

Phase II Environmental Site Assessment

211 and 213 East Broadway Street
Stanwood, Cedar County, Iowa

United States Environmental Protection Agency – Region 7
Brownfields Assessment Grant: BF97782001
Terracon Project No. 07207086

January 14, 2022



Prepared for:
East Central Intergovernmental Association (ECIA)
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&
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Materials



January 14, 2022

East Central Iowa Intergovernmental Association
7600 Commerce Park
Dubuque, IA 52002-9673

Attn: Ms. Dawn Danielson
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Re: Phase II Environmental Site Assessment for Brownfields
ECIA Brownfields Assessment Services
211 & 213 East Broadway Street
Stanwood, Cedar County, Iowa 52337
Terracon Project No. 07207086

Dear Ms. Danielson:

Terracon Consultants, Inc. (Terracon) is pleased to submit our report for the Phase II Environmental Site Assessment completed at the site referenced above. The report presents information and data obtained during field activities which included the advancement of soil borings and the collection of soil and groundwater samples for chemical analysis. Terracon conducted this investigation in general accordance with Property Specific Sampling and Analysis Plan dated September 29, 2021.

We appreciate the opportunity to perform these services for you. If there are any questions regarding this report or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,
Terracon Consultants, Inc.

Benjamin M. LaPointe, CHMM
Environmental Department Manager

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PHASE II ENVIRONMENTAL SITE ASSESSMENT ECIA BROWNFIELDS ASSESSMENT SERVICES

211 and 213 East Broadway Street
Stanwood, Cedar County, Iowa

Terracon Project No. 07207086
January 14, 2022

1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon) conducted a Phase II Environmental Site Assessment at the site located at 211 and 213 East Broadway Street, Stanwood, Iowa, in accordance the EPA approved Property Specific Sampling and Analysis Plan (PSAP) dated September 29, 2021 and the Generic Quality Assurance Project Plan (QAPP), dated April 7, 2021.

The site is an approximate 0.12-acre lot that is improved with two (2), 2-story structures. The structure located at 211 Broadway Street is approximately 2,080-square feet. The structure located at 213 Broadway Street approximately 3,780-square feet. A topographic map depicting the general site location is included as **Exhibit 1** provided in **Appendix A**. The current site layout is provided as **Exhibit 2** in **Appendix A**.

The onsite structures are currently unoccupied. Terracon understands that the City of Stanwood anticipates razing the structures and redeveloping the site as green space or as an extension of adjacent city structures.

1.1 Background

A Phase I Environmental Site Assessment (ESA) was conducted at the site in March 2021 in accordance with ASTM E1527-13 to identify recognized environmental conditions associated with the property. The following recognized environmental conditions were identified during the Phase I ESA.

- A former oil and coal storage and oil containment area abutted the site to the south along the adjoining railway during the 1910s.
- The adjoining site west of the property had a former 500-gallon underground storage tank removed in 1987.

1.2 Objectives

The objective of this Phase II Environmental Site Assessment is to determine whether petroleum contaminated soil and/or groundwater are of concern for the site in regard to potential human or environment exposure and/or specific waste handling and disposal needs during redevelopment activities.

2.0 ASSESSMENT ACTIVITIES & METHODS

The Phase II field activities were conducted on December 13, 2021. Field activities included the advancement of three soil borings for the collection of soil and groundwater samples as summarized below. The approximate soil boring locations and areas of concern are shown on **Exhibit 2** provided in **Appendix A**.

The property-specific sampling design was set forth in the Property Specific Sampling and Analysis Plan (PSAP) previously approved by EPA 7. Terracon completed the following tasks as part of the Phase II ESA.

- Advancement of three borings, designated B-1 through B-3, at the locations shown on Exhibit 2 in Appendix A
- Continuous field screening of soils from the probe cores using a photo-ionization detector (PID)
- Collection of soil samples for laboratory analysis; soil samples were collected from a shallow depth and a deeper interval based on the field screening results and/or other field observations
- Collection of groundwater samples from the temporary wells using a peristaltic pump
- Submittal of soil and groundwater samples to Keystone Laboratories, Inc. for analysis

2.1 Methodology

Terracon followed Terracon Standard Operating Procedures (TSOPs) as provided with the EPA Region 7 approved Generic QAPP, dated April 7, 2021, for sampling, physical measurements, equipment cleaning, and equipment calibration. Terracon recorded discrepancies, clarifications, and corrective actions for QA/QC, if applicable, in the field logbook.

Soil Borings and Soil Sampling

Soil borings B-1 through B-3 were advanced to 20 – 24 feet below ground surface (bgs) using a truck mounted hydraulic direct push drill rig (Geoprobe®). General soil descriptions including color, relative moisture content, specific boring depths, and pertinent observations are presented on the soil boring logs provided in **Appendix B**.

Each soil core was field-screened for organic vapors continuously using closed container headspace methods and a photo-ionization detector (PID). Vapor measurements were recorded on the field soil boring logs.

Two soil samples were collected from each soil boring. One soil sample was collected from the 2-foot interval at surficial/near surface soils. The second soil sample was collected from the 2-foot interval most likely impacted based on highest PID readings and field observations. An additional third soil sample was collected from boring B-2. Soil sample depth intervals are summarized in **Table 2-1** below.

Table 2-1 Sampling Program

Boring Number	Sample Interval Depths (feet)
B-1	(0-2), (22-24)
B-2	(0-2), (8-10), (16-18)
B-3	(0-2), (18-20)

Temporary Monitoring Wells and Sampling

Based on clay soils encountered while advancing soil borings and slow recharge rates, the groundwater table was not observed in soil cores collected; however, boreholes filled with groundwater after advancing the soil borings. Static groundwater levels were measured at approximately 7 feet below ground surface in each bore hole. Soil borings were converted into temporary groundwater monitoring wells for collection of groundwater samples. The temporary monitoring wells were constructed utilizing 1-inch diameter, 0.010-inch machine slotted poly-vinyl chloride (PVC) well screen with a threaded bottom cap followed by a 1-inch diameter, threaded, flush-joint PVC riser pipe to the ground surface.

Each groundwater sample was collected using a peristaltic pump and dedicated disposable tubing. A portion of each groundwater sample collected was field filtered using dedicated, disposable 0.45-micron groundwater filters for laboratory analysis of dissolved metals. The sample for TMW-3F appeared to have failed when the sample stream became clouded mid sampling. Groundwater sample designations are summarized in **Table 2-2** below.

Table 2-2 Groundwater Samples

Boring Number	Groundwater Sample Designations	Depth to Static Groundwater Below Ground Surface (bgs)
B-1	TMW-1 TMW-1F*	7-ft
B-2	TMW-2 TMW-2F* WDUP-1 WDUP-1F*	7-ft
B-3	TMW-3 TMW-3F*	7-ft

* indicates field filtered sample

2.2 Deviations

Groundwater samples were collected using a peristaltic pump, new dedicated polyethylene and laboratory provided glassware. This approach eliminated the need for decontamination of sampling equipment.

Two soil samples were scheduled to be collected from above the saturated zone. Due to the initial slow infiltrations from groundwater, the second soil sample was collected from below the static groundwater level. Since static groundwater levels were determined to average approximately 7 feet below grade, the collection of the second soil sample from below the static groundwater table at the time of sampling did not affect project decisions.

The soil core interval intended for the field duplicate soil sampling was not duplicate sampled due to miss identification of samples collected in regard to duplicate/original in the field. Therefore, the duplicate soil sample (DUP-1) serves as an original sample from soil boring B2 at an interval between 8-10 feet in depth, which does not allow for laboratory precision analysis via field duplicate analysis. However, laboratory precision analysis is also conducted via the relative percent difference of the matrix spike and matrix spike duplicate (MS/MSD) samples. Analysis of the MS/MSD determined that the data precision is valid and usable.

There were no other deviations from the approved PSAP.

3.0 DATA FINDINGS

3.1 Physical Measurements and Field Screening

Site-specific soil lithology consisted of semi-moist silty lean clay, which extended from the near surface (immediately below surface fill material) to the termination depths of each of the soil borings advanced. Photo-ionizable vapors were not detected while screening onsite soils using a PID. PID measurements are recorded on soil borings logs provided in **Appendix B**. Observable indicators of a release (i.e. soil staining, oil sheen, free product, odors, etc.) were not observed while advancing soil borings at the site.

3.2 Laboratory Analysis

The soil and groundwater samples collected were analyzed according to the sampling program provided in the site-specific sampling and analysis plan (P07207086 T12) dated September 29, 2021. Contaminants of concern in the sampling program were based on RECs identified in Terracon's Phase I ESA for the site dated July 22, 2021. The laboratory analysis findings are discussed below and summarized in **Table 1** and **Table 2** provided in **Appendix C**. The laboratory analytical reports and executed chain-of-custody forms are provided in **Appendix D**.

Soil and groundwater samples were analyzed for concentrations of:

- Volatile organic compounds (VOCs) by EPA Method 8260,
- Total Extractable Hydrocarbons (TEH) by Iowa Method OA-2,
- RCRA Metals via EPA Method 6010, 7470, 7471

3.2.1 Soil Samples

Concentrations of detected contaminants of concern in soil samples collected is discussed below and summarized in **Table 1**, provided in **Appendix C**.

Volatile Organic Compounds

Trichloroethylene (TCE) was detected in soil sample B-3 (0-2); however, the concentration (0.002 mg/kg) did not exceed IDNR's SWS for TCE.

Other VOCs did not exceed laboratory reporting limits in soil samples collected.

Total Extractable Hydrocarbons

Total extractable hydrocarbons (TEH) classified within the waste oil range were detected in soil samples B-1 (0-2), B2 (0-2), B-3 (0-2) and B3 (18-20). However, concentrations were below their respective IDNR's SWS.

RCRA Metals

Concentrations of detected metals that exceed applicable SWSs in soil samples collected are summarized in **Table 3-1** below. The SWS for residential soil are included on **Table 1** provided **Appendix C** in for comparison.

Table 3-1 – Metals Concentrations Reported for Soil Samples (mg/kg)

Parameter	B-1 (0-2')	B-1 (22-24')	B-2 (0-2')	B-2 (16-18')	B-3 (0-2')	B-2 (18-20')	Dup-1 (B-2, 8-10)	SWS
Arsenic	4	3.2	<10.8	3.7	<2.0	3.4	6.6	1.9
Lead	61.8	7.3	500	8	20.2	8.5	7.7	400

Arsenic was detected at concentrations that exceeded IDNR’s SWS for soil in soil samples B-1 through B-3. Lead was also detected at concentrations exceeding IDNR’s SWS in soil sample B-2 (0-2 feet) collected from surface fill material at the site. Note: the method reporting limit was elevated in samples B-2 (0-2) and B-3 (0-2) due laboratory matrix interferences. Refer to the Laboratory Analytical Report provided in **Appendix B** to review detected concentrations that do not exceed applicable SWSs.

3.2.2 Groundwater Samples

Concentrations of detected contaminants of concern in groundwater samples collected is discussed below and summarized in **Table 2**, provided in **Appendix C**. **Table 2** includes the SWS for a protected and non-protected groundwater sources for comparison.

Volatile Organic Compounds

The petroleum compound methyl-tertiary-butyl-ether (MTBE) was detected in groundwater samples TMW-3; however, the concentration (0.0198 mg/L) does not exceed IDNR’s SWS. Tetrachloroethylene was detected in the groundwater sample TMW-2, however the concentration (0.0015 mg/L) does not exceed IDNR’s SWS in groundwater.

Other VOCs did not exceed laboratory reporting limits in groundwater samples collected.

Total Extractable Hydrocarbons

Total extractable hydrocarbons (TEH) classified within the diesel range and TEH classified within the waste oil range were below laboratory reporting limits.

RCRA Metals

The concentrations of arsenic, chromium, and lead in unfiltered groundwater samples TMW-1, TMW-2, and TMW-3 exceed IDNR’s SWS. Barium exceeded IDNR’s SWS in the groundwater sample collected from TMW-2.

The concentration of dissolved chromium was detected TMW-3. However, dissolved analysis did

not exceed an IDNR SWS for the metals analyzed. This indicates that the total metals results are likely associated with solids entrained in the sample stream that can be removed by filtration.

Other contaminants of concern did not exceed laboratory detection limits and/or Iowa SWS in the groundwater samples collected.

4.0 DATA VALIDATION & VERIFICATION (QAPP SECTION D1 & D2)

4.1 Field Methods and Measurements Review

To validate the quality and usability of data findings, a review of field activities outcomes included the following:

Table 4-1 – Field Methods and Measurements Review Summary

Review Checklist	Validated	Descriptions
Soil boring and sampling design was conducted in accordance with the approved PSAP	Yes	
Sample collection methods were conducted in accordance to Terracon Standard Operating Procedures (TSOPs) as provided in the Generic QAPP.	Yes	
Quality Assurance / Quality Control (QA/QC) Samples were collected in accordance to TSOPs.	No	The soil intended for the field duplicate sampling was not duplicate sampled due to miss identification of samples collected in regard to duplicate/original. Therefore, the duplicate soil sample (DUP-1) serves as an original sample and does not allow for laboratory precision analysis via a duplicate sample. Laboratory precision analysis is also conducted via the relative percent difference of the matrix spike and matrix spike duplicate (MS/MSD) samples. Analysis of the MS/MSD determined that the data precision is valid and usable.
Sampling is considered complete if 100% of the soil samples are obtained pursuant to the PSAP design	Yes	
Sampling is considered complete if 100% of the groundwater samples were obtained pursuant to the PSAP design	Yes	
Soil sampling is considered representative if 50% of the sample interval for soil was recovered and submitted	No	Soil sample B3(0-2) was collected from a soil core that had a 25% recovery. However, the quantity recovered was adequate for laboratory analysis; therefore, is considered representative of surface soils at the sample location. Other soil samples intervals submitted for laboratory analysis had recoveries between 75% and 100% and are representative of intervals collected.

Groundwater sampling is considered representative if 100% of the laboratory volume for groundwater samples is extracted and submitted	Yes	
Chain of custody represents samples collected and submitted and laboratory analysis requests were made pursuant to the PSAP design	Yes	
Holding and transport times were met for the sample to be considered valid	Yes	
Calibration of instruments at bench mobilization and in the field from instrument records and field logs specific to the property eligible and assessed	Yes	
Detectable concentrations of VOCs were not detected in the Trip Blank QA/QC sample, which would indicate the potential for cross-contamination between samples or other breach of sample integrity during transport.	Yes	

4.2 Laboratory Methods and Measurements Review

Laboratory Validation of Analytical Data

The laboratory is responsible for validating data in accordance with laboratory standard operating procedures. Discussions and notes regarding laboratory data validation; including but not limited to, laboratory surrogate recoveries, matrix spike / matrix spike duplicate (MS/MSD), qualifying statements, etc.; is provided in the laboratory report included as **Appendix D**.

Field Duplicate Sampling

In addition to laboratory provided validation data, Terracon assessed laboratory precision via a duplicate groundwater sample. Precision is evaluated using the relative percent difference (RPD) between concentrations reported for an actual sample and its duplicate. A duplicate groundwater sample was collected from temporary monitor wells TMW-2 (WDUP-1). A detectable concentration of TCE (0.0015 mg/L) was encountered in groundwater sample TMW-2. However, TCE did not exceed laboratory reporting limits in the duplicate sample. The concentrations of TCE in groundwater sample TMW-2 is too small to represent other than negligible difference and is therefore considered valid. Other VOCs in groundwater sample TMW-2 and its duplicate were below the laboratory’s reporting limits.

The Relative percent difference of RCRA metals are within 20% and meet the precision goals as provided in USEPA Region 7 approved Generic QAPP (QAPP Section A7.2.1) with the exception of barium (23% RPD) and dissolved arsenic (33% RPD). However, the quantity difference for barium is 1 mg/L and dissolved arsenic is 0.001 mg/L; the actual quantiles are too small to determine significant difference in precision and duplicate analysis is considered adequate for the

purpose of this assessment. As noted in Section 2.2 above, soil samples collected did not allow for laboratory precision analysis via field duplicate analysis.

Reporting Limits

To validate appropriate sensitivity of the laboratory analysis the laboratory reporting limit must not exceed Iowa SWS. The laboratory reporting limit is the lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The Reporting Limits used by the laboratory were generally below the primary action limits (SWS) used for this Phase II ESA. Analytes that were not measured to exceed the Reporting Limit or Method Detection Limit in soil and groundwater samples were assumed to not be present.

5.0 DATA EVALUATION (QAPP SECTION A7.3)

5.1 Decision Rule

The City intended to determine whether this property is or is not impacted relative to the IDNR statewide standards. Based on the outcome of the decision, there are two potential Project actions. They are as follows:

- If petroleum contaminants of concern in soil and/or groundwater do not exceed SWS, the site would not be considered environmentally impaired in regard to contaminants of concern assessed during this Phase II ESA. ECIA and the City can consider it feasible for redevelopment per the Iowa Land Recycling Program (LRP) (567 IAC 135) without considering remedy of soils and/or groundwater. Further assessment of contaminants of concern in soil/groundwater will not be necessary.

or,

- If contaminants of concern in soil and/or groundwater exceed SWS, then potential exposure concerns associated with the SWS exceedances would require further evaluation for potential human and/or environmental exposures.

5.2 Project Data Decisions

Data Exceeded SWS for arsenic and lead in shallow soils at the site.

5.2.1 Project Decision – Soils

Based on measured parameters in soil, levels of arsenic contamination exceed applicable SWSs in all soil samples and lead exceeded the SWS at B-2, therefore site conditions may not be suitable at this time for unrestricted land use without remedial efforts.

5.2.2 Project Decision - Groundwater

Based on measured parameters in dissolved groundwater analysis, chemicals of concern did not exceed a SWS, therefore conditions may be suitable at this time for unrestricted land use.

5.3 Exposure Risk Evaluation

The Phase II ESA soil and groundwater analytical results were evaluated for exposure risk using the IDNR LRP risk-based Statewide Standards (SWS). Maximum reported concentrations for detected analytes were entered into IDNR's cumulative risk calculator, and the results were evaluated for the following conditions.

- Impacts in soil considering site residents
- Impacts in soil considering site workers
- Impacts in groundwater considering site residents
- Impacts in groundwater considering site workers

The comparisons were made with the following considerations.

- The property is not enrolled in the LRP, and this comparison is for planning purposes only.
- The property at the time of assessment does not have restricted access to control exposures; there are no existing significant security structures, engineered barriers, or remoteness of location pursuant to the LRP rules.

5.3.1 Cumulative Risk Calculator Results¹

Terracon entered the maximum concentrations for soil and dissolved in groundwater and ran the calculator for the above scenarios. Results were as follows:

Soil Calculator Results

	<u>Cancer Risk</u>	<u>Non-Cancer Risk</u>
Residential Use	0.28	1.8
Site Worker	0.06	0.56
Construction Worker	0.01	0.36

Dissolved Groundwater Calculator Results

	<u>Cancer Risk</u>	<u>Non-Cancer Risk</u>
Residential Use	0.5	0.68
Site Worker	0.24	0.17
Construction Worker	<i>Not run since most conservative pathway passes.</i>	

¹ Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.

