : BARBARA
Sample    : BLK220616-02,BLK220616-02,A,5mL,100
Misc      : NA,NA,NA,1
ALS Vial  : 30   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P
```




K8220616.M Wed Jun 22 11:14:23 2022 Page: 2

Library Search Compound Report

```
Data Path : C:\MSDChem\1\DATA\22-06-16\
Data File : K6617.D
Acq On    : 17 Jun 2022    2:47
Operator  : BARBARA
Sample    : BLK220616-02,BLK220616-02,A,5mL,100
Misc      : NA,NA,NA,1
ALS Vial  : 30   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\K8220616.M
Quant Title  : VOLATILE ORGANICS BY EPA METHOD 8260D

TIC Library   : C:\DATABASE\NIST05A.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

**********
```

SAMPLE TRACKING

Finalized 06/29/2022

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INTEGRATED ANALYTICAL LABORATORIES LLC

IAL Integrated Analytical Laboratories LLC

Integrated Analytical Labs
273 Franklin Road
Randolph, NJ 07869

# Chain of Custody Record

Contact Us: 973-361-4252
Web: www.ialonline.com

## Customer Information

Company: EWMA
Address:
Telephone #:
Project Manager: Cathy Bryant
Email Address(es):
Project Name: Swivellier
Project Location (State): NJ
Bottle Order #: BO 1376
☐ "Report to"/"Invoice To" same as above
Sampled by: Matt Gower
COMPLETED BY IAL:
____ Field Sampling ____ Equipment Rental

## Reporting Information

☐ Check here if same as "Customer Information"
REPORT TO:
Address: SAME
Attn:
INVOICE TO:
Address: SAME
Attn:
PO #
Quote # Sub # 202530

## Sample Matrix

DW - Drinking Water
WW - Waste Water
GW - Groundwater
SW - Surface Water
LIQ - Liquid (specify)
M - Multiphasic
OI - Oil
S - Soil
SED - Sediment
SOL - Solid (specify)
SL - Sludge
W - Wipe

## **Rush TAT Charge

24 hr - 100%...
48 hr - 75%....
72 hr - 50%....
96 hr - 35%....
5 day - 25%....
6-9 day - 10%

## Deliverables *Surcharge may apply for regulatory

NJ, CT, PA
☐ Results Only (Level I)
☒ Reduced (Level II/III)
☐ Regulatory/ Full* (Level IV)

NY
☐ ASP Category A
☐ ASP Category B*

## EDDs

☐ NJ SRP
☐ NYSDEC EQuIS
☒ lab approved custom EDD
☐ NO EDD REQ'D

## Concentrations Expected:

Low Med High
Known Hazard: ☐ YES ☐ NO
Describe:

## Turn-Around Time (TAT)

Standard (10 business days) Verbal
Rush/date needed (only if pre-approved)** STD
Hard Copy: Standard 3 week Other - call for price

## Petroleum Hydrocarbons - Selection is REQUIRED

☐ NJ EPH-DRO - Category 1
☐ NJ EPH-C40 - Category 2
☐ NJ EPH-Fractionated - Cat 2
TAT for PHC, if other than 2 weeks:
☐ CT ETPH
☐ DRO-8015

## Regulatory Requirement

| New Jersey | New York |
|---|---|
| ☐ GWQS | ☐ AWQS (TOGS Table 1) |
| ☐ IGW | ☐ GWEL (TOGS Table 5) |
| ☐ SRS | ☐ Part 375-6.8(a) - Unrestricted |
| ☐ Ecological | ☐ Part 375-6.8(b) - Restricted |
| ☐ DW | ☐ CP-51 Table 2 or 3 (selection required) |
| ☐ SPLP | Other States / Criteria |
| | ☐ Pennsylvania Act 2 |
| | ☐ CT RCSA 22a-133k1-k3 |
| | ☐ TSCA PCBs |
| | OTHER Regulatory Requirements - specify in comments |

## SAMPLE INFORMATION

## ANALYTICAL PARAMETERS (please note if contingent)

| Client ID | Depth (ft only) | Sampling Date | Sampling Time | Matrix | # containers | IAL # | TCL VOCs | 5O | | | | | | | Sample Specific Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW 11D | | 6/9/22 | 13:50 | GW | 4 | 1 | X | | | | | | | | |
| MW 10D | | | 15:35 | GW | 4 | 2 | X | | | | | | | | |
| Field Blank | | | 14:01 | LIQ | 2 | 3 | X | | | | | | | | |
| Trip Blank | | | 8:30 | LIQ | 2 | 4 | | X | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Samples previously analyzed by IAL? YES / NO

Preservative Code: 1 = None, 2 = HCl, 3 = HNO3, 4 = MeOH, 5 = NaOH, 6 = H2SO4, 7 = Other

Container Code: A = Amber Glass, B = Plastic, C = Vial, D = Glass, E = EnCore, T = Terracore

Preservative (use code): 2
Container Type (use code): C

Special Instructions/QC Requirements & Comments:

Please print legibly and fill out completely. Samples cannot be processed and the turnaround time (TAT) will not start until any ambiguities have been resolved. TAT starts the following day if samples rec'd at lab ≥ 5PM. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY IAL'S TERMS & CONDITIONS (found on rear of pink copy).