6.0 CONCLUSIONS AND RECOMMENDATIONS

This Phase II ESA was conducted to assess whether petroleum and/or hazardous substance contaminants of concern associated with the identified RECs are present at the site, to identify potential human or environment exposure concerns associated with identified contaminants, and to provide information to the landowner and redevelopment contractor regarding federal, state, and local regulations associated with site redevelopment and use (i.e. handling and disposal of contaminated media).

Conclusions

Contaminants of concern in soil and groundwater samples collected that exceed IDNR's SWS for soil and groundwater include various petroleum compounds and metals. Therefore, soil and groundwater data collected represent the following exposure concerns:

1. Occupant dermal/ingestion exposure (surface contamination)
2. Contractor dermal/ingestion exposure (during excavation)
3. Groundwater ingestion exposure based on total analysis only

Potential exposure concerns associated with the SWS exceedances listed above will require additional assessment and/or mitigation before or as part of site development activities to adequately address potential exposures.

Concentrations of VOCs were not encountered in soil and groundwater samples collected at levels exceeding Iowa SWS; therefore, VOCs do not represent a vapor intrusion concern into proposed onsite structures.

Recommendations

- Engineered controls should be implemented and maintained to mitigate the potential of dermal/ingestion exposure to site occupants. Terracon recommends that impacted soils not removed from the site during redevelopment be capped with an impermeable surface (i.e. asphalt/concrete pavement, concrete foundation, and/or 3 feet of "uncontaminated" clay) to mitigate the potential for human and/or environmental exposures to impacted soils.
- To eliminate the potential for groundwater ingestion exposure concerns, groundwater resource wells should not be constructed at the site. The first saturated aquifer is likely a non-protected groundwater and would not likely be used for consumptive applications. Extraction of groundwater below the site should not be conducted for any purpose (i.e. consumption, gardening, commercial use, agriculture, etc.) except for the purpose of environmental investigation and/or remediation activities, if warranted.
- Excavation of impacted soils at the site should be done in a manner that does not present a threat to human health or the environment, and which limits potential for spread of

contaminants. Excavated impacted soils should not be relocated as backfill to other areas onsite or offsite. Excavated soil waste should be disposed per local, state, and federal regulations at a municipal landfill permitted to accept the waste.

- **Soil Management Plan:** Terracon understands that proposed redevelopment at the site will include excavation activities and disposal of excavated media. Redevelopment contractors are potentially at risk of exposure to contaminated soil and groundwater during redevelopment activities. Disposal of impacted excavated media will also be subject to local disposal regulations. Because of these factors, Terracon recommends that a site-specific soil and groundwater management plan be prepared prior to groundbreaking activities.

The purpose of the soil and groundwater management plan is to provide information necessary for redevelopment contractors to plan appropriate site development activities and incorporate health and safety into their bid package for the construction. The plan will discuss appropriate onsite soil profiling/screening, proper handling, best practices, backfilling, and disposal of excavated soil during site redevelopment activities.

7.0 REGULATORY SETTING

7.1 IDNR Land Recycling Program

The LRP is a voluntary, risk-based cleanup program for properties with environmental impacts. The LRP is designed to meet the dual objectives of addressing contaminated sites and promoting the redevelopment of these sites. The primary means of meeting these objectives are by encouraging voluntary participation to address contamination by establishing a set of risk-based response action standards, and by providing a measure of liability protection to participants and future property owners. Iowa has finalized a MOA with the EPA. Under the MOA, the EPA agrees not to act at sites enrolled in the LRP.

7.2 Iowa Statewide Comparison

The LRP establishes statewide standards that represent concentrations of contaminants in specific media of an affected area. These are values at which normal, unrestricted exposure through a specific exposure pathway are considered unlikely to pose a threat to human health, safety, or the environment. Risk-based contaminant concentrations for soil and groundwater are calculated using a formula that considers chemical specific properties concerning toxicity and assumptions about human exposure. The formula is used for each contaminant at a site, except for lead, which has default values specified in the regulations.

The comparison of reported chemical concentrations to the statewide standards is the primary project decision.

7.3 Statewide Soil Standards

Equation (1) is used to calculate the risk-based concentrations for compounds (other than lead).

$$C = \frac{RF \times AT \times 365 \text{ days/year}}{Abs \times [(ER_c \times EF_c \times ED_c) \div BW_c + (ER_a \times EF_a \times ED_a) \div BW_a] \times CF} \quad (1)$$

Where:

- C = Risk-based concentration of contaminant
- RF = Risk factor, which differs for carcinogenic and noncarcinogenic effects
- AT = Averaging time (in years)
- Abs = Absorption factor
- ER_c = Exposure rate by a child
- EF_c = Exposure frequency by a child
- ED_c = Exposure duration by a child
- BW_c = Body weight of exposed child
- ER_a = Exposure rate by an adult
- EF_a = Exposure frequency by an adult
- ED_a = Exposure duration by an adult
- BW_a = Body weight of exposed adult
- CF = Conversion Factor

For lead, the IDNR has established a statewide standard of 400 mg/kg and a non-residential, site-specific standard of 1,100 mg/kg for soil less than two feet in depth. For non-residential site-specific standards for soil deeper than two feet and residential site-specific standards for soil deeper than ten feet, the IDNR standard is based on EPA's Exposure Model for Assessing Risk Associated with Adult Exposures to Lead in Soil.

7.4 Statewide Groundwater Standards

Statewide groundwater standards are determined as being:

- The Safe Drinking Water Act (SDWA) Maximum Contamination Limit (MCL) established by the EPA, if one exists, or
- If no enforceable MCL exists, the lifetime HAL, or
- If no MCL or HAL exists, the standard is calculated using Equation (1) with input variables specified in the rule.

The statewide groundwater standard for a non-protected groundwater source is based on a series of tests and iterations of the formula used for soil standards, with input values that are dependent on the properties of the specific compound being evaluated.

A Protected Groundwater Source is defined as "...a saturated bed, formation, or group of formations which has a hydraulic conductivity of at least 0.44 m/day and a TDS concentration of less than 2,500 mg/L." A Non-protected Groundwater Source is, by definition, a saturated bed, formation, or group of formations that has a hydraulic conductivity of less than 0.44 m/day or a TDS concentration in excess of 2,500 mg/L. The aquifer at the Site is conservatively assumed to be a Protected Groundwater Source; however, Terracon compared the Site chemistry in groundwater to statewide standards for both Protected and Non-protected Groundwater Sources.

The LRP requires multiple sampling and testing events before making the comparisons of groundwater chemistry to standards for final determination of compliance. The period of monitoring may vary dependent on IDNR approvals if enrolled in the LRP. A "favorable" comparison is not necessarily sufficient for enrollment and closure in the LRP.

7.5 Iowa Site-Specific Comparison – Cumulative Risk Calculator

The statewide standards assume that the property will be restored to unrestricted land use. They are protective of the most sensitive member of the population for the public exposures defined in the LRP rules. In general, this is sufficient for redevelopment or restoration for residential land use and residential occupancy by children.

The City may not require restoration to levels of chemical risk so that future residence by families can occur. Land use for commercial/industrial use must also be considered and is in fact often the primary consideration for reuse. The LRP rules recognize these considerations and include processes whereby site-specific standards can be determined for property-specific conditions of residential or non-residential land use. For sites in the LRP, IDNR requires parties to use its on-line cumulative risk calculator (<http://programs.iowadnr.com/riskcalc/pages/calculator.aspx>) to achieve compliance. The risk calculator allows for calculation of cumulative risk for residents, site workers, and site construction workers resulting from hypothetical exposure to contaminated groundwater, soil, or air. Site-specific data are entered into the calculator, and if the values of the "cumulative cancer risk" or non-carcinogenic "sum" are less than or equal to 1.00, the site is within acceptable risk levels. If the values exceed 1.00, IDNR allows parties to establish institutional and/or technological controls under sub rules 567 IAC 137.6(10) and (11) to prevent exposure to contaminants.

7.6 Application of the Standards

The user of this document must understand the limited applicability of the standards adopted under the authority of the LRP. The standards were developed within the narrow focus and constraints of the LRP. While the standards are based on a consideration of risk, they are different from other "risk-based" approaches.

The LRP does not contain standards that are established based on the migration of contaminants from one medium to another, which then becomes the basis for subsequent exposure. This does

not mean the IDNR has no concern for these cross-media transfers. IDNR chooses to address them through direct measurement of the medium in which the exposure takes place or through the calculation of such cross-media transfer standards only when it is determined that such an approach is appropriate in a site-specific context. The intent is to avoid the application of needlessly restrictive standards to situations where they are not a relevant concern. Implicit in the final application of the standards is IDNR concurrence that the standards applied in any given situation address all exposure pathways that are deemed to be of concern. This can only take place when the IDNR is adequately informed of the particulars of a situation. Without IDNR concurrence there should be no presumption that a standard is sufficiently protective or that it will meet the requirements of the LRP.

Most of the standards entail very specific exposure assumptions. Site-specific standards assume that institutional controls will be put in place in order to preserve those exposure assumptions (e.g., a prohibition of residential use or well installation). Implicit in the use of such standards is the assumption that the IDNR has evaluated the exposure assumptions, along with necessary institutional controls, and determined that they are appropriate to the situation.

As a result of the integral role of IDNR in determining and approving the appropriate use of the standards, they should not routinely be used for purposes outside of the LRP, including screening to determine whether a situation is a significant problem or whether it is reportable. Exceptions to this are the statewide standards for a Protected Groundwater Source. These standards may be used in lieu of action levels set by 567 IAC Chapter 133: *Rules for Determining Cleanup Actions and Responsible Parties*. This does not prevent IDNR from making use of the standards outside of the LRP when applicable and appropriate to projects under their supervision.

8.0 GENERAL COMMENTS

The analysis presented in this report is based upon data obtained from field activities and from other information discussed in this report. This report does not reflect any variations in subsurface stratigraphy that may occur between sampling locations or across the Site. Actual subsurface conditions may vary. The extent of such variations may not become evident without additional exploration.

This report is prepared for the exclusive use of ECIA and the City of Stanwood, Iowa for the specific application to this project and has been prepared in accordance with generally accepted environmental engineering practices. No warranties, express or implied, are intended or made. In the event any changes in nature or location of subsurface conditions as outlined in this report are observed, the conclusions contained in this report cannot be considered valid unless the changes are reviewed, and the conclusions of this report are modified or verified in writing by Terracon.

8.1 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the onsite activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable or not present during these services, and we cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this Phase II ESA. Subsurface conditions may vary from those encountered at specific borings or test pits or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

8.2 Reliance

ECIA and the City of Stanwood, Iowa are the principal end users of this information. Although the report is available for review by the public, further reliance by others is beyond the scope of the grant and EPA funding.

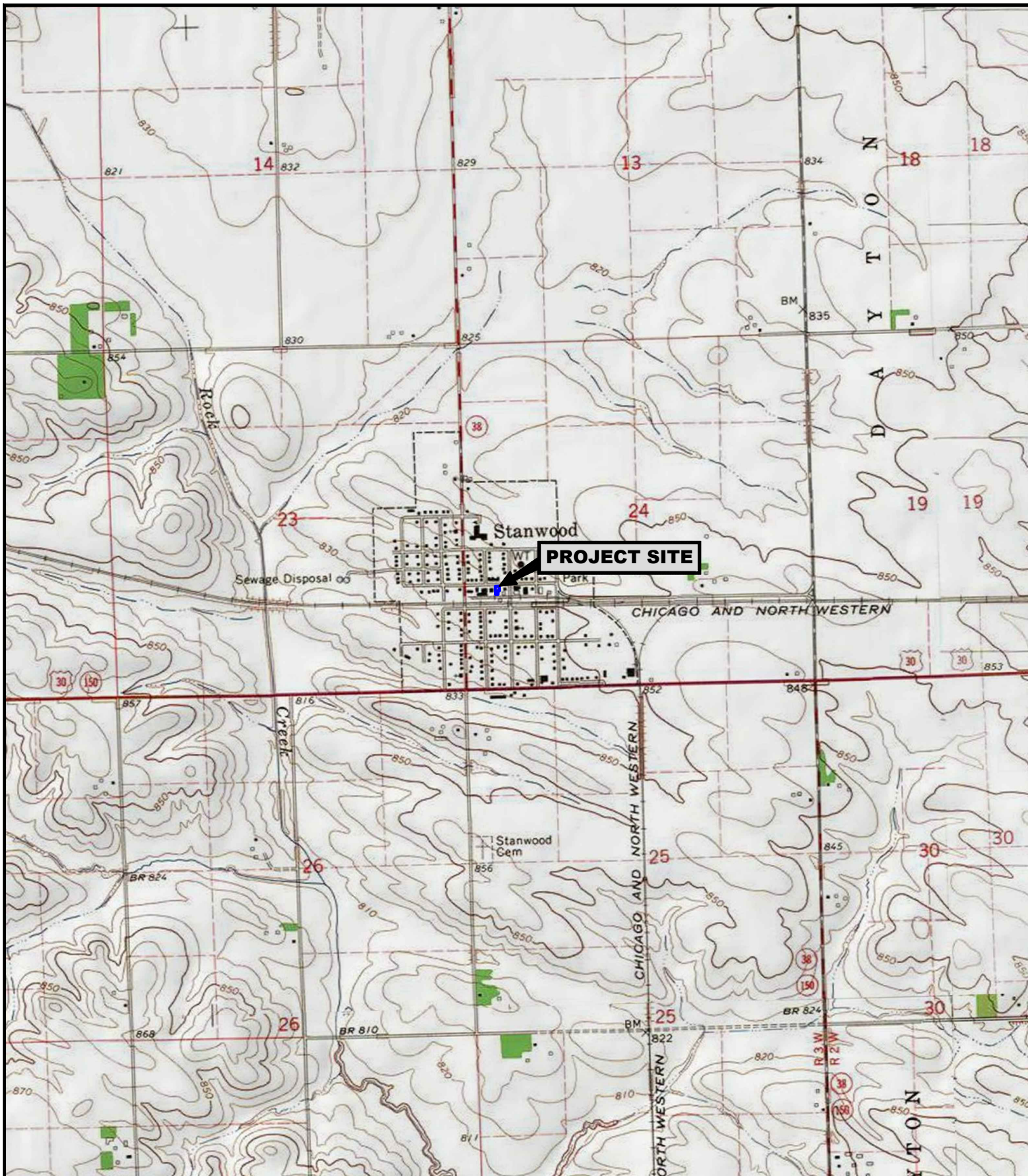
ECIA and/or the City of Stanwood, Iowa will make primary use of the data to aid in decision-making relative to considering properties for redevelopment. The data will not constitute the sole or final factor in the positive or negative feasibility determination for redevelopment. It is anticipated that this Phase II ESA is for preliminary characterization and, if needed, will be used as the basis for secondary phases of remedial investigation.

The information contained in this report is for the sole benefit of the ECIA and the City of Stanwood, Iowa in determining feasibility for redevelopment and restoration of the property. The information and funding expended to produce the information does not provide windfall or extraneous benefits to property owners.

APPENDIX A

Exhibit 1– Topographic Map

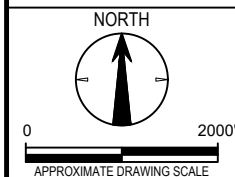
Exhibit 2– Soil Boring Locations Map



TOPO IMAGE FROM ARCGIS MAP SERVER
<http://services.arcgisonline.com/ArcGIS/services>

LEGEND

- - - - - BOUNDARY OF ASSESSED AREA



Project No:	Date:
07207086	3/24/2021
Project Mngr:	Drawn By:
JFC	JAL
File Name:	
07207086-01.dwg	
Layout Name:	
E1	

Terracon
 Consulting Engineers and Scientists

870 40TH AVENUE BETTENDORF, IOWA 52722
 PH. (563) 355-0702 FAX. (563) 355-4789

TOPOGRAPHIC SITE MAP
 PHASE I ENVIRONMENTAL SITE ASSESSMENT
 ECIA BROWNFIELDS
 211 & 213 EAST BROADWAY STREET
 STANWOOD, CEDAR COUNTY, IOWA

EXHIBIT
 1



AERIAL PHOTO FROM GOOGLE EARTH

LEGEND

- - - - - BOUNDARY OF ASSESSED AREA

NORTH

0 200'

APPROXIMATE DRAWING SCALE

Project No. 07207086	Date: 3/24/2021
Project Mng: JFC	Drawn By: JAL
File Name: 07207086-01.dwg	
Layout Name: E2	

Terracon
Consulting Engineers and Scientists

870 40TH AVENUE BETTENDORF, IOWA 52722
PH. (563) 355-0702 FAX. (563) 355-4789

Site Boring Plan	EXHIBIT
PHASE II ENVIRONMENTAL SITE ASSESSMENT ECIA BROWNFIELDS 211 & 213 EAST BROADWAY STREET STANWOOD, CEDAR COUNTY, IOWA	2


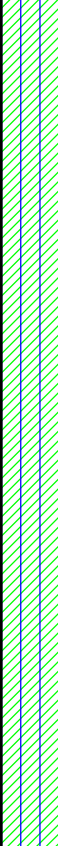

APPENDIX B
Boring Logs

BORING LOG NO. B-2


PROJECT: Stanwood Iowa Brownfields

CLIENT: ECIA & City of Stanwood

SITE: 211 and 213 East Broadway Street
Stanwood, Iowa

GRAPHIC LOG	LOCATION See Exhibit A-2	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	OVA/PID (ppm)	SOIL SAMPLE	PID (ppm)
	DEPTH MATERIAL DESCRIPTION							
	FILL , Approximately 6" of gravel FILL followed by 1.5' of gravel and trace brick FILL				75		X	0.0
	CL , brown, semi moist, silty, lean CLAY				75			0.0
	light brown below 5'	5			75			0.0
					75			0.0
	6" sand seam at 9' moist below 9'	10			75		X	0.0
					75			0.0
	grey with brown mottling below 13'	15			75			0.0
					75		X	0.0
					75			0.0
	Boring Terminated at 20 Feet	20						

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method: Direct Push	See Appendices for description of field procedures. See Appendices for description of laboratory procedures and additional data (if any).	Notes:	
Abandonment Method: Boring backfilled with Bentonite	See Appendices for explanation of symbols and abbreviations.		
WATER LEVEL OBSERVATIONS			
		Boring Started: 12-13-2021	Boring Completed: 12-13-2021
		Drill Rig: DR009	Logger:
		Project No.: 07207086	Exhibit: B-2

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ADEM SMART LOG BORING LOGS B-1 TO B-3 12-13-21.GPJ TERRACON_DATATEMPLATE.GDT 12/20/21

BORING LOG NO. B-3

PROJECT: Stanwood Iowa Brownfields

CLIENT: ECIA & City of Stanwood

SITE: 211 and 213 East Broadway Street
Stanwood, Iowa

GRAPHIC LOG	LOCATION See Exhibit A-2	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	OVA/PID (ppm)	SOIL SAMPLE	PID (ppm)
	DEPTH MATERIAL DESCRIPTION							
	<p>GRAVEL, Approximately 6" of gravel FILL followed by 1.5' of gravel and trace brick FILL</p>				25		X	0.0
	<p>CL, brown, semi moist, silty, lean CLAY</p>				25			0.0
			5			25		0.0
	<p>grey below 7' moist below 7'</p>			▽		25		0.0
						75		0.0
			10			75		0.0
	<p>light brown below 12'</p>					75		0.0
						75		0.0
	<p>grey below 14'</p>		15			75		0.0
						75		0.0
		20			75		X	0.0
<p>Boring Terminated at 20 Feet</p>								

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

<p>Advancement Method: Direct Push</p>	<p>See Appendices for description of field procedures. See Appendices for description of laboratory procedures and additional data (if any).</p>	<p>Notes:</p>	
<p>Abandonment Method: Boring backfilled with Bentonite</p>	<p>See Appendices for explanation of symbols and abbreviations.</p>		
<p>WATER LEVEL OBSERVATIONS</p>		<p>Boring Started: 12-13-2021</p>	<p>Boring Completed: 12-13-2021</p>
<p>▽</p>		<p>Drill Rig: DR009</p>	<p>Logger:</p>
		<p>Project No.: 07207086</p>	<p>Exhibit: B-3</p>

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ADEM SMART LOG BORING LOGS B-1 TO B-3 12-13-21.GPJ TERRACON_DATATEMPLATE.GDT 12/20/21

APPENDIX C
Analytical Results Summary Tables

Table 1 - Soil Analytical Results
ECIA Stanwood Iowa
211 and 213 East Broadway Street, Stanwood, Cedar County, Iowa

Analyte	Units	Iowa Statewide Standards (SWS)	B-1 0-2	B-1 22-24	B-2 0-2	B-2 16-18	B-3 0-2	B-3 18-20	DUP-1 B-2 8-10
		For Soil	12/14/2021	12/14/2021	12/14/2021	12/14/2021	12/14/2021	12/14/2021	12/14/2021
Volatile Organic Compounds									
Trichloroethylene	mg/kg	67	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002
RCRA 8 Metals									
Arsenic	mg/kg	1.9	4	3.2	<10.8**	3.7	<2.0**	3.4	6.6
Barium	mg/kg	15000	106	113	98.4	87.7	24.9	128	162
Cadmium	mg/kg	70	BRL	BRL	BRL	BRL	BRL	BRL	0.4
Chromium (Total)	mg/kg	190	8.9	12.7	38.6	15.4	2.2	15.2	15
Lead	mg/kg	400	61.8	7.3	500	8	20.2	8.5	7.7
Mercury	mg/kg	23	0.22	BRL	0.23	BRL	0.12	BRL	BRL
Selenium	mg/kg	390	BRL	BRL	7	16.5	17.6	17.6	BRL
Silver	mg/kg	370	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Total Extractable Hydrocarbons (TEH)									
Gasoline	mg/kg	---	38	BRL	186	BRL	164	BRL	BRL
Diesel	mg/kg	28000	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Waste Oil	mg/kg	9400	62	47.1	149	BRL	181	6	BRL
Total Extractable Hydrocarbons	mg/kg	---	100	BRL	335	BRL	345	6	BRL

<##	= Below laboratory reporting limits and SWS
<##**	= Concentration is below laboratory reporting limits; however, the reporting limits exceeds SWS
Bold	= Exceeds laboratory reporting limits; however, concentrations are below SWS
Bold	= Exceeds SWS

Table 2 - Groundwater Analytical Results
Proposed Kinseth ECIA Stanwood Iowa
211 and 213 East Broadway Street, Stanwood, Cedar County, Iowa

Analyte	Units	Iowa Statewide Standards (SWS)	Iowa Statewide Standards (SWS)	TMW-1	TMW-2	WDUP-1 (TMW-2)	TMW-3
		Protected Groundwater Source	Non-Protected Groundwater Source	12/13/2021	12/13/2021	12/13/2021	12/13/2021
Volatile Organic Compounds							
Methyl tert-butyl ether	mg/L	0.21	1	BRL	BRL	BRL	0.0198
Tetrachloroethylene	mg/L	0.005	1,700	BRL	0.0015	BRL	BRL
Other VOCs	mg/L	Compound Specific	Compound Specific	BRL	BRL	BRL	BRL
Total RCRA 8 Metals							
Arsenic	mg/L	0.01	0.05	0.048	0.15	0.0912	0.0638
Barium	mg/L	2	10	0.487	2.04	1.11	1.19
Cadmium	mg/L	0.005	0.025	0.0012	0.0045	0.0033	0.0049
Chromium	mg/L	0.1	0.5	0.0588	0.164	0.116	0.0836
Lead	mg/L	0.015	0.075	0.0472	0.114	0.0765	0.0616
Mercury	mg/L	0.002	0.01	BRL	BRL	BRL	BRL
Selenium	mg/L	0.05	0.25	0.0075	0.0169	0.0135	0.0105
Silver	mg/L	0.1	0.5	BRL	BRL	BRL	BRL
Dissolved RCRA 8 Metals							
Arsenic, Diss	mg/L	0.01	0.05	0.005	0.0036	0.0046	0.0039
Barium, Diss	mg/L	2	10	0.161	0.17	0.163	0.314
Cadmium, Diss	mg/L	0.005	0.025	BRL	BRL	BRL	0.0027
Chromium, Diss	mg/L	0.1	0.5	BRL	BRL	BRL	0.0031
Lead, Diss	mg/L	0.015	0.075	BRL	BRL	0.0028	0.0059
Mercury, Diss	mg/L	0.002	0.01	BRL	BRL	BRL	BRL
Selenium, Diss	mg/L	0.05	0.25	BRL	BRL	BRL	BRL
Silver, Diss	mg/L	0.1	0.5	BRL	BRL	BRL	BRL
Total Extractable Hydrocarbons (TEH)							
Gasoline	mg/L	---	---	BRL	BRL	BRL	BRL
Diesel	mg/L	2.2	44	BRL	BRL	BRL	BRL
Waste Oil	mg/L	0.73	15	BRL	BRL	BRL	BRL
Total Extractable Hydrocarbons	mg/L	---	---	BRL	N/A	N/A	BRL

BRL	= Below laboratory reporting limits and SWS
Bold	= Exceeds laboratory reporting limits; however, concentrations are below SWS
Bold	= Exceeds SWS

APPENDIX D
Laboratory Analytical Reports

January 04 2022

Joshua F. Cox
Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

RE: Environmental Sampling
Stanwood

Enclosed are the results of analyses for samples received by the laboratory on 12/14/21 11:25. If you have any questions concerning this report, please feel free to contact me at 1-800-858-5227.

ANALYTICAL REPORT FOR SAMPLES

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-1 0-2	1EL1284-01	Soil	12/13/21 08:25	12/14/21 11:25
B-1 22-24	1EL1284-02	Soil	12/13/21 09:00	12/14/21 11:25
B-2 0-2	1EL1284-03	Soil	12/13/21 09:30	12/14/21 11:25
B-2 16-18	1EL1284-04	Soil	12/13/21 09:50	12/14/21 11:25
B-3 0-2	1EL1284-05	Soil	12/13/21 10:15	12/14/21 11:25
B-3 18-20	1EL1284-06	Soil	12/13/21 10:30	12/14/21 11:25
TMW-1	1EL1284-07	Water	12/13/21 11:10	12/14/21 11:25
TMW-2	1EL1284-08	Water	12/13/21 11:15	12/14/21 11:25
TMW-3	1EL1284-09	Water	12/13/21 11:35	12/14/21 11:25
DUP-1	1EL1284-10	Soil	12/13/21 00:00	12/14/21 11:25
WDUP-1	1EL1284-11	Water	12/13/21 00:00	12/14/21 11:25
Trip Blank	1EL1284-12	Water	12/13/21 08:00	12/14/21 11:25

Case Narrative

The client requested that sample 1E1284-09, TMW-3, be analyzed for dissolved metals. However, the sample was not filtered in the field by the client before being preserved with Nitric Acid to a pH of <2. Preserving a sample with nitric acid

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

Page 1 of 51

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

before it is filtered can change the dissolved metals results by causing metals insoluble at the samples normal pH to become dissolved and there-by causing high bias. Similarly, adding Nitric Acid to a sample may cause some analytes that were soluble under the normal sample pH to become insoluble and there-by causing low bias.

Therefore, when sample 1E1284-09 was analyzed for dissolved metals a sub-sample from the Nitric Acid preserved container was taken by decanting the sample into an autosampler vial. The sample was not mixed. The results from the analysis of this subsample were designated as dissolved metals

James Eggers
Director of Quality Assurance

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

CHAIN OF CUSTODY RECORD



600 E. 17th St. S
Newton, IA, 50208
Phone: 641-792-8451

REPORT TO:
NAME: Joshua F. Cox
CO NAME:
ADDRESS: 870 40th Ave.
CITY/STATE: Bettendorf, IA, 52722
PHONE: 847-714-4987
Email: josh.cox@terracon.com

PRINT OR TYPE INFO BELOW:
SAMPLER: Josh F. Cox
SITE NAME: Stanwood
ADDRESS: 211-213 East Broadway
CITY/STATE: Stanwood, IA, 52337
PHONE: 847-714-4987
Email: josh.cox@terracon.com

BILL TO:
NAME: Joshua F. Cox
CO NAME:
ADDRESS: 870 40th Ave.
CITY/STATE: Bettendorf, IA, 52722
PHONE: 847-714-4987
Email: josh.cox@terracon.com

CLIENT SAMPLE #	DATE	TIME	# OF CONTAIN	MATRIX	GRAB/COMPOS	VOCs	TEMP Method CL-2	PCRA & Metals	LAB USE ONLY		
									% Order #	Short Hold	Sample #
B-1 0-2	12/13/2021	8:25	2	S	GRAB	X	X	X	1E-1284		
B-1 22-24	12/13/2021	9:00	2	S	GRAB	X	X	X			
B-2 0-2	12/13/2021	9:30	2	S	GRAB	X	X	X			
B-2 16-18	12/13/2021	9:50	2	S	GRAB	X	X	X			
B-3 0-2	12/13/2021	10:15	2	S	GRAB	X	X	X			
B-3 18-20	12/13/2021	10:30	2	S	GRAB	X	X	X			
TMW-1	12/13/2021	11:10	6	W	GRAB	X	X	X			
TMW-2	12/13/2021	11:10	6	W	GRAB	X	X	X			
TMW-3	12/13/2021	11:35	6	W	GRAB	X	X	X			
DUP-1	12/13/2021		2	S	GRAB	X	X	X			
WDUP-1	12/13/2021		6	W	GRAB	X	X	X			

Relinquished by: (Signature) <i>Joshua F. Cox</i>	Date: 12/13/2021 Time: 14:20	Received by: (Signature) <i>JFW</i>	Date: 12/14/21 Time: 11:25	Remarks: Metals were field filtered Nictric bottles with F were filtered TMW-3 might need to be filtered in the lab as the filtered failed in the field half way through sampling
Relinquished by: (Signature)	Date: Time:	Received for Lab by: (Signature) <i>JFW</i>	Date: Time:	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

B-1 0-2

1EL1284-01 (Soil)

Date Sampled: 12/13/2021 8:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloromethane	ND	0.002	mg/kg dry	1	1EL0835	12/15/21	12/16/21 13:10	EPA 8260B	
Vinyl Chloride	ND	0.002	"	"	"	"	"	"	"
Bromomethane	ND	0.002	"	"	"	"	"	"	"
Chloroethane	ND	0.002	"	"	"	"	"	"	"
1,1-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
Acetone	ND	0.050	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.005	"	"	"	"	"	"	"
Methylene Chloride	ND	0.050	"	"	"	"	"	"	"
trans-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
Methyl-t-butyl Ether (MTBE)	ND	0.002	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.002	"	"	"	"	"	"	"
cis-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
2-Butanone (MEK)	ND	0.005	"	"	"	"	"	"	"
Chloroform	ND	0.002	"	"	"	"	"	"	"
1,1,1-Trichloroethane	ND	0.002	"	"	"	"	"	"	"
Carbon Tetrachloride	ND	0.002	"	"	"	"	"	"	"
Benzene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.002	"	"	"	"	"	"	"
Trichloroethylene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.002	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.002	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	"
4-Methyl-2-pentanone (MIBK)	ND	0.005	"	"	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	"
1,1,2-Trichloroethane	ND	0.001	"	"	"	"	"	"	"
Tetrachloroethylene	ND	0.002	"	"	"	"	"	"	"
2-Hexanone (MBK)	ND	0.005	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.001	"	"	"	"	"	"	"
Chlorobenzene	ND	0.002	"	"	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"	"	"
Xylenes, total	ND	0.004	"	"	"	"	"	"	"
Bromoform	ND	0.001	"	"	"	"	"	"	"
1,1,2,2-Tetrachloroethane	ND	0.002	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"

Terracon Environmental-Bettendorf 870 40th Ave Bettendorf, IA 52722	Project: Environmental Sampling Project Number: Stanwood Project Manager: Joshua F. Cox	Reported 01/04/22 12:59
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B-1 0-2
1EL1284-01 (Soil)

Date Sampled: 12/13/2021 8:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane	97.4 %	63-132	1EL0835	12/15/21	12/16/21 13:10	EPA 8260B			
Surrogate: 1,2-Dichloroethane-d4	99.6 %	55-137	"	"	"	"			
Surrogate: Toluene-d8	98.0 %	73-130	"	"	"	"			
Surrogate: 4-Bromofluorobenzene	91.4 %	65-127	"	"	"	"			

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	38	5	mg/kg	1	1EL1309	12/27/21	12/30/21 03:37	Iowa OA-2	D-12
TEH, as #2 diesel fuel	ND	5	"	"	"	"	"	"	
TEH, as waste oil	62	5	"	"	"	"	"	"	
Total Extractable Hydrocarbons	100	5	"	"	"	"	"	"	
Surrogate: Pentacosane	80.3 %	15-180	"	"	"	"	"	"	

Determination of Conventional Chemistry Parameters

% Solids	85.6	0.10	%	1	1EL0750	12/14/21	12/16/21 16:45	SM 2540 G	
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Determination of Total Metals

Silver, total	ND	0.5	mg/kg dry	1	1EL1249	12/27/21	12/29/21 06:21	EPA 6010B	
Arsenic, total	4.0	2.6	"	"	"	"	"	"	
Barium, total	106	0.52	"	"	"	"	"	"	
Cadmium, total	ND	0.5	"	"	"	"	"	"	
Chromium, total	8.9	1.6	"	"	"	"	"	"	
Mercury, total	0.22	0.05	"	"	1EL1251	12/27/21	12/28/21 08:54	EPA 7471A	
Lead, total	61.8	2.6	"	"	1EL1249	12/27/21	12/29/21 06:21	EPA 6010B	
Selenium, total	ND	15.6	"	10	"	"	12/29/21 12:52	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

B-1 22-24

1EL1284-02 (Soil)

Date Sampled: 12/13/2021 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloromethane	ND	0.002	mg/kg dry	1	1EL0835	12/15/21	12/16/21 13:55	EPA 8260B	
Vinyl Chloride	ND	0.002	"	"	"	"	"	"	"
Bromomethane	ND	0.002	"	"	"	"	"	"	"
Chloroethane	ND	0.002	"	"	"	"	"	"	"
1,1-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
Acetone	ND	0.050	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.005	"	"	"	"	"	"	"
Methylene Chloride	ND	0.050	"	"	"	"	"	"	"
trans-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
Methyl-t-butyl Ether (MTBE)	ND	0.002	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.002	"	"	"	"	"	"	"
cis-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
2-Butanone (MEK)	ND	0.005	"	"	"	"	"	"	"
Chloroform	ND	0.002	"	"	"	"	"	"	"
1,1,1-Trichloroethane	ND	0.002	"	"	"	"	"	"	"
Carbon Tetrachloride	ND	0.002	"	"	"	"	"	"	"
Benzene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.002	"	"	"	"	"	"	"
Trichloroethylene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.002	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.002	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	"
4-Methyl-2-pentanone (MIBK)	ND	0.005	"	"	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	"
1,1,2-Trichloroethane	ND	0.001	"	"	"	"	"	"	"
Tetrachloroethylene	ND	0.002	"	"	"	"	"	"	"
2-Hexanone (MBK)	ND	0.005	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.001	"	"	"	"	"	"	"
Chlorobenzene	ND	0.002	"	"	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"	"	"
Xylenes, total	ND	0.004	"	"	"	"	"	"	"
Bromoform	ND	0.001	"	"	"	"	"	"	"
1,1,2,2-Tetrachloroethane	ND	0.002	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

Terracon Environmental-Bettendorf 870 40th Ave Bettendorf, IA 52722	Project: Environmental Sampling Project Number: Stanwood Project Manager: Joshua F. Cox	Reported 01/04/22 12:59
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B-1 22-24
1EL1284-02 (Soil)

Date Sampled: 12/13/2021 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane		103 %	63-132		1EL0835	12/15/21	12/16/21 13:55	EPA 8260B	
Surrogate: 1,2-Dichloroethane-d4		107 %	55-137		"	"	"	"	
Surrogate: Toluene-d8		101 %	73-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.1 %	65-127		"	"	"	"	

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	ND	5	mg/kg	1	1EL1309	12/27/21	12/30/21 04:19	Iowa OA-2	
TEH, as #2 diesel fuel	ND	5	"	"	"	"	"	"	
TEH, as waste oil	ND	5	"	"	"	"	"	"	
Total Extractable Hydrocarbons	ND	5	"	"	"	"	"	"	
Surrogate: Pentacosane		88.3 %	15-180		"	"	"	"	

Determination of Conventional Chemistry Parameters

% Solids	80.4	0.10	%	1	1EL0750	12/14/21	12/16/21 16:45	SM 2540 G	
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Determination of Total Metals

Silver, total	ND	0.4	mg/kg dry	1	1EL1249	12/27/21	12/29/21 07:11	EPA 6010B	
Arsenic, total	3.2	1.8	"	"	"	"	"	"	
Barium, total	113	0.36	"	"	"	"	"	"	
Cadmium, total	ND	0.4	"	"	"	"	"	"	
Chromium, total	12.7	1.1	"	"	"	"	"	"	
Mercury, total	ND	0.05	"	"	1EL1251	12/27/21	12/28/21 08:54	EPA 7471A	
Lead, total	7.3	1.8	"	"	1EL1249	12/27/21	12/29/21 07:11	EPA 6010B	
Selenium, total	ND	1.1	"	"	"	"	"	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

B-2 0-2

1EL1284-03 (Soil)