Carrier (check one):
☐ IAL Courier
☐ Client Courier
☐ FedEx/UPS***
***Tracking #:

| Relinquished by (Signature and Company) | Date | Time | Received by (Signature and Company) | Date | Time |
|---|---|---|---|---|---|
| Matt Gower GM | 6/9/22 | 1605 | GM | 6/9/22 | 1605 |
| GM | 6/9/22 | 1635 | | 6/9/22 | 1635 |

FOR LAB USE ONLY
SDG #: 3403
Cooler Temp: 4 °C

IAL Rev 11/2019

LAB COPIES - WHITE & YELLOW; CLIENT COPY - PINK

Certification IDs: TNI (TNI01284); CT (PH-0699); NJ (14751); NY (11402); PA (68-00773).

PAGE: of

Jun 13, 2022 @ 09:39

# PROJECT INFORMATION

## E22-03403: SWIVELIER - 202530

**To:** Cathy Bryant
EWMA - HQ
Fax:
EMail: Cathy.Bryant@ewma.com

**Report To**

EWMA - HQ
Lanidex Center
100 Misty Lane
Parsippany, NJ 07054
Attn: Cathy Bryant

**Bill To**

EWMA - HQ
Lanidex Center
100 Misty Lane
Parsippany, NJ 07054
Attn: Cathy Bryant

| Report Format | P.O. # | Received At Lab | PHC Due | Verbal Due | Hardcopy Due |
|---|---|---|---|---|---|
| Reduced | | Jun 09, 2022 @ 16:35 | NA | Jun 23, 2022 | Jun 30, 2022 * |

* Any ***Conditional or Hold*** status will delay final hardcopy report sent date.

**Diskette Req.** SRP TXT, EQ EDD

**Criteria Requirement:** NJ GWQS

| Lab ID | Client Sample ID | Depth | Sampling Time | Matrix | Unit | Field pH/Temp |
|---|---|---|---|---|---|---|
| 03403-001 | MW11D | NA | 06/09/22@13:50 | Aqueous | ug/L (ppb) | |
| 03403-002 | MW10D | NA | 06/09/22@15:25 | Aqueous | ug/L (ppb) | |
| 03403-003 | FIELD BLANK | NA | 06/09/22@14:01 | Aqueous | ug/L (ppb) | |
| 03403-004 | TRIP BLANK | NA | 06/09/22 | Aqueous | ug/L (ppb) | |

* No Cert = IAL does not hold certification for this test/method

| Sample # | Test | Status | Analytical Method | TAT | Holding Time Expires |
|---|---|---|---|---|---|
| 001 | TCL VO + 15 | Analyze | 8260D | STD/2 WKS | 6/23/2022 |
| 002 | TCL VO + 15 | Analyze | 8260D | STD/2 WKS | 6/23/2022 |
| 003 | TCL VO + 15 | Analyze | 8260D | STD/2 WKS | 6/23/2022 |
| 004 | TCL VO | Analyze | 8260D | STD/2 WKS | 6/23/2022 |



273 Franklin Road
Randolph, NJ 07869
Phone: 973 361 4252
www.ialonline.com

## SAMPLE RECEIPT VERIFICATION

CASE NO: **E 22** **03403** CLIENT: EWMA

COOLER TEMPERATURE: 2° - 6°C: ✓ ( See Chain of Custody)

COC: (COMPLETE) / INCOMPLETE **Comments**

**KEY**
✓ = YES/NA
✗ = NO

VOA received: ☐ Encore ☐ IGW - Methanol
(check one) ☐ Terra Core ☐ No Preservative

| | | |
|---|---|---|
| ✓ | Bottles Intact | |
| ✓ | no-Missing Bottles | |
| ✓ | no-Extra Bottles | |
| ✓ | Sufficient Sample Volume | |
| ✓ | no-headspace/bubbles in VOs | |
| ✓ | Labels intact/correct | |
| ✗ | pH Check[1] (refer to Receipt pH Log) | |
| ✓ | Correct bottles/preservative | |
| ✓ | Sufficient Holding/Prep Time[1] | |
| ☐ | Multiphasic Sample | |
| ☐ | Sample to be Subcontracted | |
| ✓ | **Chain of Custody is Clear** | |

[1] All samples with "Analyze Immediately" holding times will be analyzed by this laboratory past the holding time. This includes but is not limited to the following tests: pH, Temperature, Free Residual Chlorine, Total Residual Chlorine, Dissolved Oxygen, Sulfite.

ADDITIONAL COMMENTS:

SAMPLE(S) VERIFIED BY: INITIAL [ ] DATE 6/9/22

**CORRECTIVE ACTION REQUIRED:** **YES** ☐ (SEE BELOW) **NO** ☐

If COC is **NOT** clear, ***STOP*** until you get client to authorize/clarify work.