Date Sampled: 12/13/2021 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloromethane	ND	0.002	mg/kg dry	1	1EL0835	12/15/21	12/16/21 14:40	EPA 8260B	
Vinyl Chloride	ND	0.002	"	"	"	"	"	"	
Bromomethane	ND	0.002	"	"	"	"	"	"	
Chloroethane	ND	0.002	"	"	"	"	"	"	
1,1-Dichloroethylene	ND	0.002	"	"	"	"	"	"	
Acetone	ND	0.050	"	"	"	"	"	"	
Carbon Disulfide	ND	0.005	"	"	"	"	"	"	
Methylene Chloride	ND	0.050	"	"	"	"	"	"	
trans-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	
Methyl-t-butyl Ether (MTBE)	ND	0.002	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	"	"	"	"	"	"	
cis-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.005	"	"	"	"	"	"	
Chloroform	ND	0.002	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	"	"	"	"	"	"	
Carbon Tetrachloride	ND	0.002	"	"	"	"	"	"	
Benzene	ND	0.002	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.002	"	"	"	"	"	"	
Trichloroethylene	ND	0.002	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	"	"	"	"	"	"	
Bromodichloromethane	ND	0.002	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	0.005	"	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.001	"	"	"	"	"	"	
Tetrachloroethylene	ND	0.002	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	0.005	"	"	"	"	"	"	
Dibromochloromethane	ND	0.001	"	"	"	"	"	"	
Chlorobenzene	ND	0.002	"	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	"	
Xylenes, total	ND	0.004	"	"	"	"	"	"	
Bromoform	ND	0.001	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.002	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	

Terracon Environmental-Bettendorf 870 40th Ave Bettendorf, IA 52722	Project: Environmental Sampling Project Number: Stanwood Project Manager: Joshua F. Cox	Reported 01/04/22 12:59
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B-2 0-2
1EL1284-03 (Soil)

Date Sampled: 12/13/2021 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane		107 %	63-132		1EL0835	12/15/21	12/16/21 14:40	EPA 8260B	
Surrogate: 1,2-Dichloroethane-d4		115 %	55-137		"	"	"	"	
Surrogate: Toluene-d8		102 %	73-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	65-127		"	"	"	"	

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	186	5	mg/kg	1	1EL1309	12/27/21	12/30/21 05:02	Iowa OA-2	D-12
TEH, as #2 diesel fuel	ND	5	"	"	"	"	"	"	
TEH, as waste oil	149	5	"	"	"	"	"	"	
Total Extractable Hydrocarbons	335	5	"	"	"	"	"	"	
Surrogate: Pentacosane		95.7 %	15-180		"	"	"	"	

Determination of Conventional Chemistry Parameters

% Solids	75.6	0.10	%	1	1EL0750	12/14/21	12/16/21 16:45	SM 2540 G	
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Determination of Total Metals

Silver, total	ND	2.2	mg/kg dry	5	1EL1249	12/27/21	12/29/21 07:20	EPA 6010B	
Arsenic, total	ND	10.8	"	"	"	"	"	"	
Barium, total	98.4	2.16	"	"	"	"	"	"	
Cadmium, total	ND	2.2	"	"	"	"	"	"	
Chromium, total	38.6	6.5	"	"	"	"	"	"	
Mercury, total	0.23	0.05	"	1	1EL1251	12/27/21	12/28/21 08:54	EPA 7471A	
Lead, total	500	10.8	"	5	1EL1249	12/27/21	12/29/21 07:20	EPA 6010B	
Selenium, total	7.0	6.5	"	"	"	"	"	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

B-2 16-18
1EL1284-04 (Soil)

Date Sampled: 12/13/2021 9:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloromethane	ND	0.002	mg/kg dry	1	1EL0835	12/15/21	12/16/21 15:24	EPA 8260B	
Vinyl Chloride	ND	0.002	"	"	"	"	"	"	"
Bromomethane	ND	0.002	"	"	"	"	"	"	"
Chloroethane	ND	0.002	"	"	"	"	"	"	"
1,1-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
Acetone	ND	0.050	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.005	"	"	"	"	"	"	"
Methylene Chloride	ND	0.050	"	"	"	"	"	"	"
trans-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
Methyl-t-butyl Ether (MTBE)	ND	0.002	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.002	"	"	"	"	"	"	"
cis-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
2-Butanone (MEK)	ND	0.005	"	"	"	"	"	"	"
Chloroform	ND	0.002	"	"	"	"	"	"	"
1,1,1-Trichloroethane	ND	0.002	"	"	"	"	"	"	"
Carbon Tetrachloride	ND	0.002	"	"	"	"	"	"	"
Benzene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.002	"	"	"	"	"	"	"
Trichloroethylene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.002	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.002	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	"
4-Methyl-2-pentanone (MIBK)	ND	0.005	"	"	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	"
1,1,2-Trichloroethane	ND	0.001	"	"	"	"	"	"	"
Tetrachloroethylene	ND	0.002	"	"	"	"	"	"	"
2-Hexanone (MBK)	ND	0.005	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.001	"	"	"	"	"	"	"
Chlorobenzene	ND	0.002	"	"	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"	"	"
Xylenes, total	ND	0.004	"	"	"	"	"	"	"
Bromoform	ND	0.001	"	"	"	"	"	"	"
1,1,2,2-Tetrachloroethane	ND	0.002	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

B-2 16-18
1EL1284-04 (Soil)

Date Sampled: 12/13/2021 9:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane		109 %	63-132		1EL0835	12/15/21	12/16/21 15:24	EPA 8260B	
Surrogate: 1,2-Dichloroethane-d4		118 %	55-137		"	"	"	"	
Surrogate: Toluene-d8		102 %	73-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	65-127		"	"	"	"	

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	ND	5	mg/kg	1	1EL1309	12/27/21	12/30/21 05:44	Iowa OA-2	
TEH, as #2 diesel fuel	ND	5	"	"	"	"	"	"	
TEH, as waste oil	ND	5	"	"	"	"	"	"	
Total Extractable Hydrocarbons	ND	5	"	"	"	"	"	"	
Surrogate: Pentacosane		58.0 %	15-180		"	"	"	"	

Determination of Conventional Chemistry Parameters

% Solids	82.5	0.10	%	1	1EL0750	12/14/21	12/16/21 16:45	SM 2540 G	
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Determination of Total Metals

Silver, total	ND	0.6	mg/kg dry	2	1EL1249	12/27/21	12/29/21 11:04	EPA 6010B	
Arsenic, total	3.7	3.1	"	"	"	"	"	"	
Barium, total	87.7	0.62	"	"	"	"	"	"	
Cadmium, total	ND	0.6	"	"	"	"	"	"	
Chromium, total	15.4	1.9	"	"	"	"	"	"	
Mercury, total	ND	0.05	"	1	1EL1251	12/27/21	12/28/21 08:54	EPA 7471A	
Lead, total	8.0	3.1	"	2	1EL1249	12/27/21	12/29/21 11:04	EPA 6010B	
Selenium, total	16.5	9.3	"	10	"	"	12/29/21 12:58	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

B-3 0-2

1EL1284-05 (Soil)

Date Sampled:12/13/2021 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloromethane	ND	0.002	mg/kg dry	1	1EL0835	12/15/21	12/16/21 10:57	EPA 8260B	
Vinyl Chloride	ND	0.002	"	"	"	"	"	"	"
Bromomethane	ND	0.002	"	"	"	"	"	"	"
Chloroethane	ND	0.002	"	"	"	"	"	"	"
1,1-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
Acetone	ND	0.050	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.005	"	"	"	"	"	"	"
Methylene Chloride	ND	0.050	"	"	"	"	"	"	"
trans-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
Methyl-t-butyl Ether (MTBE)	ND	0.002	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.002	"	"	"	"	"	"	"
cis-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	"
2-Butanone (MEK)	ND	0.005	"	"	"	"	"	"	"
Chloroform	ND	0.002	"	"	"	"	"	"	"
1,1,1-Trichloroethane	ND	0.002	"	"	"	"	"	"	"
Carbon Tetrachloride	ND	0.002	"	"	"	"	"	"	"
Benzene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.002	"	"	"	"	"	"	"
Trichloroethylene	0.002	0.002	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.002	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.002	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	"
4-Methyl-2-pentanone (MIBK)	ND	0.005	"	"	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	"
1,1,2-Trichloroethane	ND	0.001	"	"	"	"	"	"	"
Tetrachloroethylene	ND	0.002	"	"	"	"	"	"	"
2-Hexanone (MBK)	ND	0.005	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.001	"	"	"	"	"	"	"
Chlorobenzene	ND	0.002	"	"	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"	"	"
Xylenes, total	ND	0.004	"	"	"	"	"	"	"
Bromoform	ND	0.001	"	"	"	"	"	"	"
1,1,2,2-Tetrachloroethane	ND	0.002	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	"

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

B-3 0-2

1EL1284-05 (Soil)

Date Sampled: 12/13/2021 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane		109 %	63-132		1EL0835	12/15/21	12/16/21 10:57	EPA 8260B	
Surrogate: 1,2-Dichloroethane-d4		116 %	55-137		"	"	"	"	
Surrogate: Toluene-d8		104 %	73-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	65-127		"	"	"	"	

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	164	5	mg/kg	1	1EL1309	12/27/21	12/30/21 06:26	Iowa OA-2	D-12
TEH, as #2 diesel fuel	ND	5	"	"	"	"	"	"	
TEH, as waste oil	181	5	"	"	"	"	"	"	
Total Extractable Hydrocarbons	345	5	"	"	"	"	"	"	
Surrogate: Pentacosane		104 %	15-180		"	"	"	"	

Determination of Conventional Chemistry Parameters

% Solids	89.3	0.10	%	1	1EL0750	12/14/21	12/16/21 16:45	SM 2540 G	
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Determination of Total Metals

Silver, total	ND	0.4	mg/kg dry	1	1EL1249	12/27/21	12/29/21 07:36	EPA 6010B	
Arsenic, total	ND	2.0	"	"	"	"	"	"	
Barium, total	24.9	0.40	"	"	"	"	"	"	
Cadmium, total	ND	0.4	"	"	"	"	"	"	
Chromium, total	2.2	1.2	"	"	"	"	"	"	
Mercury, total	0.12	0.05	"	"	1EL1251	12/27/21	12/28/21 08:54	EPA 7471A	
Lead, total	20.2	2.0	"	"	1EL1249	12/27/21	12/29/21 07:36	EPA 6010B	
Selenium, total	17.6	11.9	"	10	"	"	12/29/21 13:05	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

B-3 18-20

1EL1284-06 (Soil)

Date Sampled:12/13/2021 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Chloromethane	ND	0.002	mg/kg dry	1	1EL0835	12/15/21	12/16/21 16:09	EPA 8260B	
Vinyl Chloride	ND	0.002	"	"	"	"	"	"	
Bromomethane	ND	0.002	"	"	"	"	"	"	
Chloroethane	ND	0.002	"	"	"	"	"	"	
1,1-Dichloroethylene	ND	0.002	"	"	"	"	"	"	
Acetone	ND	0.050	"	"	"	"	"	"	
Carbon Disulfide	ND	0.005	"	"	"	"	"	"	
Methylene Chloride	ND	0.050	"	"	"	"	"	"	
trans-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	
Methyl-t-butyl Ether (MTBE)	ND	0.002	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	"	"	"	"	"	"	
cis-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.005	"	"	"	"	"	"	
Chloroform	ND	0.002	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	"	"	"	"	"	"	
Carbon Tetrachloride	ND	0.002	"	"	"	"	"	"	
Benzene	ND	0.002	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.002	"	"	"	"	"	"	
Trichloroethylene	ND	0.002	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	"	"	"	"	"	"	
Bromodichloromethane	ND	0.002	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	0.005	"	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.001	"	"	"	"	"	"	
Tetrachloroethylene	ND	0.002	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	0.005	"	"	"	"	"	"	
Dibromochloromethane	ND	0.001	"	"	"	"	"	"	
Chlorobenzene	ND	0.002	"	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	"	
Xylenes, total	ND	0.004	"	"	"	"	"	"	
Bromoform	ND	0.001	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.002	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

B-3 18-20
1EL1284-06 (Soil)

Date Sampled: 12/13/2021 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane		110 %	63-132		1EL0835	12/15/21	12/16/21 16:09	EPA 8260B	
Surrogate: 1,2-Dichloroethane-d4		119 %	55-137		"	"	"	"	
Surrogate: Toluene-d8		103 %	73-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	65-127		"	"	"	"	

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	ND	5	mg/kg	1	1EL1309	12/27/21	12/30/21 07:09	Iowa OA-2	
TEH, as #2 diesel fuel	ND	5	"	"	"	"	"	"	
TEH, as waste oil	6	5	"	"	"	"	"	"	D-12
Total Extractable Hydrocarbons	6	5	"	"	"	"	"	"	
Surrogate: Pentacosane		73.7 %	15-180		"	"	"	"	

Determination of Conventional Chemistry Parameters

% Solids	80.6	0.10	%	1	1EL0750	12/14/21	12/16/21 16:45	SM 2540 G	
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Determination of Total Metals

Silver, total	ND	0.6	mg/kg dry	2	1EL1249	12/27/21	12/29/21 11:31	EPA 6010B	
Arsenic, total	3.4	3.0	"	"	"	"	"	"	
Barium, total	128	0.60	"	"	"	"	"	"	
Cadmium, total	ND	0.6	"	"	"	"	"	"	
Chromium, total	15.2	1.8	"	"	"	"	"	"	
Mercury, total	ND	0.05	"	1	1EL1251	12/27/21	12/28/21 08:54	EPA 7471A	
Lead, total	8.5	3.0	"	2	1EL1249	12/27/21	12/29/21 11:31	EPA 6010B	
Selenium, total	17.6	9.0	"	10	"	"	12/29/21 13:14	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

TMW-1
1EL1284-07 (Water)

Date Sampled: 12/13/2021 11:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloromethane	ND	1.0	ug/L	1	1EL0786	12/15/21	12/15/21 10:30	EPA 8260B	
Vinyl Chloride	ND	1.0	"	"	"	"	"	"	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethylene	ND	1.0	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Carbon Disulfide	ND	1.0	"	"	"	"	"	"	
Methylene Chloride	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethylene	ND	1.0	"	"	"	"	"	"	
Methyl-t-butyl Ether (MTBE)	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethylene	ND	1.0	"	"	"	"	"	"	
2-Butanone (MEK)	ND	10.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Carbon Tetrachloride	ND	1.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethylene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	5.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethylene	ND	1.0	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes, total	ND	2.0	"	"	"	"	"	"	
Bromoform	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	

Terracon Environmental-Bettendorf 870 40th Ave Bettendorf, IA 52722	Project: Environmental Sampling Project Number: Stanwood Project Manager: Joshua F. Cox	Reported 01/04/22 12:59
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TMW-1
1EL1284-07 (Water)

Date Sampled: 12/13/2021 11:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane		115 %	79-130		1EL0786	12/15/21	12/15/21 10:30	EPA 8260B	
Surrogate: 1,2-Dichloroethane-d4		115 %	68-134		"	"	"	"	
Surrogate: Toluene-d8		106 %	87-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	84-112		"	"	"	"	

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	ND	0.4	mg/L	1	1EL0839	"	12/22/21 07:39	Iowa OA-2	
TEH, as #2 diesel fuel	ND	0.4	"	"	"	"	"	"	
TEH, as waste oil	ND	0.4	"	"	"	"	"	"	
Total Extractable Hydrocarbons	ND	0.4	"	"	"	"	"	"	
Surrogate: Pentacosane		71.8 %	15-179		"	"	"	"	

Determination of Dissolved Metals

Silver, dissolved	ND	0.0020	mg/L	4	1EL0763	12/14/21	12/18/21 07:47	EPA 6020A	
Arsenic, dissolved	0.0050	0.0020	"	"	"	"	"	"	
Barium, dissolved	0.161	0.0020	"	"	"	"	"	"	
Cadmium, dissolved	ND	0.0008	"	"	"	"	"	"	
Chromium, dissolved	ND	0.0020	"	"	"	"	"	"	
Mercury, dissolved	ND	0.00050	"	1	1EL0772	12/15/21	12/17/21 07:19	EPA 7470A	
Lead, dissolved	ND	0.0008	"	4	1EL0763	12/14/21	12/18/21 07:47	EPA 6020A	
Selenium, dissolved	ND	0.0040	"	"	"	"	"	"	

Determination of Total Metals

Silver, total	ND	0.0040	mg/L	4	1EL0830	12/20/21	12/20/21 17:07	EPA 6020A	
Arsenic, total	0.0480	0.0040	"	"	"	"	"	"	
Barium, total	0.487	0.0040	"	"	"	"	"	"	
Cadmium, total	0.0012	0.0008	"	"	"	"	"	"	
Chromium, total	0.0588	0.0080	"	"	"	"	"	"	
Mercury, total	ND	0.00050	"	1	1EL0772	12/15/21	12/17/21 07:19	EPA 7470A	
Lead, total	0.0472	0.0040	"	4	1EL0830	12/20/21	12/20/21 17:07	EPA 6020A	
Selenium, total	0.0075	0.0040	"	"	"	"	"	"	

Terracon Environmental-Bettendorf 870 40th Ave Bettendorf, IA 52722	Project: Environmental Sampling Project Number: Stanwood Project Manager: Joshua F. Cox	Reported 01/04/22 12:59
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TMW-2
1EL1284-08 (Water)

Date Sampled: 12/13/2021 11:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloromethane	ND	1.0	ug/L	1	1EL0786	12/15/21	12/15/21 12:27	EPA 8260B	
Vinyl Chloride	ND	1.0	"	"	"	"	"	"	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethylene	ND	1.0	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Carbon Disulfide	ND	1.0	"	"	"	"	"	"	
Methylene Chloride	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethylene	ND	1.0	"	"	"	"	"	"	
Methyl-t-butyl Ether (MTBE)	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethylene	ND	1.0	"	"	"	"	"	"	
2-Butanone (MEK)	ND	10.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Carbon Tetrachloride	ND	1.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethylene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	5.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethylene	1.5	1.0	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes, total	ND	2.0	"	"	"	"	"	"	
Bromoform	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

TMW-2
1EL1284-08 (Water)

Date Sampled: 12/13/2021 11:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane		111 %	79-130		1EL0786	12/15/21	12/15/21 12:27	EPA 8260B	
Surrogate: 1,2-Dichloroethane-d4		110 %	68-134		"	"	"	"	
Surrogate: Toluene-d8		107 %	87-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	84-112		"	"	"	"	

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	ND	0.4	mg/L	1	1EL0839	"	12/22/21 08:22	Iowa OA-2	
TEH, as #2 diesel fuel	ND	0.4	"	"	"	"	"	"	
TEH, as waste oil	ND	0.4	"	"	"	"	"	"	
Total Extractable Hydrocarbons	ND	0.4	"	"	"	"	"	"	
Surrogate: Pentacosane		95.1 %	15-179		"	"	"	"	

Determination of Dissolved Metals

Silver, dissolved	ND	0.0020	mg/L	4	1EL0763	12/14/21	12/18/21 08:19	EPA 6020A	
Arsenic, dissolved	0.0036	0.0020	"	"	"	"	"	"	
Barium, dissolved	0.170	0.0020	"	"	"	"	"	"	
Cadmium, dissolved	ND	0.0008	"	"	"	"	"	"	
Chromium, dissolved	ND	0.0020	"	"	"	"	"	"	
Mercury, dissolved	ND	0.00050	"	1	1EL0772	12/15/21	12/17/21 07:19	EPA 7470A	
Lead, dissolved	ND	0.0008	"	4	1EL0763	12/14/21	12/18/21 08:19	EPA 6020A	
Selenium, dissolved	ND	0.0040	"	"	"	"	"	"	

Determination of Total Metals

Silver, total	ND	0.0040	mg/L	4	1EL0830	12/20/21	12/20/21 17:32	EPA 6020A	
Arsenic, total	0.150	0.0040	"	"	"	"	"	"	
Barium, total	2.04	0.0040	"	"	"	"	"	"	
Cadmium, total	0.0045	0.0008	"	"	"	"	"	"	
Chromium, total	0.164	0.0080	"	"	"	"	"	"	
Mercury, total	ND	0.00050	"	1	1EL0772	12/15/21	12/17/21 07:19	EPA 7470A	
Lead, total	0.114	0.0040	"	4	1EL0830	12/20/21	12/20/21 17:32	EPA 6020A	
Selenium, total	0.0169	0.0040	"	"	"	"	"	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

TMW-3
1EL1284-09 (Water)

Date Sampled: 12/13/2021 11:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloromethane	ND	1.0	ug/L	1	1EL0786	12/15/21	12/15/21 13:05	EPA 8260B	
Vinyl Chloride	ND	1.0	"	"	"	"	"	"	"
Bromomethane	ND	1.0	"	"	"	"	"	"	"
Chloroethane	ND	1.0	"	"	"	"	"	"	"
1,1-Dichloroethylene	ND	1.0	"	"	"	"	"	"	"
Acetone	ND	10.0	"	"	"	"	"	"	"
Carbon Disulfide	ND	1.0	"	"	"	"	"	"	"
Methylene Chloride	ND	5.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethylene	ND	1.0	"	"	"	"	"	"	"
Methyl-t-butyl Ether (MTBE)	19.8	2.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethylene	ND	1.0	"	"	"	"	"	"	"
2-Butanone (MEK)	ND	10.0	"	"	"	"	"	"	"
Chloroform	ND	1.0	"	"	"	"	"	"	"
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	"
Carbon Tetrachloride	ND	1.0	"	"	"	"	"	"	"
Benzene	ND	1.0	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	1.0	"	"	"	"	"	"	"
Trichloroethylene	ND	1.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	"
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	"
4-Methyl-2-pentanone (MIBK)	ND	5.0	"	"	"	"	"	"	"
Toluene	ND	1.0	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	"
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	"
Tetrachloroethylene	ND	1.0	"	"	"	"	"	"	"
2-Hexanone (MBK)	ND	5.0	"	"	"	"	"	"	"
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	"
Chlorobenzene	ND	1.0	"	"	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"	"	"
Xylenes, total	ND	2.0	"	"	"	"	"	"	"
Bromoform	ND	1.0	"	"	"	"	"	"	"
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	"

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

TMW-3
1EL1284-09 (Water)

Date Sampled: 12/13/2021 11:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane		110 %	79-130		1EL0786	12/15/21	12/15/21 13:05	EPA 8260B	
Surrogate: 1,2-Dichloroethane-d4		111 %	68-134		"	"	"	"	
Surrogate: Toluene-d8		106 %	87-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %	84-112		"	"	"	"	

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	ND	0.4	mg/L	1	1EL0839	"	12/22/21 09:04	Iowa OA-2	
TEH, as #2 diesel fuel	ND	0.4	"	"	"	"	"	"	
TEH, as waste oil	ND	0.4	"	"	"	"	"	"	
Total Extractable Hydrocarbons	ND	0.4	"	"	"	"	"	"	
Surrogate: Pentacosane		95.5 %	15-179		"	"	"	"	

Determination of Dissolved Metals

Silver, dissolved	ND	0.0020	mg/L	4	1EL0763	12/14/21	12/18/21 08:25	EPA 6020A	
Arsenic, dissolved	0.0039	0.0020	"	"	"	"	"	"	
Barium, dissolved	0.314	0.0020	"	"	"	"	"	"	
Cadmium, dissolved	0.0027	0.0008	"	"	"	"	"	"	
Chromium, dissolved	0.0031	0.0020	"	"	"	"	"	"	
Mercury, dissolved	ND	0.00050	"	1	1EL0772	12/15/21	12/17/21 07:19	EPA 7470A	
Lead, dissolved	0.0059	0.0008	"	4	1EL0763	12/14/21	12/18/21 08:25	EPA 6020A	
Selenium, dissolved	ND	0.0040	"	"	"	"	"	"	

Determination of Total Metals

Silver, total	ND	0.0040	mg/L	4	1EL0830	12/20/21	12/20/21 17:51	EPA 6020A	
Arsenic, total	0.0638	0.0040	"	"	"	"	"	"	
Barium, total	1.19	0.0040	"	"	"	"	"	"	
Cadmium, total	0.0049	0.0008	"	"	"	"	"	"	
Chromium, total	0.0836	0.0080	"	"	"	"	"	"	
Mercury, total	ND	0.00050	"	1	1EL0772	12/15/21	12/17/21 07:19	EPA 7470A	
Lead, total	0.0616	0.0040	"	4	1EL0830	12/20/21	12/20/21 17:51	EPA 6020A	
Selenium, total	0.0105	0.0040	"	"	"	"	"	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

DUP-1

1EL1284-10 (Soil)

Date Sampled:12/13/2021 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Chloromethane	ND	0.002	mg/kg dry	1	1EL0835	12/15/21	12/16/21 16:54	EPA 8260B	
Vinyl Chloride	ND	0.002	"	"	"	"	"	"	
Bromomethane	ND	0.002	"	"	"	"	"	"	
Chloroethane	ND	0.002	"	"	"	"	"	"	
1,1-Dichloroethylene	ND	0.002	"	"	"	"	"	"	
Acetone	ND	0.050	"	"	"	"	"	"	
Carbon Disulfide	ND	0.005	"	"	"	"	"	"	
Methylene Chloride	ND	0.050	"	"	"	"	"	"	
trans-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	
Methyl-t-butyl Ether (MTBE)	ND	0.002	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	"	"	"	"	"	"	
cis-1,2-Dichloroethylene	ND	0.002	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.005	"	"	"	"	"	"	
Chloroform	ND	0.002	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	"	"	"	"	"	"	
Carbon Tetrachloride	ND	0.002	"	"	"	"	"	"	
Benzene	ND	0.002	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.002	"	"	"	"	"	"	
Trichloroethylene	ND	0.002	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	"	"	"	"	"	"	
Bromodichloromethane	ND	0.002	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	0.005	"	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.001	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.001	"	"	"	"	"	"	
Tetrachloroethylene	ND	0.002	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	0.005	"	"	"	"	"	"	
Dibromochloromethane	ND	0.001	"	"	"	"	"	"	
Chlorobenzene	ND	0.002	"	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	"	
Xylenes, total	ND	0.004	"	"	"	"	"	"	
Bromoform	ND	0.001	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.002	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.002	"	"	"	"	"	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

DUP-1

1EL1284-10 (Soil)

Date Sampled: 12/13/2021 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane		109 %	63-132		1EL0835	12/15/21	12/16/21 16:54	EPA 8260B	
Surrogate: 1,2-Dichloroethane-d4		118 %	55-137		"	"	"	"	
Surrogate: Toluene-d8		102 %	73-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	65-127		"	"	"	"	

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	ND	5	mg/kg	1	1EL1309	12/27/21	12/30/21 07:51	Iowa OA-2	
TEH, as #2 diesel fuel	ND	5	"	"	"	"	"	"	
TEH, as waste oil	ND	5	"	"	"	"	"	"	
Total Extractable Hydrocarbons	ND	5	"	"	"	"	"	"	
Surrogate: Pentacosane		59.0 %	15-180		"	"	"	"	

Determination of Conventional Chemistry Parameters

% Solids	82.0	0.10	%	1	1EL0750	12/14/21	12/16/21 16:45	SM 2540 G	
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Determination of Total Metals

Silver, total	ND	0.4	mg/kg dry	1	1EL1249	12/27/21	12/29/21 07:54	EPA 6010B	
Arsenic, total	6.6	1.8	"	"	"	"	"	"	
Barium, total	162	0.36	"	"	"	"	"	"	
Cadmium, total	0.4	0.4	"	"	"	"	"	"	
Chromium, total	15.0	1.1	"	"	"	"	"	"	
Mercury, total	ND	0.05	"	"	1EL1251	12/27/21	12/28/21 08:54	EPA 7471A	
Lead, total	7.7	1.8	"	"	1EL1249	12/27/21	12/29/21 07:54	EPA 6010B	
Selenium, total	ND	1.1	"	"	"	"	"	"	

Terracon Environmental-Bettendorf 870 40th Ave Bettendorf, IA 52722	Project: Environmental Sampling Project Number: Stanwood Project Manager: Joshua F. Cox	Reported 01/04/22 12:59
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WDUP-1
1EL1284-11 (Water)

Date Sampled: 12/13/2021 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloromethane	ND	1.0	ug/L	1	1EL0786	12/15/21	12/15/21 13:44	EPA 8260B	
Vinyl Chloride	ND	1.0	"	"	"	"	"	"	"
Bromomethane	ND	1.0	"	"	"	"	"	"	"
Chloroethane	ND	1.0	"	"	"	"	"	"	"
1,1-Dichloroethylene	ND	1.0	"	"	"	"	"	"	"
Acetone	ND	10.0	"	"	"	"	"	"	"
Carbon Disulfide	ND	1.0	"	"	"	"	"	"	"
Methylene Chloride	ND	5.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethylene	ND	1.0	"	"	"	"	"	"	"
Methyl-t-butyl Ether (MTBE)	ND	2.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethylene	ND	1.0	"	"	"	"	"	"	"
2-Butanone (MEK)	ND	10.0	"	"	"	"	"	"	"
Chloroform	ND	1.0	"	"	"	"	"	"	"
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	"
Carbon Tetrachloride	ND	1.0	"	"	"	"	"	"	"
Benzene	ND	1.0	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	1.0	"	"	"	"	"	"	"
Trichloroethylene	ND	1.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	"
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	"
4-Methyl-2-pentanone (MIBK)	ND	5.0	"	"	"	"	"	"	"
Toluene	ND	1.0	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	"
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	"
Tetrachloroethylene	ND	1.0	"	"	"	"	"	"	"
2-Hexanone (MBK)	ND	5.0	"	"	"	"	"	"	"
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	"
Chlorobenzene	ND	1.0	"	"	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"	"	"
Xylenes, total	ND	2.0	"	"	"	"	"	"	"
Bromoform	ND	1.0	"	"	"	"	"	"	"
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	"

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This report must be reproduced in its entirety.

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

WDUP-1

1EL1284-11 (Water)

Date Sampled: 12/13/2021 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Surrogate: Dibromofluoromethane		107 %	79-130		1EL0786	12/15/21	12/15/21 13:44	EPA 8260B	
Surrogate: 1,2-Dichloroethane-d4		109 %	68-134		"	"	"	"	
Surrogate: Toluene-d8		105 %	87-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %	84-112		"	"	"	"	

Determination of Extractable Petroleum Hydrocarbons

TEH, as gasoline	ND	0.4	mg/L	1	1EL0839	"	12/22/21 09:47	Iowa OA-2	
TEH, as #2 diesel fuel	ND	0.4	"	"	"	"	"	"	
TEH, as waste oil	ND	0.4	"	"	"	"	"	"	
Total Extractable Hydrocarbons	ND	0.4	"	"	"	"	"	"	
Surrogate: Pentacosane		98.4 %	15-179		"	"	"	"	

Determination of Dissolved Metals

Silver, dissolved	ND	0.0020	mg/L	4	1EL0763	12/14/21	12/18/21 08:32	EPA 6020A	
Arsenic, dissolved	0.0046	0.0020	"	"	"	"	"	"	
Barium, dissolved	0.163	0.0020	"	"	"	"	"	"	
Cadmium, dissolved	ND	0.0008	"	"	"	"	"	"	
Chromium, dissolved	ND	0.0020	"	"	"	"	"	"	
Mercury, dissolved	ND	0.00050	"	1	1EL0772	12/15/21	12/17/21 07:19	EPA 7470A	
Lead, dissolved	0.0028	0.0008	"	4	1EL0763	12/14/21	12/18/21 08:32	EPA 6020A	
Selenium, dissolved	ND	0.0040	"	"	"	"	"	"	

Determination of Total Metals

Silver, total	ND	0.0040	mg/L	4	1EL0830	12/20/21	12/20/21 17:58	EPA 6020A	
Arsenic, total	0.0912	0.0040	"	"	"	"	"	"	
Barium, total	1.11	0.0040	"	"	"	"	"	"	
Cadmium, total	0.0033	0.0008	"	"	"	"	"	"	
Chromium, total	0.116	0.0080	"	"	"	"	"	"	
Mercury, total	ND	0.00050	"	1	1EL0772	12/15/21	12/17/21 07:19	EPA 7470A	
Lead, total	0.0765	0.0040	"	4	1EL0830	12/20/21	12/20/21 17:58	EPA 6020A	
Selenium, total	0.0135	0.0040	"	"	"	"	"	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Trip Blank
1EL1284-12 (Water)

Date Sampled: 12/13/2021 8:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloromethane	ND	1.0	ug/L	1	1EL0786	12/15/21	12/15/21 09:51	EPA 8260B	
Vinyl Chloride	ND	1.0	"	"	"	"	"	"	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethylene	ND	1.0	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Carbon Disulfide	ND	1.0	"	"	"	"	"	"	
Methylene Chloride	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethylene	ND	1.0	"	"	"	"	"	"	
Methyl-t-butyl Ether (MTBE)	ND	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethylene	ND	1.0	"	"	"	"	"	"	
2-Butanone (MEK)	ND	10.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Carbon Tetrachloride	ND	1.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethylene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	5.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethylene	ND	1.0	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes, total	ND	2.0	"	"	"	"	"	"	
Bromoform	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	

Terracon Environmental-Bettendorf 870 40th Ave Bettendorf, IA 52722	Project: Environmental Sampling Project Number: Stanwood Project Manager: Joshua F. Cox	Reported 01/04/22 12:59
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Trip Blank
1EL1284-12 (Water)

Date Sampled: 12/13/2021 8:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Volatile Organic Compounds

<i>Surrogate: Dibromofluoromethane</i>	115 %	79-130			1EL0786	12/15/21	12/15/21 09:51	EPA 8260B	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	116 %	68-134			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	107 %	87-116			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	100 %	84-112			"	"	"	"	

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0786 - EPA 5030B

Blank (1EL0786-BLK1)

Prepared & Analyzed: 12/15/21

Chloromethane	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	"							
Bromomethane	ND	1.0	"							
Chloroethane	ND	1.0	"							
1,1-Dichloroethylene	ND	1.0	"							
Acetone	ND	10.0	"							
Carbon Disulfide	ND	1.0	"							
Methylene Chloride	ND	5.0	"							
trans-1,2-Dichloroethylene	ND	1.0	"							
Methyl-t-butyl Ether (MTBE)	ND	2.0	"							
1,1-Dichloroethane	ND	1.0	"							
cis-1,2-Dichloroethylene	ND	1.0	"							
2-Butanone (MEK)	ND	10.0	"							
Chloroform	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Carbon Tetrachloride	ND	1.0	"							
Benzene	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
Trichloroethylene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
4-Methyl-2-pentanone (MIBK)	ND	5.0	"							
Toluene	ND	1.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
Tetrachloroethylene	ND	1.0	"							
2-Hexanone (MBK)	ND	5.0	"							
Dibromochloromethane	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	2.0	"							
Bromoform	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
1,3-Dichlorobenzene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
Surrogate: Dibromofluoromethane	59.1		"	50.2280		118	79-130			
Surrogate: 1,2-Dichloroethane-d4	59.1		"	50.3120		117	68-134			
Surrogate: Toluene-d8	52.9		"	50.2360		105	87-116			
Surrogate: 4-Bromofluorobenzene	50.7		"	50.4000		101	84-112			

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0786 - EPA 5030B

LCS (1EL0786-BS1)

Prepared & Analyzed: 12/15/21

Chloromethane	34.24	1.0	ug/L	30.0000		114	57-130			
Vinyl Chloride	39.38	1.0	"	30.0000		131	61-134			
Bromomethane	36.00	1.0	"	30.0000		120	61-140			
Chloroethane	39.34	1.0	"	30.0000		131	68-135			
1,1-Dichloroethylene	60.40	1.0	"	50.0000		121	77-136			
Acetone	114.0	10.0	"	102.200		112	54-150			
Carbon Disulfide	120.0	1.0	"	104.400		115	73-147			
Methylene Chloride	48.69	5.0	"	50.0000		97.4	70-138			
trans-1,2-Dichloroethylene	55.26	1.0	"	50.0000		111	71-134			
Methyl-t-butyl Ether (MTBE)	123.8	2.0	"	103.000		120	72-140			
1,1-Dichloroethane	55.02	1.0	"	50.0000		110	70-131			
cis-1,2-Dichloroethylene	56.00	1.0	"	49.4750		113	76-138			
2-Butanone (MEK)	105.7	10.0	"	100.000		106	63-137			
Chloroform	54.68	1.0	"	50.0000		109	77-130			
1,1,1-Trichloroethane	51.40	1.0	"	49.9750		103	66-120			
Carbon Tetrachloride	56.96	1.0	"	50.0000		114	72-131			
Benzene	46.64	1.0	"	50.0000		93.3	77-124			
1,2-Dichloroethane	50.98	1.0	"	50.0000		102	78-122			
Trichloroethylene	50.52	1.0	"	50.0000		101	78-123			
1,2-Dichloropropane	47.47	1.0	"	50.0000		94.9	77-125			
Bromodichloromethane	47.42	1.0	"	50.0000		94.8	76-120			
cis-1,3-Dichloropropene	50.24	1.0	"	50.3250		99.8	76-119			
4-Methyl-2-pentanone (MIBK)	108.1	5.0	"	104.100		104	70-134			
Toluene	48.72	1.0	"	50.0000		97.4	75-128			
trans-1,3-Dichloropropene	50.37	1.0	"	50.4250		99.9	76-122			
1,1,2-Trichloroethane	46.47	1.0	"	50.0000		92.9	75-125			
Tetrachloroethylene	49.92	1.0	"	50.0000		99.8	76-121			
2-Hexanone (MBK)	92.09	5.0	"	111.800		82.4	64-136			
Dibromochloromethane	50.71	1.0	"	49.5000		102	78-126			
Chlorobenzene	45.01	1.0	"	50.0000		90.0	77-119			
Ethylbenzene	47.28	1.0	"	50.0000		94.6	72-119			
Xylenes, total	139.5	2.0	"	150.000		93.0	73-118			
Bromoform	49.05	1.0	"	50.0000		98.1	76-123			
1,1,2,2-Tetrachloroethane	48.94	1.0	"	49.8500		98.2	63-129			
1,3-Dichlorobenzene	50.71	1.0	"	50.0000		101	72-125			
1,4-Dichlorobenzene	52.27	1.0	"	50.0000		105	72-127			
1,2-Dichlorobenzene	49.66	1.0	"	50.0000		99.3	72-123			
Surrogate: Dibromofluoromethane	56.4		"	50.2280		112	79-130			
Surrogate: 1,2-Dichloroethane-d4	59.0		"	50.3120		117	68-134			
Surrogate: Toluene-d8	51.5		"	50.2360		102	87-116			
Surrogate: 4-Bromofluorobenzene	51.1		"	50.4000		101	84-112			