CLIENT NOTIFIED: YES ☐ Date/ Time: _____ NO ☐
PROJECT CONTACT:
SUBCONTRACTED LAB:
DATE SHIPPED:

ADDITIONAL COMMENTS:

VERIFIED/TAKEN BY: INITIAL [ ] DATE 6.10.22

Rev 2 2/11/2021

# *Laboratory Custody Chronicle*

***IAL Case No.***
**E22-03403**

***Client*** EWMA - HQ

***Project*** SWIVELIER - 202530

***Received On*** 6/ 9/2022@16:35

| **Department: Volatiles** | | | ***Prep. Date*** | ***Analyst*** | ***Analysis Date*** | ***Analyst*** |
|---|---|---|---|---|---|---|
| TCL VO | 03403-004 | Aqueous | n/a | n/a | 6/17/22 | Barbara |
| TCL VO + 15 | -001 | Aqueous | n/a | n/a | 6/17/22 | Barbara |
| " | -002 | " | n/a | n/a | 6/17/22 | Barbara |
| " | -003 | " | n/a | n/a | 6/17/22 | Barbara |



NOTE: All soil, sediment, sludge, and solid samples are reported on a dry-weight basis.

*Integrated Analytical Labs ~ 273 Franklin Road, Randolph, NJ 07869 ~ (973) 361-4252*

**LAST PAGE OF DOCUMENT**

# Periodic Review Report – Review Period July 2021 to November 2022

*Property Known As:*

**Swivelier Company**
**33 Route 304**
**Nanuet, Rockland County, New York 10954**
**NYSDEC Site Nos. 3-44-036 & V00520**
**EWMA Project No. 202530**

Appendix 4 – Purge Guides

November 2022

100 Misty Lane
Parsippany, NJ
(973) 560-1400

**Job Name:** Former Swivelier Site
**Job Number:** 202530
**Personnel:** MaryBeth J & Matt G.

**Weather:** Sunny 70's
**Date:** 6/1/2022 & 6/9/2022

| WELL INFORMATION | MW-10D | MW-11D | MW-13D |
|---|---|---|---|
| PID (ppm): | 0.0 | 0.0 | 0.0 |
| Depth to Product (feet): | NA | NA | NA |
| Depth of Well (feet): | 77.45 | 123.09 | 110.00 |
| Depth to Top of Screen (feet): | | | |
| Depth to Water (feet) | 10.80 | 10.65 | 10.12 |
| Well Diameter (inches): | 4 | 6 | 6 |
| Volume in Well (gal): | 43.52 | 165.17 | 146.72 |
| **PRE - PURGE DATA** | | | |
| Purge Start: | 14:15 | 11:15 | 9:50 |
| Temperature (deg. C): | 15.43 | 15.62 | 15.71 |
| pH: | 7.61 | 9.72 | 7.13 |
| ORP (mV) | 161.0 | -85.0 | -53 |
| Specific Conductivity: | 1.070 | 0.444 | 1.94 |
| Turbidity (NTU) | 20.7 | 189.0 | 95.6 |
| Dissolved Oxygen (mg/l): | 6.23 | 5.18 | 4.28 |
| Purge End: | 15:21 | 13:46 | 15:10 |
| Elapsed Time: | 1:06 | 2:31 | 5:20 |
| **POST-PURGE DATA** | | | |
| Depth to Water (feet): | 68.00 | 59.37 | 15.15 |
| Temperature (deg. C): | 16.98 | 15.37 | 17.67 |
| pH: | 7.35 | 8.25 | 7.25 |
| ORP (mV) | 164.0 | -157.0 | -36 |
| Specific Conductivity: | 1.130 | 0.445 | 1.640 |
| Turbidity (NTU) | 9.7 | 136.0 | 82.6 |
| Dissolved Oxygen (mg/l): | 5.68 | 0.40 | 9.72 |
| Minimum Purge Vol. Req. (gal): | 130.6 | 495.5 | 440.2 |
| Rate of Purge: (gal/min) | 2.00 | 3.00 | 1.50 |
| Actual Total Volume Purged (gal): | 132.00 | 453.00 | 480.00 |
| Purge Method: | Redi-Flow | Redi-Flow | Geo-Sub |
| **SAMPLE DATA** | | | |
| Sample Time: | 15:25 | 13:50 | 15:15 |
| Sample Method: | pump | pump | pump |
| Depth to Water (feet): | 68.12 | 59.47 | 15.13 |
| Temperature (deg. C): | 17.01 | 15.38 | 15.17 |
| pH: | 7.34 | 8.31 | 7.11 |
| ORP (mV) | 163 | -154 | -30 |
| Specific Conductivity: | 1.13 | 0.442 | 1.63 |
| Turbidity (NTU) | 9.6 | 147 | 71.9 |
| Dissolved Oxygen (mg/l): | 5.35 | 0.00 | 10.18 |
| Odor: | none | none | none |
| Turbidity: | clear | Slightly Turbid | cloudy |
| Drawdown: (ft) | 57.20 | 48.72 | 5.03 |

**NOTES:**
ND = Non-Detect
Dry - No water/Not enough water to purge
NA - No data collected