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0786 - EPA 5030B

LCS Dup (1EL0786-BSD1)

Prepared & Analyzed: 12/15/21

Chloromethane	35.43	1.0	ug/L	30.0000	118	57-130	3.42	24		
Vinyl Chloride	41.39	1.0	"	30.0000	138	61-134	4.98	25		QR-02
Bromomethane	38.48	1.0	"	30.0000	128	61-140	6.66	25		
Chloroethane	37.60	1.0	"	30.0000	125	68-135	4.52	26		
1,1-Dichloroethylene	61.46	1.0	"	50.0000	123	77-136	1.74	24		
Acetone	115.7	10.0	"	102.200	113	54-150	1.47	30		
Carbon Disulfide	126.1	1.0	"	104.400	121	73-147	4.96	24		
Methylene Chloride	51.82	5.0	"	50.0000	104	70-138	6.23	22		
trans-1,2-Dichloroethylene	57.30	1.0	"	50.0000	115	71-134	3.62	23		
Methyl-t-butyl Ether (MTBE)	126.4	2.0	"	103.000	123	72-140	2.06	23		
1,1-Dichloroethane	56.03	1.0	"	50.0000	112	70-131	1.82	25		
cis-1,2-Dichloroethylene	58.22	1.0	"	49.4750	118	76-138	3.89	23		
2-Butanone (MEK)	112.4	10.0	"	100.000	112	63-137	6.08	25		
Chloroform	56.63	1.0	"	50.0000	113	77-130	3.50	24		
1,1,1-Trichloroethane	52.37	1.0	"	49.9750	105	66-120	1.87	24		
Carbon Tetrachloride	59.96	1.0	"	50.0000	120	72-131	5.13	24		
Benzene	49.77	1.0	"	50.0000	99.5	77-124	6.49	23		
1,2-Dichloroethane	52.38	1.0	"	50.0000	105	78-122	2.71	23		
Trichloroethylene	53.46	1.0	"	50.0000	107	78-123	5.65	23		
1,2-Dichloropropane	50.10	1.0	"	50.0000	100	77-125	5.39	22		
Bromodichloromethane	49.06	1.0	"	50.0000	98.1	76-120	3.40	21		
cis-1,3-Dichloropropene	51.91	1.0	"	50.3250	103	76-119	3.27	21		
4-Methyl-2-pentanone (MIBK)	122.6	5.0	"	104.100	118	70-134	12.6	21		
Toluene	51.87	1.0	"	50.0000	104	75-128	6.26	25		
trans-1,3-Dichloropropene	52.22	1.0	"	50.4250	104	76-122	3.61	21		
1,1,2-Trichloroethane	49.05	1.0	"	50.0000	98.1	75-125	5.40	22		
Tetrachloroethylene	52.69	1.0	"	50.0000	105	76-121	5.40	25		
2-Hexanone (MBK)	118.0	5.0	"	111.800	106	64-136	24.7	25		
Dibromochloromethane	53.66	1.0	"	49.5000	108	78-126	5.65	21		
Chlorobenzene	49.26	1.0	"	50.0000	98.5	77-119	9.02	22		
Ethylbenzene	49.63	1.0	"	50.0000	99.3	72-119	4.85	25		
Xylenes, total	150.8	2.0	"	150.000	101	73-118	7.78	25		
Bromoform	52.82	1.0	"	50.0000	106	76-123	7.40	21		
1,1,2,2-Tetrachloroethane	48.67	1.0	"	49.8500	97.6	63-129	0.553	24		
1,3-Dichlorobenzene	49.60	1.0	"	50.0000	99.2	72-125	2.21	26		
1,4-Dichlorobenzene	49.61	1.0	"	50.0000	99.2	72-127	5.22	26		
1,2-Dichlorobenzene	48.08	1.0	"	50.0000	96.2	72-123	3.23	24		
Surrogate: Dibromofluoromethane	55.4		"	50.2280	110	79-130				
Surrogate: 1,2-Dichloroethane-d4	59.2		"	50.3120	118	68-134				
Surrogate: Toluene-d8	52.1		"	50.2360	104	87-116				
Surrogate: 4-Bromofluorobenzene	50.2		"	50.4000	99.5	84-112				

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0786 - EPA 5030B

Matrix Spike (1EL0786-MS1)	Source: 1EL1284-07			Prepared & Analyzed: 12/15/21						
Chloromethane	304.5	10.0	ug/L	300.000	ND	102	51-129			
Vinyl Chloride	351.6	10.0	"	300.000	ND	117	59-132			
Bromomethane	336.0	10.0	"	300.000	ND	112	51-142			
Chloroethane	347.0	10.0	"	300.000	ND	116	70-133			
1,1-Dichloroethylene	559.4	10.0	"	500.000	ND	112	79-132			
Acetone	996.8	100	"	1022.00	ND	97.5	53-160			
Carbon Disulfide	1109	10.0	"	1044.00	ND	106	76-141			
Methylene Chloride	423.2	50.0	"	500.000	ND	84.6	71-137			
trans-1,2-Dichloroethylene	500.3	10.0	"	500.000	ND	100	75-127			
Methyl-t-butyl Ether (MTBE)	1100	20.0	"	1030.00	ND	107	66-142			
1,1-Dichloroethane	489.4	10.0	"	500.000	ND	97.9	73-125			
cis-1,2-Dichloroethylene	505.6	10.0	"	494.750	ND	102	74-136			
2-Butanone (MEK)	936.1	100	"	1000.00	ND	93.6	71-136			
Chloroform	485.7	10.0	"	500.000	ND	97.1	77-128			
1,1,1-Trichloroethane	464.1	10.0	"	499.750	ND	92.9	69-115			
Carbon Tetrachloride	511.9	10.0	"	500.000	ND	102	75-126			
Benzene	466.5	10.0	"	500.000	ND	93.3	77-121			
1,2-Dichloroethane	486.3	10.0	"	500.000	ND	97.3	79-119			
Trichloroethylene	492.6	10.0	"	500.000	ND	98.5	82-115			
1,2-Dichloropropane	459.5	10.0	"	500.000	ND	91.9	80-118			
Bromodichloromethane	431.4	10.0	"	500.000	ND	86.3	76-116			
cis-1,3-Dichloropropene	465.8	10.0	"	503.250	ND	92.6	74-113			
4-Methyl-2-pentanone (MIBK)	1030	50.0	"	1041.00	ND	99.0	69-134			
Toluene	471.8	10.0	"	500.000	ND	94.4	76-124			
trans-1,3-Dichloropropene	467.2	10.0	"	504.250	ND	92.7	76-113			
1,1,2-Trichloroethane	414.2	10.0	"	500.000	ND	82.8	77-120			
Tetrachloroethylene	485.0	10.0	"	500.000	ND	97.0	80-114			
2-Hexanone (MBK)	1016	50.0	"	1118.00	ND	90.9	66-133			
Dibromochloromethane	476.5	10.0	"	495.000	ND	96.3	80-119			
Chlorobenzene	415.5	10.0	"	500.000	ND	83.1	80-112			
Ethylbenzene	450.6	10.0	"	500.000	ND	90.1	74-113			
Xylenes, total	1332	20.0	"	1500.00	ND	88.8	76-112			
Bromoform	454.1	10.0	"	500.000	ND	90.8	76-120			
1,1,2,2-Tetrachloroethane	439.0	10.0	"	498.500	ND	88.1	61-129			
1,3-Dichlorobenzene	464.2	10.0	"	500.000	ND	92.8	71-122			
1,4-Dichlorobenzene	491.4	10.0	"	500.000	ND	98.3	71-125			
1,2-Dichlorobenzene	446.3	10.0	"	500.000	ND	89.3	70-123			
Surrogate: Dibromofluoromethane	504		"	502.280		100	79-130			
Surrogate: 1,2-Dichloroethane-d4	552		"	503.120		110	68-134			
Surrogate: Toluene-d8	526		"	502.360		105	87-116			
Surrogate: 4-Bromofluorobenzene	498		"	504.000		98.8	84-112			

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0786 - EPA 5030B

Matrix Spike Dup (1EL0786-MSD1)	Source: 1EL1284-07			Prepared & Analyzed: 12/15/21						
Chloromethane	331.4	10.0	ug/L	300.000	ND	110	51-129	8.46	23	
Vinyl Chloride	367.5	10.0	"	300.000	ND	122	59-132	4.42	22	
Bromomethane	345.1	10.0	"	300.000	ND	115	51-142	2.67	30	
Chloroethane	369.1	10.0	"	300.000	ND	123	70-133	6.17	27	
1,1-Dichloroethylene	556.7	10.0	"	500.000	ND	111	79-132	0.484	19	
Acetone	1047	100	"	1022.00	ND	102	53-160	4.92	21	
Carbon Disulfide	1152	10.0	"	1044.00	ND	110	76-141	3.76	18	
Methylene Chloride	469.4	50.0	"	500.000	ND	93.9	71-137	10.4	16	
trans-1,2-Dichloroethylene	525.3	10.0	"	500.000	ND	105	75-127	4.88	16	
Methyl-t-butyl Ether (MTBE)	1165	20.0	"	1030.00	ND	113	66-142	5.74	15	
1,1-Dichloroethane	504.2	10.0	"	500.000	ND	101	73-125	2.98	15	
cis-1,2-Dichloroethylene	528.0	10.0	"	494.750	ND	107	74-136	4.33	16	
2-Butanone (MEK)	1121	100	"	1000.00	ND	112	71-136	18.0	12	QR-02
Chloroform	524.8	10.0	"	500.000	ND	105	77-128	7.74	13	
1,1,1-Trichloroethane	483.2	10.0	"	499.750	ND	96.7	69-115	4.03	13	
Carbon Tetrachloride	541.5	10.0	"	500.000	ND	108	75-126	5.62	13	
Benzene	502.1	10.0	"	500.000	ND	100	77-121	7.35	12	
1,2-Dichloroethane	540.3	10.0	"	500.000	ND	108	79-119	10.5	11	
Trichloroethylene	539.6	10.0	"	500.000	ND	108	82-115	9.11	12	
1,2-Dichloropropane	502.7	10.0	"	500.000	ND	101	80-118	8.98	10	
Bromodichloromethane	489.3	10.0	"	500.000	ND	97.9	76-116	12.6	11	QR-02
cis-1,3-Dichloropropene	532.6	10.0	"	503.250	ND	106	74-113	13.4	11	QR-02
4-Methyl-2-pentanone (MIBK)	1249	50.0	"	1041.00	ND	120	69-134	19.2	13	QR-02
Toluene	516.8	10.0	"	500.000	ND	103	76-124	9.10	10	
trans-1,3-Dichloropropene	512.5	10.0	"	504.250	ND	102	76-113	9.25	10	
1,1,2-Trichloroethane	478.7	10.0	"	500.000	ND	95.7	77-120	14.4	11	QR-02
Tetrachloroethylene	534.3	10.0	"	500.000	ND	107	80-114	9.67	17	
2-Hexanone (MBK)	1250	50.0	"	1118.00	ND	112	66-133	20.6	13	QR-02
Dibromochloromethane	533.7	10.0	"	495.000	ND	108	80-119	11.3	14	
Chlorobenzene	474.7	10.0	"	500.000	ND	94.9	80-112	13.3	14	
Ethylbenzene	507.8	10.0	"	500.000	ND	102	74-113	11.9	15	
Xylenes, total	1456	20.0	"	1500.00	ND	97.1	76-112	8.91	15	
Bromoform	521.6	10.0	"	500.000	ND	104	76-120	13.8	15	
1,1,2,2-Tetrachloroethane	514.5	10.0	"	498.500	ND	103	61-129	15.8	26	
1,3-Dichlorobenzene	513.6	10.0	"	500.000	ND	103	71-122	10.1	26	
1,4-Dichlorobenzene	511.4	10.0	"	500.000	ND	102	71-125	3.99	23	
1,2-Dichlorobenzene	522.6	10.0	"	500.000	ND	105	70-123	15.7	25	
Surrogate: Dibromofluoromethane	498		"	502.280		99.1	79-130			
Surrogate: 1,2-Dichloroethane-d4	543		"	503.120		108	68-134			
Surrogate: Toluene-d8	518		"	502.360		103	87-116			
Surrogate: 4-Bromofluorobenzene	504		"	504.000		100	84-112			

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0835 - EPA 5030 Soil GC Low

Blank (1EL0835-BLK1)

Prepared: 12/15/21 Analyzed: 12/16/21

Chloromethane	ND	0.002	mg/kg wet							
Vinyl Chloride	ND	0.002	"							
Bromomethane	ND	0.002	"							
Chloroethane	ND	0.002	"							
1,1-Dichloroethylene	ND	0.002	"							
Acetone	ND	0.050	"							
Carbon Disulfide	ND	0.005	"							
Methylene Chloride	ND	0.050	"							
trans-1,2-Dichloroethylene	ND	0.002	"							
Methyl-t-butyl Ether (MTBE)	ND	0.002	"							
1,1-Dichloroethane	ND	0.002	"							
cis-1,2-Dichloroethylene	ND	0.002	"							
2-Butanone (MEK)	ND	0.005	"							
Chloroform	ND	0.002	"							
1,1,1-Trichloroethane	ND	0.002	"							
Carbon Tetrachloride	ND	0.002	"							
Benzene	ND	0.002	"							
1,2-Dichloroethane	ND	0.002	"							
Trichloroethylene	ND	0.002	"							
1,2-Dichloropropane	ND	0.002	"							
Bromodichloromethane	ND	0.002	"							
cis-1,3-Dichloropropene	ND	0.001	"							
4-Methyl-2-pentanone (MIBK)	ND	0.005	"							
Toluene	ND	0.002	"							
trans-1,3-Dichloropropene	ND	0.001	"							
1,1,2-Trichloroethane	ND	0.001	"							
Tetrachloroethylene	ND	0.002	"							
2-Hexanone (MBK)	ND	0.005	"							
Dibromochloromethane	ND	0.001	"							
Chlorobenzene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.004	"							
Bromoform	ND	0.001	"							
1,1,2,2-Tetrachloroethane	ND	0.002	"							
1,3-Dichlorobenzene	ND	0.002	"							
1,4-Dichlorobenzene	ND	0.002	"							
1,2-Dichlorobenzene	ND	0.002	"							
Surrogate: Dibromofluoromethane	0.05340		"	0.0502280		106	63-132			
Surrogate: 1,2-Dichloroethane-d4	0.05565		"	0.0503120		111	55-137			
Surrogate: Toluene-d8	0.05146		"	0.0502360		102	73-130			
Surrogate: 4-Bromofluorobenzene	0.04913		"	0.0504000		97.5	65-127			

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0835 - EPA 5030 Soil GC Low

LCS (1EL0835-BS1)

Prepared & Analyzed: 12/15/21

Chloromethane	0.0270	0.002	mg/kg wet	0.0300000		89.9	47-145			
Vinyl Chloride	0.0341	0.002	"	0.0300000		114	43-160			
Bromomethane	0.0344	0.002	"	0.0300000		115	35-151			
Chloroethane	0.0259	0.002	"	0.0300000		86.3	23-155			
1,1-Dichloroethylene	0.0516	0.002	"	0.0500000		103	59-151			
Acetone	0.1131	0.050	"	0.102200		111	31-180			
Carbon Disulfide	0.1095	0.005	"	0.104400		105	54-154			
Methylene Chloride	0.0501	0.050	"	0.0500000		100	62-134			
trans-1,2-Dichloroethylene	0.0542	0.002	"	0.0500000		108	55-143			
Methyl-t-butyl Ether (MTBE)	0.1177	0.002	"	0.103000		114	62-143			
1,1-Dichloroethane	0.0532	0.002	"	0.0500000		106	52-142			
cis-1,2-Dichloroethylene	0.0574	0.002	"	0.0494750		116	65-139			
2-Butanone (MEK)	0.1108	0.005	"	0.100000		111	66-137			
Chloroform	0.0564	0.002	"	0.0500000		113	57-144			
1,1,1-Trichloroethane	0.0511	0.002	"	0.0499750		102	59-123			
Carbon Tetrachloride	0.0542	0.002	"	0.0500000		108	60-137			
Benzene	0.0531	0.002	"	0.0500000		106	73-128			
1,2-Dichloroethane	0.0553	0.002	"	0.0500000		111	68-123			
Trichloroethylene	0.0549	0.002	"	0.0500000		110	72-124			
1,2-Dichloropropane	0.0550	0.002	"	0.0500000		110	72-123			
Bromodichloromethane	0.0536	0.002	"	0.0500000		107	71-117			
cis-1,3-Dichloropropene	0.0534	0.001	"	0.0503250		106	72-118			
4-Methyl-2-pentanone (MIBK)	0.1167	0.005	"	0.104100		112	70-125			
Toluene	0.0542	0.002	"	0.0500000		108	70-132			
trans-1,3-Dichloropropene	0.0523	0.001	"	0.0504250		104	74-118			
1,1,2-Trichloroethane	0.0527	0.001	"	0.0500000		105	74-120			
Tetrachloroethylene	0.0518	0.002	"	0.0500000		104	70-129			
2-Hexanone (MBK)	0.1283	0.005	"	0.111800		115	56-142			
Dibromochloromethane	0.0545	0.001	"	0.0495000		110	70-124			
Chlorobenzene	0.0521	0.002	"	0.0500000		104	70-122			
Ethylbenzene	0.0529	0.002	"	0.0500000		106	62-129			
Xylenes, total	0.1661	0.004	"	0.150000		111	66-124			
Bromoform	0.0544	0.001	"	0.0500000		109	68-124			
1,1,2,2-Tetrachloroethane	0.0525	0.002	"	0.0498500		105	52-128			
1,3-Dichlorobenzene	0.0507	0.002	"	0.0500000		101	59-127			
1,4-Dichlorobenzene	0.0506	0.002	"	0.0500000		101	61-130			
1,2-Dichlorobenzene	0.0511	0.002	"	0.0500000		102	60-127			
Surrogate: Dibromofluoromethane	0.04975		"	0.0502280		99.0	63-132			
Surrogate: 1,2-Dichloroethane-d4	0.05016		"	0.0503120		99.7	55-137			
Surrogate: Toluene-d8	0.05006		"	0.0502360		99.6	73-130			
Surrogate: 4-Bromofluorobenzene	0.05008		"	0.0504000		99.4	65-127			

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0835 - EPA 5030 Soil GC Low

LCS Dup (1EL0835-bsd1)

Prepared & Analyzed: 12/15/21

Chloromethane	0.0315	0.002	mg/kg wet	0.0300000	105	47-145	15.5	29	
Vinyl Chloride	0.0396	0.002	"	0.0300000	132	43-160	14.8	27	
Bromomethane	0.0401	0.002	"	0.0300000	134	35-151	15.5	30	
Chloroethane	0.0335	0.002	"	0.0300000	112	23-155	25.5	30	
1,1-Dichloroethylene	0.0606	0.002	"	0.0500000	121	59-151	16.1	24	
Acetone	0.1336	0.050	"	0.102200	131	31-180	16.6	30	
Carbon Disulfide	0.1319	0.005	"	0.104400	126	54-154	18.5	23	
Methylene Chloride	0.0547	0.050	"	0.0500000	109	62-134	8.74	25	
trans-1,2-Dichloroethylene	0.0572	0.002	"	0.0500000	114	55-143	5.44	26	
Methyl-t-butyl Ether (MTBE)	0.1211	0.002	"	0.103000	118	62-143	2.86	26	
1,1-Dichloroethane	0.0554	0.002	"	0.0500000	111	52-142	3.92	26	
cis-1,2-Dichloroethylene	0.0578	0.002	"	0.0494750	117	65-139	0.521	26	
2-Butanone (MEK)	0.1102	0.005	"	0.100000	110	66-137	0.588	30	
Chloroform	0.0579	0.002	"	0.0500000	116	57-144	2.73	21	
1,1,1-Trichloroethane	0.0516	0.002	"	0.0499750	103	59-123	0.935	23	
Carbon Tetrachloride	0.0544	0.002	"	0.0500000	109	60-137	0.405	24	
Benzene	0.0550	0.002	"	0.0500000	110	73-128	3.40	19	
1,2-Dichloroethane	0.0548	0.002	"	0.0500000	110	68-123	0.781	22	
Trichloroethylene	0.0570	0.002	"	0.0500000	114	72-124	3.74	22	
1,2-Dichloropropane	0.0553	0.002	"	0.0500000	111	72-123	0.562	21	
Bromodichloromethane	0.0536	0.002	"	0.0500000	107	71-117	0.0187	21	
cis-1,3-Dichloropropene	0.0540	0.001	"	0.0503250	107	72-118	1.10	22	
4-Methyl-2-pentanone (MIBK)	0.1195	0.005	"	0.104100	115	70-125	2.37	29	
Toluene	0.0558	0.002	"	0.0500000	112	70-132	2.80	25	
trans-1,3-Dichloropropene	0.0530	0.001	"	0.0504250	105	74-118	1.50	22	
1,1,2-Trichloroethane	0.0537	0.001	"	0.0500000	107	74-120	1.94	22	
Tetrachloroethylene	0.0532	0.002	"	0.0500000	106	70-129	2.65	20	
2-Hexanone (MBK)	0.1289	0.005	"	0.111800	115	56-142	0.521	30	
Dibromochloromethane	0.0545	0.001	"	0.0495000	110	70-124	0.0917	22	
Chlorobenzene	0.0527	0.002	"	0.0500000	105	70-122	1.11	23	
Ethylbenzene	0.0539	0.002	"	0.0500000	108	62-129	1.93	24	
Xylenes, total	0.1678	0.004	"	0.150000	112	66-124	1.00	24	
Bromoform	0.0555	0.001	"	0.0500000	111	68-124	1.95	25	
1,1,2,2-Tetrachloroethane	0.0527	0.002	"	0.0498500	106	52-128	0.361	30	
1,3-Dichlorobenzene	0.0524	0.002	"	0.0500000	105	59-127	3.43	28	
1,4-Dichlorobenzene	0.0522	0.002	"	0.0500000	104	61-130	2.98	27	
1,2-Dichlorobenzene	0.0537	0.002	"	0.0500000	107	60-127	5.00	30	
Surrogate: Dibromofluoromethane	0.04901		"	0.0502280	97.6	63-132			
Surrogate: 1,2-Dichloroethane-d4	0.04810		"	0.0503120	95.6	55-137			
Surrogate: Toluene-d8	0.05014		"	0.0502360	99.8	73-130			
Surrogate: 4-Bromofluorobenzene	0.04977		"	0.0504000	98.8	65-127			

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0835 - EPA 5030 Soil GC Low

Matrix Spike (1EL0835-MS1)	Source: 1EL1284-05			Prepared & Analyzed: 12/15/21						
Chloromethane	0.1696	0.010	mg/kg dry	0.161585	ND	105	39-144			
Vinyl Chloride	0.2083	0.010	"	0.161585	ND	129	34-155			
Bromomethane	0.2269	0.010	"	0.161585	ND	140	21-148			
Chloroethane	0.1759	0.010	"	0.161585	ND	109	10-155			
1,1-Dichloroethylene	0.2855	0.010	"	0.269308	ND	106	46-149			
Acetone	1.450	0.240	"	0.550466	ND	263	22-193			QS-01
Carbon Disulfide	0.6032	0.024	"	0.562316	ND	107	24-162			
Methylene Chloride	0.3034	0.240	"	0.269308	ND	113	42-147			
trans-1,2-Dichloroethylene	0.2846	0.010	"	0.269308	ND	106	44-141			
Methyl-t-butyl Ether (MTBE)	0.6379	0.010	"	0.554775	ND	115	53-145			
1,1-Dichloroethane	0.2905	0.010	"	0.269308	ND	108	39-143			
cis-1,2-Dichloroethylene	0.3094	0.010	"	0.266481	ND	116	55-137			
2-Butanone (MEK)	0.5973	0.024	"	0.538617	ND	111	21-173			
Chloroform	0.3060	0.010	"	0.269308	ND	114	54-135			
1,1,1-Trichloroethane	0.2685	0.010	"	0.269174	ND	99.7	47-122			
Carbon Tetrachloride	0.2896	0.010	"	0.269308	ND	108	51-132			
Benzene	0.2868	0.010	"	0.269308	ND	106	59-127			
1,2-Dichloroethane	0.2935	0.010	"	0.269308	ND	109	59-124			
Trichloroethylene	0.2973	0.010	"	0.269308	ND	110	40-151			
1,2-Dichloropropane	0.2955	0.010	"	0.269308	ND	110	62-124			
Bromodichloromethane	0.2839	0.010	"	0.269308	ND	105	62-117			
cis-1,3-Dichloropropene	0.2822	0.005	"	0.271059	ND	104	60-118			
4-Methyl-2-pentanone (MIBK)	0.6447	0.024	"	0.560700	ND	115	66-134			
Toluene	0.2894	0.010	"	0.269308	ND	107	61-128			
trans-1,3-Dichloropropene	0.2831	0.005	"	0.271598	ND	104	61-119			
1,1,2-Trichloroethane	0.2893	0.005	"	0.269308	ND	107	66-121			
Tetrachloroethylene	0.2811	0.010	"	0.269308	ND	104	51-130			
2-Hexanone (MBK)	0.7349	0.024	"	0.602174	ND	122	37-168			
Dibromochloromethane	0.2929	0.005	"	0.266615	ND	110	67-122			
Chlorobenzene	0.2775	0.010	"	0.269308	ND	103	57-120			
Ethylbenzene	0.2829	0.010	"	0.269308	ND	105	42-137			
Xylenes, total	0.8831	0.019	"	0.807925	ND	109	53-123			
Bromoform	0.2940	0.005	"	0.269308	ND	109	57-129			
1,1,2,2-Tetrachloroethane	0.2897	0.010	"	0.268500	ND	108	33-141			
1,3-Dichlorobenzene	0.2753	0.010	"	0.269308	ND	102	49-124			
1,4-Dichlorobenzene	0.2732	0.010	"	0.269308	ND	101	50-128			
1,2-Dichlorobenzene	0.2745	0.010	"	0.269308	ND	102	44-126			
Surrogate: Dibromofluoromethane	0.2748		"	0.270536		102	63-132			
Surrogate: 1,2-Dichloroethane-d4	0.2675		"	0.270989		98.7	55-137			
Surrogate: Toluene-d8	0.2700		"	0.270580		99.8	73-130			
Surrogate: 4-Bromofluorobenzene	0.2697		"	0.271463		99.4	65-127			

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0835 - EPA 5030 Soil GC Low

Matrix Spike Dup (1EL0835-MSD1)	Source: 1EL1284-05			Prepared & Analyzed: 12/15/21						
Chloromethane	0.1572	0.009	mg/kg dry	0.151395	ND	104	39-144	7.56	30	
Vinyl Chloride	0.1953	0.009	"	0.151395	ND	129	34-155	6.41	30	
Bromomethane	0.2097	0.009	"	0.151395	ND	139	21-148	7.87	30	
Chloroethane	0.1617	0.009	"	0.151395	ND	107	10-155	8.43	30	
1,1-Dichloroethylene	0.2905	0.009	"	0.252325	ND	115	46-149	1.74	30	
Acetone	1.490	0.225	"	0.515752	ND	289	22-193	2.75	30	QS-01
Carbon Disulfide	0.6352	0.023	"	0.526854	ND	121	24-162	5.17	30	
Methylene Chloride	0.3098	0.225	"	0.252325	ND	123	42-147	2.07	30	
trans-1,2-Dichloroethylene	0.2754	0.009	"	0.252325	ND	109	44-141	3.25	30	
Methyl-t-butyl Ether (MTBE)	0.6138	0.009	"	0.519789	ND	118	53-145	3.86	30	
1,1-Dichloroethane	0.2709	0.009	"	0.252325	ND	107	39-143	6.98	30	
cis-1,2-Dichloroethylene	0.2877	0.009	"	0.249676	ND	115	55-137	7.28	30	
2-Butanone (MEK)	0.4841	0.023	"	0.504650	ND	95.9	21-173	20.9	30	
Chloroform	0.2840	0.009	"	0.252325	ND	113	54-135	7.45	30	
1,1,1-Trichloroethane	0.2498	0.009	"	0.252199	ND	99.0	47-122	7.24	30	
Carbon Tetrachloride	0.2643	0.009	"	0.252325	ND	105	51-132	9.13	30	
Benzene	0.2686	0.009	"	0.252325	ND	106	59-127	6.57	30	
1,2-Dichloroethane	0.2710	0.009	"	0.252325	ND	107	59-124	7.99	25	
Trichloroethylene	0.2737	0.009	"	0.252325	ND	108	40-151	8.28	30	
1,2-Dichloropropane	0.2752	0.009	"	0.252325	ND	109	62-124	7.11	29	
Bromodichloromethane	0.2679	0.009	"	0.252325	ND	106	62-117	5.79	29	
cis-1,3-Dichloropropene	0.2613	0.005	"	0.253965	ND	103	60-118	7.70	28	
4-Methyl-2-pentanone (MIBK)	0.5833	0.023	"	0.525340	ND	111	66-134	9.99	30	
Toluene	0.2702	0.009	"	0.252325	ND	107	61-128	6.87	28	
trans-1,3-Dichloropropene	0.2633	0.005	"	0.254470	ND	103	61-119	7.24	28	
1,1,2-Trichloroethane	0.2618	0.005	"	0.252325	ND	104	66-121	10.0	27	
Tetrachloroethylene	0.2548	0.009	"	0.252325	ND	101	51-130	9.82	30	
2-Hexanone (MBK)	0.6894	0.023	"	0.564198	ND	122	37-168	6.40	30	
Dibromochloromethane	0.2717	0.005	"	0.249802	ND	109	67-122	7.51	26	
Chlorobenzene	0.2547	0.009	"	0.252325	ND	101	57-120	8.57	30	
Ethylbenzene	0.2576	0.009	"	0.252325	ND	102	42-137	9.35	30	
Xylenes, total	0.8053	0.018	"	0.756975	ND	106	53-123	9.22	30	
Bromoform	0.2666	0.005	"	0.252325	ND	106	57-129	9.78	29	
1,1,2,2-Tetrachloroethane	0.2566	0.009	"	0.251568	ND	102	33-141	12.1	30	
1,3-Dichlorobenzene	0.2351	0.009	"	0.252325	ND	93.2	49-124	15.8	30	
1,4-Dichlorobenzene	0.2353	0.009	"	0.252325	ND	93.2	50-128	14.9	29	
1,2-Dichlorobenzene	0.2380	0.009	"	0.252325	ND	94.3	44-126	14.2	27	
Surrogate: Dibromofluoromethane	0.2506		"	0.253476		98.8	63-132			
Surrogate: 1,2-Dichloroethane-d4	0.2469		"	0.253899		97.2	55-137			
Surrogate: Toluene-d8	0.2538		"	0.253516		100	73-130			
Surrogate: 4-Bromofluorobenzene	0.2541		"	0.254344		99.9	65-127			

Terracon Environmental-Bettendorf
870 40th Ave
Bettendorf, IA 52722

Project: Environmental Sampling
Project Number: Stanwood
Project Manager: Joshua F. Cox

Reported
01/04/22 12:59

Determination of Extractable Petroleum Hydrocarbons - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0839 - 3510C OA-2 Sep Fnl

Blank (1EL0839-BLK1)										
					Prepared: 12/15/21 Analyzed: 12/22/21					
TEH, as gasoline	ND	0.1	mg/L							
TEH, as #2 diesel fuel	ND	0.1	"							
TEH, as waste oil	ND	0.1	"							
Total Extractable Hydrocarbons	ND	0.1	"							

<i>Surrogate: Pentacosane</i>	<i>0.0509</i>		"	<i>0.0500000</i>		<i>102</i>	<i>15-179</i>			
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LCS (1EL0839-BS1)										
					Prepared: 12/15/21 Analyzed: 12/22/21					
TEH, as #2 diesel fuel	1.43	0.1	mg/L	2.03360		70.2	33-115			
<i>Surrogate: Pentacosane</i>	<i>0.0527</i>		"	<i>0.0500000</i>		<i>105</i>	<i>15-179</i>			

<i>Surrogate: Pentacosane</i>	<i>0.0527</i>		"	<i>0.0500000</i>		<i>105</i>	<i>15-179</i>			
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LCS Dup (1EL0839-BSD1)										
					Prepared: 12/15/21 Analyzed: 12/22/21					
TEH, as #2 diesel fuel	1.46	0.1	mg/L	2.03360		71.9	33-115	2.48	30	
<i>Surrogate: Pentacosane</i>	<i>0.0521</i>		"	<i>0.0500000</i>		<i>104</i>	<i>15-179</i>			

<i>Surrogate: Pentacosane</i>	<i>0.0521</i>		"	<i>0.0500000</i>		<i>104</i>	<i>15-179</i>			
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Reference (1EL0839-SRM1)										
					Prepared: 12/15/21 Analyzed: 12/22/21					
TEH, as #2 diesel fuel	2.12	0.1	mg/L	2.03360		104	0-200			
<i>Surrogate: Pentacosane</i>	<i>0.0532</i>		"	<i>0.0500000</i>		<i>106</i>	<i>15-179</i>			

<i>Surrogate: Pentacosane</i>	<i>0.0532</i>		"	<i>0.0500000</i>		<i>106</i>	<i>15-179</i>			
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Batch 1EL1309 - 3550B OA-2 Sonic

Blank (1EL1309-BLK1)										
					Prepared: 12/27/21 Analyzed: 12/30/21					
TEH, as gasoline	ND	5	mg/kg							
TEH, as #2 diesel fuel	ND	5	"							
TEH, as waste oil	ND	5	"							
Total Extractable Hydrocarbons	ND	5	"							
<i>Surrogate: Pentacosane</i>	<i>2.09</i>		"	<i>2.50000</i>		<i>83.6</i>	<i>15-180</i>			

<i>Surrogate: Pentacosane</i>	<i>2.09</i>		"	<i>2.50000</i>		<i>83.6</i>	<i>15-180</i>			
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Determination of Extractable Petroleum Hydrocarbons - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL1309 - 3550B OA-2 Sonic

LCS (1EL1309-BS1)				Prepared: 12/27/21 Analyzed: 12/30/21	
TEH, as #2 diesel fuel	49.2	5	mg/kg	101.680	48.3 29-114
Surrogate: Pentacosane	1.52		"	2.50000	60.7 15-180
Matrix Spike (1EL1309-MS1)		Source: 1EL1284-10		Prepared: 12/27/21 Analyzed: 12/30/21	
TEH, as #2 diesel fuel	62.8	5	mg/kg	101.578	ND 61.8 13-114
Surrogate: Pentacosane	1.91		"	2.49750	76.5 15-180
Matrix Spike Dup (1EL1309-MSD1)		Source: 1EL1284-10		Prepared: 12/27/21 Analyzed: 12/30/21	
TEH, as #2 diesel fuel	56.8	5	mg/kg	101.680	ND 55.8 13-114 10.0 30
Surrogate: Pentacosane	1.88		"	2.50000	75.2 15-180
Reference (1EL1309-SRM1)				Prepared: 12/27/21 Analyzed: 12/30/21	
TEH, as #2 diesel fuel	110.1	5	mg/kg	101.680	108 0-200
Surrogate: Pentacosane	2.56		"	2.50000	103 15-180

Terracon Environmental-Bettendorf 870 40th Ave Bettendorf, IA 52722	Project: Environmental Sampling Project Number: Stanwood Project Manager: Joshua F. Cox	Reported 01/04/22 12:59
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Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0750 - Wet Chem Preparation

Duplicate (1EL0750-DUP1)	Source: 1EL1066-01		Prepared: 12/14/21 Analyzed: 12/16/21							
% Solids	16.6	0.10	%		16.7			0.660	11	

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Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0763 - Dissolved Metal Prep

Blank (1EL0763-BLK1)

Prepared: 12/14/21 Analyzed: 12/18/21

Arsenic, dissolved	ND	0.0005	mg/L							
Barium, dissolved	ND	0.0005	"							
Cadmium, dissolved	ND	0.0002	"							
Chromium, dissolved	ND	0.0005	"							
Lead, dissolved	ND	0.0002	"							
Selenium, dissolved	ND	0.0010	"							
Silver, dissolved	ND	0.0005	"							

LCS (1EL0763-BS1)

Prepared: 12/14/21 Analyzed: 12/18/21

Arsenic, dissolved	0.0189	0.0005	mg/L	0.0200000		94.5	80-120			
Barium, dissolved	0.0183	0.0005	"	0.0200000		91.3	80-120			
Cadmium, dissolved	0.0196	0.0002	"	0.0200000		97.9	80-120			
Chromium, dissolved	0.0187	0.0005	"	0.0200000		93.7	80-120			
Lead, dissolved	0.0197	0.0002	"	0.0200000		98.7	80-120			
Selenium, dissolved	0.0188	0.0010	"	0.0200000		93.9	80-120			
Silver, dissolved	0.0200	0.0005	"	0.0200000		100	80-120			

Matrix Spike (1EL0763-MS1)

Source: 1EL1284-07

Prepared: 12/14/21 Analyzed: 12/18/21

Arsenic, dissolved	0.0837	0.0020	mg/L	0.0816326	0.0050	96.5	75-125			
Barium, dissolved	0.246	0.0020	"	0.0816326	0.161	105	75-125			
Cadmium, dissolved	0.0677	0.0008	"	0.0816326	ND	82.9	75-125			
Chromium, dissolved	0.0737	0.0020	"	0.0816326	ND	90.2	75-125			
Lead, dissolved	0.0752	0.0008	"	0.0816326	ND	92.1	75-125			
Selenium, dissolved	0.0750	0.0040	"	0.0816326	0.0017	89.8	75-125			
Silver, dissolved	0.0660	0.0020	"	0.0816326	ND	80.9	75-125			

Matrix Spike Dup (1EL0763-MSD1)

Source: 1EL1284-07

Prepared: 12/14/21 Analyzed: 12/18/21

Arsenic, dissolved	0.0854	0.0020	mg/L	0.0816326	0.0050	98.6	75-125	2.06	20	
Barium, dissolved	0.248	0.0020	"	0.0816326	0.161	107	75-125	0.747	20	
Cadmium, dissolved	0.0669	0.0008	"	0.0816326	ND	82.0	75-125	1.13	20	
Chromium, dissolved	0.0722	0.0020	"	0.0816326	ND	88.5	75-125	1.97	20	
Lead, dissolved	0.0748	0.0008	"	0.0816326	ND	91.7	75-125	0.427	20	
Selenium, dissolved	0.0739	0.0040	"	0.0816326	0.0017	88.4	75-125	1.50	20	
Silver, dissolved	0.0666	0.0020	"	0.0816326	ND	81.6	75-125	0.899	10	

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Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1EL0772 - EPA 7470A Hg Water										
Blank (1EL0772-BLK1)										
				Prepared: 12/15/21 Analyzed: 12/17/21						
Mercury, dissolved	ND	0.00050	mg/L							
LCS (1EL0772-BS1)										
				Prepared: 12/15/21 Analyzed: 12/17/21						
Mercury, dissolved	0.00252	0.00050	mg/L	0.00250000		101	79-116			
Matrix Spike (1EL0772-MS1)										
				Source: 1EL0883-01			Prepared: 12/15/21 Analyzed: 12/17/21			
Mercury, dissolved	0.00252	0.00050	mg/L	0.00250000	ND	101	56-137			
Matrix Spike Dup (1EL0772-MSD1)										
				Source: 1EL0883-01			Prepared: 12/15/21 Analyzed: 12/17/21			
Mercury, dissolved	0.00232	0.00050	mg/L	0.00250000	ND	92.7	56-137	8.49	13	

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Determination of Total Metals - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0772 - EPA 7470A Hg Water

Blank (1EL0772-BLK1)		Prepared: 12/15/21 Analyzed: 12/17/21								
Mercury, total	ND	0.00050	mg/L							
LCS (1EL0772-BS1)		Prepared: 12/15/21 Analyzed: 12/17/21								
Mercury, total	0.00252	0.00050	mg/L	0.00250000		101	80-120			
Matrix Spike (1EL0772-MS1)		Source: 1EL0883-01		Prepared: 12/15/21 Analyzed: 12/17/21						
Mercury, total	0.00252	0.00050	mg/L	0.00250000	ND	101	75-125			
Matrix Spike Dup (1EL0772-MSD1)		Source: 1EL0883-01		Prepared: 12/15/21 Analyzed: 12/17/21						
Mercury, total	0.00232	0.00050	mg/L	0.00250000	ND	92.7	75-125	8.49	20	

Batch 1EL0830 - EPA 3005A Total Recoverable Metals

Blank (1EL0830-BLK1)		Prepared: 12/15/21 Analyzed: 12/20/21								
Arsenic, total	ND	0.0040	mg/L							
Barium, total	ND	0.0040	"							
Cadmium, total	ND	0.0008	"							
Chromium, total	ND	0.0080	"							
Lead, total	ND	0.0040	"							
Selenium, total	ND	0.0040	"							
Silver, total	ND	0.0040	"							
LCS (1EL0830-BS1)		Prepared: 12/15/21 Analyzed: 12/20/21								
Arsenic, total	0.0984	0.0040	mg/L	0.100000		98.4	80-120			
Barium, total	0.104	0.0040	"	0.100000		104	80-120			
Cadmium, total	0.0954	0.0008	"	0.100000		95.4	80-120			
Chromium, total	0.101	0.0080	"	0.100000		101	80-120			
Lead, total	0.0977	0.0040	"	0.100000		97.7	80-120			
Selenium, total	0.0885	0.0040	"	0.100000		88.5	80-120			
Silver, total	0.115	0.0040	"	0.100000		115	80-120			

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Determination of Total Metals - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL0830 - EPA 3005A Total Recoverable Metals

Matrix Spike (1EL0830-MS1)	Source: 1EL1284-07			Prepared: 12/15/21 Analyzed: 12/20/21						
Arsenic, total	0.142	0.0040	mg/L	0.100000	0.0480	94.5	75-125			
Barium, total	0.612	0.0040	"	0.100000	0.487	125	75-125			
Cadmium, total	0.0790	0.0008	"	0.100000	0.0012	77.9	75-125			
Chromium, total	0.149	0.0080	"	0.100000	0.0588	89.8	75-125			
Lead, total	0.139	0.0040	"	0.100000	0.0472	91.9	75-125			
Selenium, total	0.0845	0.0040	"	0.100000	0.0075	77.0	75-125			
Silver, total	0.100	0.0040	"	0.100000	ND	100	75-125			

Matrix Spike Dup (1EL0830-MSD1)	Source: 1EL1284-07			Prepared: 12/15/21 Analyzed: 12/20/21						
Arsenic, total	0.139	0.0040	mg/L	0.100000	0.0480	91.4	75-125	2.15	20	
Barium, total	0.585	0.0040	"	0.100000	0.487	98.7	75-125	4.43	20	
Cadmium, total	0.0804	0.0008	"	0.100000	0.0012	79.2	75-125	1.69	20	
Chromium, total	0.146	0.0080	"	0.100000	0.0588	87.3	75-125	1.70	20	
Lead, total	0.137	0.0040	"	0.100000	0.0472	90.2	75-125	1.26	20	
Selenium, total	0.0846	0.0040	"	0.100000	0.0075	77.1	75-125	0.207	20	
Silver, total	0.103	0.0040	"	0.100000	ND	103	75-125	2.29	20	

Post Spike (1EL0830-PS1)	Source: 1EL1284-07			Prepared: 12/15/21 Analyzed: 12/20/21						
Arsenic, total	0.126		mg/L	0.0800000	0.0471	98.1	80-120			
Barium, total	0.596		"	0.0800000	0.477	148	80-120			PS-4X
Cadmium, total	0.0644		"	0.0800000	0.0012	79.1	80-120			PS-01
Chromium, total	0.137		"	0.0800000	0.0576	98.8	80-120			
Lead, total	0.114		"	0.0800000	0.0462	84.8	80-120			
Selenium, total	0.0705		"	0.0800000	0.0074	78.9	80-120			PS-01
Silver, total	0.0681		"	0.0800000	0.0010	83.9	80-120			

Batch 1EL1249 - EPA 3050B Digestion

Blank (1EL1249-BLK1)	Prepared: 12/27/21 Analyzed: 12/29/21		
Arsenic, total	ND	2.5	mg/kg wet
Barium, total	ND	0.50	"
Cadmium, total	ND	0.5	"
Chromium, total	ND	1.5	"
Lead, total	ND	2.5	"
Selenium, total	ND	1.5	"
Silver, total	ND	0.5	"

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Determination of Total Metals - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1EL1249 - EPA 3050B Digestion

LCS (1EL1249-BS1)

Prepared: 12/27/21 Analyzed: 12/29/21

Arsenic, total	5.5	2.5	mg/kg wet	6.00000		91.9	80-120			
Barium, total	6.25	0.50	"	6.00000		104	80-120			
Cadmium, total	5.7	0.5	"	6.00000		94.7	80-120			
Chromium, total	5.79	1.5	"	6.00000		96.4	80-120			
Lead, total	5.50	2.5	"	6.00000		91.6	80-120			
Selenium, total	6.1	1.5	"	6.00000		102	80-120			
Silver, total	5.50	0.5	"	6.00000		91.6	80-120			

Matrix Spike (1EL1249-MS1)

Source: 1EL1284-01

Prepared: 12/27/21 Analyzed: 12/29/21

Arsenic, total	10.0	2.5	mg/kg dry	7.08565	4.0	83.9	75-125			
Barium, total	108	0.51	"	7.08565	106	17.0	75-125			QM-4X
Cadmium, total	6.6	0.5	"	7.08565	0.4	88.2	75-125			
Chromium, total	16.0	1.5	"	7.08565	8.90	99.6	75-125			
Lead, total	64.3	2.5	"	7.08565	61.8	36.0	75-125			QM-07
Selenium, total	25.9	15.2	"	7.08565	ND	365	75-125			QM-07
Silver, total	6.47	0.5	"	7.08565	ND	91.4	75-125			

Matrix Spike Dup (1EL1249-MSD1)

Source: 1EL1284-01

Prepared: 12/27/21 Analyzed: 12/29/21

Arsenic, total	11.8	2.4	mg/kg dry	6.79371	4.0	114	75-125	16.6	20	
Barium, total	104	0.48	"	6.79371	106	NR	75-125	3.30	20	QM-4X
Cadmium, total	5.7	0.5	"	6.79371	0.4	79.0	75-125	14.2	20	
Chromium, total	17.4	1.5	"	6.79371	8.90	125	75-125	8.67	20	
Lead, total	81.2	2.4	"	6.79371	61.8	286	75-125	23.2	20	QM-07
Selenium, total	28.3	14.5	"	6.79371	ND	417	75-125	8.88	20	QM-07
Silver, total	5.41	0.5	"	6.79371	ND	79.6	75-125	17.9	20	

Post Spike (1EL1249-PS1)

Source: 1EL1284-01

Prepared: 12/27/21 Analyzed: 12/29/21

Arsenic, total	4.5		mg/kg dry	4.00000	0.07	111	80-120			
Barium, total	5.82		"	4.00000	1.75	102	80-120			
Cadmium, total	4.2		"	4.00000	0.006	105	80-120			
Chromium, total	4.31		"	4.00000	0.146	104	80-120			
Lead, total	5.03		"	4.00000	1.02	100	80-120			
Selenium, total	4.6		"	4.00000	0.08	113	80-120			
Silver, total	3.93		"	4.00000	0.00159	98.3	80-120			

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Determination of Total Metals - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1EL1251 - EPA 7471A Hg Solid										
Blank (1EL1251-BLK1)										
					Prepared: 12/27/21 Analyzed: 12/28/21					
Mercury, total	ND	0.05	mg/kg wet							
LCS (1EL1251-BS1)										
					Prepared: 12/27/21 Analyzed: 12/28/21					
Mercury, total	0.19	0.05	mg/kg wet	0.200000		95.2	80-120			
Matrix Spike (1EL1251-MS1)										
					Source: 1EL1284-01 Prepared: 12/27/21 Analyzed: 12/28/21					
Mercury, total	0.57	0.05	mg/kg dry	0.227671	0.22	154	80-120			QM-07
Matrix Spike Dup (1EL1251-MSD1)										
					Source: 1EL1284-01 Prepared: 12/27/21 Analyzed: 12/28/21					
Mercury, total	0.52	0.05	mg/kg dry	0.228696	0.22	131	80-120	9.28	30	QM-07

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Certified Analyses Included in This Report

Method/Matrix	Analyte	Certifications
<i>EPA 6010B in Sludge</i>		
	Arsenic, total	SIA1X,KS-NT
	Barium, total	SIA1X,KS-NT
	Cadmium, total	SIA1X,KS-NT
	Chromium, total	SIA1X,KS-NT
	Lead, total	SIA1X,KS-NT
	Selenium, total	SIA1X,KS-NT
	Silver, total	SIA1X,KS-NT
<i>EPA 6020A in Water</i>		
	Arsenic, dissolved	SIA1X,KS-NT
	Arsenic, total	SIA1X,KS-NT
	Barium, dissolved	SIA1X,KS-NT
	Barium, total	SIA1X,KS-NT
	Cadmium, dissolved	SIA1X,KS-NT
	Cadmium, total	SIA1X,KS-NT
	Chromium, dissolved	SIA1X,KS-NT
	Chromium, total	SIA1X,KS-NT
	Lead, dissolved	SIA1X,KS-NT
	Lead, total	SIA1X,KS-NT
	Selenium, dissolved	SIA1X,KS-NT
	Selenium, total	SIA1X,KS-NT
	Silver, dissolved	SIA1X,KS-NT
	Silver, total	SIA1X,KS-NT
<i>EPA 7470A in Water</i>		
	Mercury, dissolved	IA-NT,KS-NT
<i>EPA 7471A in Sludge</i>		
	Mercury, total	KS-NT,SIA1X
<i>EPA 8260B in Soil</i>		
	Chloromethane	KS-NT,SIA1X
	Vinyl Chloride	KS-NT,SIA1X
	Bromomethane	KS-NT,SIA1X
	Chloroethane	KS-NT,SIA1X
	1,1-Dichloroethylene	KS-NT,SIA1X
	Acetone	KS-NT,SIA1X
	Carbon Disulfide	KS-NT,SIA1X
	Methylene Chloride	KS-NT,SIA1X
	trans-1,2-Dichloroethylene	KS-NT,SIA1X
	Methyl-t-butyl Ether (MTBE)	KS-NT,SIA1X
	1,1-Dichloroethane	KS-NT,SIA1X
	cis-1,2-Dichloroethylene	KS-NT,SIA1X
	2-Butanone (MEK)	KS-NT,SIA1X
	Chloroform	KS-NT,SIA1X
	1,1,1-Trichloroethane	KS-NT,SIA1X
	Carbon Tetrachloride	KS-NT,SIA1X
	Benzene	KS-NT,SIA1X

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1,2-Dichloroethane	KS-NT,SIA1X
Trichloroethylene	KS-NT,SIA1X
1,2-Dichloropropane	KS-NT,SIA1X
Bromodichloromethane	KS-NT,SIA1X
cis-1,3-Dichloropropene	KS-NT,SIA1X
4-Methyl-2-pentanone (MIBK)	KS-NT,SIA1X
Toluene	KS-NT,SIA1X
trans-1,3-Dichloropropene	KS-NT,SIA1X
1,1,2-Trichloroethane	KS-NT,SIA1X
Tetrachloroethylene	KS-NT,SIA1X
2-Hexanone (MBK)	KS-NT,SIA1X
Dibromochloromethane	KS-NT,SIA1X
Chlorobenzene	KS-NT,SIA1X
Ethylbenzene	KS-NT,SIA1X
Xylenes, total	KS-NT,SIA1X
Bromoform	KS-NT,SIA1X
1,1,2,2-Tetrachloroethane	KS-NT,SIA1X
1,3-Dichlorobenzene	KS-NT,SIA1X
1,4-Dichlorobenzene	KS-NT,SIA1X
1,2-Dichlorobenzene	KS-NT,SIA1X

EPA 8260B in Water

Chloromethane	KS-NT,SIA1X
Vinyl Chloride	KS-NT,SIA1X
Bromomethane	KS-NT,SIA1X
Chloroethane	KS-NT,SIA1X
1,1-Dichloroethylene	KS-NT,SIA1X
Acetone	KS-NT,SIA1X
Carbon Disulfide	KS-NT,SIA1X
Methylene Chloride	KS-NT,SIA1X
trans-1,2-Dichloroethylene	KS-NT,SIA1X
Methyl-t-butyl Ether (MTBE)	KS-NT,SIA1X
1,1-Dichloroethane	KS-NT,SIA1X
cis-1,2-Dichloroethylene	KS-NT,SIA1X
2-Butanone (MEK)	KS-NT,SIA1X
Chloroform	KS-NT,SIA1X
1,1,1-Trichloroethane	KS-NT,SIA1X
Carbon Tetrachloride	KS-NT,SIA1X
Benzene	KS-NT,SIA1X
1,2-Dichloroethane	KS-NT,SIA1X
Trichloroethylene	KS-NT,SIA1X
1,2-Dichloropropane	KS-NT,SIA1X
Bromodichloromethane	KS-NT,SIA1X
cis-1,3-Dichloropropene	KS-NT,SIA1X
4-Methyl-2-pentanone (MIBK)	KS-NT,SIA1X
Toluene	KS-NT,SIA1X
trans-1,3-Dichloropropene	KS-NT,SIA1X
1,1,2-Trichloroethane	KS-NT,SIA1X
Tetrachloroethylene	KS-NT,SIA1X
2-Hexanone (MBK)	KS-NT,SIA1X
Dibromochloromethane	KS-NT,SIA1X
Chlorobenzene	KS-NT,SIA1X

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	Ethylbenzene	KS-NT,SIA1X
	Xylenes, total	KS-NT,SIA1X
	Bromoform	KS-NT,SIA1X
	1,1,2,2-Tetrachloroethane	KS-NT,SIA1X
	1,3-Dichlorobenzene	KS-NT,SIA1X
	1,4-Dichlorobenzene	KS-NT,SIA1X
	1,2-Dichlorobenzene	KS-NT,SIA1X
Iowa OA-2 in Soil		
	Total Extractable Hydrocarbons	SIA1X
Iowa OA-2 in Water		
	Total Extractable Hydrocarbons	SIA1X
SM 2540 G in Sludge		
	% Solids	SIA1X

Code	Certifying Authority	Certificate Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2022
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2022
MO-KC	Missouri Department of Natural Resources	140	04/30/2022
SIA1X	Iowa Dept. of Natural Resources (updated certifica	95	02/01/2024

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Notes and Definitions

- QS-01 The blank spike recovery and/or blank spike duplicate recovery were outside the established acceptance limits. Batch was accepted based on acceptable MS/MSD/RPD results.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
- QM-07 The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- PS-4X The spike recovery was outside of QC acceptance limits for the Post Spike due to analyte concentration at 4 times or greater the spike concentration.
- PS-01 The post spike recovery was below acceptance limits. However, all other QC was acceptable.
- D-12 Results in the Gasoline Range are primarily due to overlap from a heavier fuel hydrocarbon product.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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Sue Thompson
Client Services Manager