



Work Plan

Port of Dubuque Parking Lot 1/East 3rd and Bell Streets Property
320 Bell Street
Dubuque, Dubuque County, Iowa

Prepared for:

**Iowa Department of Natural Resources
Contaminated Sites Section
502 East 9th Street, 4th Floor
Des Moines, Iowa 50319**

And

**City of Dubuque
50 West 13th Street
Dubuque, Iowa 52001-4805**

Prepared by:

**Blackstone Environmental
1465 41st Street
Moline, Illinois 61265**



March 7, 2022

Work Plan
320 Bell Street
Dubuque, Iowa



Work Plan

**Port of Dubuque Parking Lot 1/East 3rd and Bell Streets Property
320 Bell Street
Dubuque, Dubuque County, Iowa
Blackstone Project # 1934.25**

Prepared for:

Mr. Hylton Jackson

Iowa Department of Natural Resources

Contaminated Sites Section

502 East 9th Street, 4th Floor

Des Moines, Iowa 50319

And

City of Dubuque

50 West 13th Street

Dubuque, Iowa 52001-4805

Prepared by:

A blue ink signature of Krista Brodersen, consisting of stylized, overlapping loops and lines.

Krista Brodersen
Senior Project Manager

Reviewed by:

A blue ink signature of Emily Smart, featuring a cursive 'E' followed by 'mily Smart' in a flowing script.

Emily Smart, CGP, PG
Senior Project Manager

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Attachment A – Monitoring Well Locations from the Draft Site Closure Report by Terracon Consultants dated December 29, 2009

Attachment B – Draft Site Closure Report by Terracon Consultants dated December 29, 2009

1 EXECUTIVE SUMMARY

Blackstone Environmental, Inc. (Blackstone) is pleased to present this Work Plan for the City of Dubuque owned property identified as Port of Dubuque Parking Lot 1/East 3rd and Bell Streets Property located at 320 Bell Street in Dubuque, Dubuque County, Iowa (Site).

Blackstone has developed a scope of work for environmental sampling based on a review of previous reports for the Site, a conversation with Mr. Hylton Jackson of the Iowa Department of Natural Resources (IDNR) in July 2021, and in general accordance with ASTM Standard E1903 - 11 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process. This scope of work is intended to comply with IDNR requirements Site sampling and to assist in obtaining closure for the Site from the IDNR.

2 BACKGROUND

The Site is the former location of an aboveground storage tank (AST) yard for Molo Oil Company. According to a Draft Site Closure Report by Terracon Consultants dated December 29, 2009 (Attachment B), assessments of the Site have indicated impacts to soil and groundwater from petroleum and the presence of free product. Benzene, toluene, ethylbenzene, and xylenes (BTEX) and naphthalene were reported above Iowa Statewide Standards (SWS) and approximately one foot of free product was present above the water table. To address the impacts, a multi-arrayed vacuum (MAV) extraction system was set up at the Site to remove free product and a hydrogen peroxide injection system was installed to dissolve petroleum hydrocarbons in groundwater. The MAV extraction system operated from July 2005 through February 2006 when free product had reportedly decreased to negligible levels. The hydrogen peroxide injection system operated from July 2005 through July 2007. In 2007, a Site Closure Evaluation was submitted to IDNR. The IDNR required monitoring of groundwater wells and installation of a deep well. Groundwater monitoring, as well as free product monitoring, was conducted from July 2007 through July 2009. According to the Draft Site Closure Report, the results of the monitoring indicated petroleum hydrocarbon concentrations in wells located in the center of the plume (generally located outside of the area of greatest petroleum impact) were generally steady or declining. The free product levels reduced from 5.40 feet in 2005 to less than 0.01 feet in 2006. The report concluded that the petroleum plume on Site was stable, not migrating, and appeared to be naturally attenuating. Recommended closure for the Site included a groundwater ordinance to prohibit the installation of drinking water wells, prohibition of future structures with basements, and limiting future construction to commercial/industrial use only.

In a discussion with Mr. Jackson on July 13, 2021, Blackstone discussed the Site and steps that need to be taken to achieve closure. Mr. Jackson stated that the recommendations in the closure report from 2009 for an environmental covenant on the Site would need to be in place. In around

2009, IDNR had requested a vapor sample be collected from a sewer line on the Site that was used to service river vessels and requested that sampling be conducted. Since the Site analytical data is over 10 years old, Mr. Jackson also requested sampling of groundwater monitoring wells at the Site. If the Site is to be developed, Mr. Jackson stated that it must be determined whether or not a vapor intrusion issue exists. Alternatively, a vapor intrusion issue can be assumed, and the planned building/structure could be constructed using a vapor membrane and a vapor mitigation system.

3 SCOPE OF WORK

Blackstone developed a scope of work for environmental sampling based on previous documents reviewed, the above referenced discussion with Mr. Jackson on July 13, 2021, and in general accordance with ASTM Standard E1903 - 11 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process.

3.1. Groundwater Sampling

Blackstone will sample up to five groundwater monitoring wells located within the approximate center and edges of the plume. The wells to be sampled include MW-3, MW-5, MW-2, SB-23, and SB-26, assuming the wells are present and usable. If these wells are not present or usable, alternate locations will be chosen. A map of the sampling locations from the Draft Site Closure Report by Terracon Consultants dated December 29, 2009, is provided in Attachment A.

Each well will be purged with a new disposable bailer or low-flow sampling equipment of a minimum of three well casing volumes of groundwater. Subsequent to sufficient recharge, one groundwater sample will be collected from each monitoring well utilizing a new, disposable, polypropylene bailer, or pump. The purged groundwater will be disposed on Site. Groundwater samples will be analyzed for total extractable hydrocarbons (TEH), BTEX, polycyclic aromatic hydrocarbons (PAHs), and lead. The results will be compared to the Iowa Statewide Standards.

3.2. Vapor Sampling

To assess vapor in the sewer line that runs through the Site and services river vessels, Blackstone will collect one vapor sample. The man-hole cover to the sewer line will be removed, and the vapor will be sampled using a laboratory supplied 1-liter summa canister that will be pre-tested and batch-certified by the laboratory. The summa canister will be connected to Teflon or Nylaflow sample tubing and placed in the sewer line. The summa canister will be equipped with laboratory-supplied flow regulators allowing for sampling collection at a low-flow rate (<200 milliliters per minute) for approximately five minutes.

Following sample collection, the summa canister will be closed, secured, and labeled with sample information. Canister pressure will be recorded upon initial sample collection, after sample collection, and at the laboratory. The vapor sample will be analyzed for volatile organic compounds (VOCs).

3.3. Report

Upon completion of groundwater and vapor sampling activities and receipt of the laboratory analytical results, a report will be prepared that will include the following:

- Documentation of field activities.
- Site plan showing sampling locations and other pertinent Site features as appropriate.
- Analytical laboratory results.
- Data evaluation and presentation of findings.
- Recommendations will be made for closure or further investigation as appropriate.

The report will be submitted to the IDNR within 30 days of receipt of the final analytical results.

3.4. Preparation of an Environmental Covenant

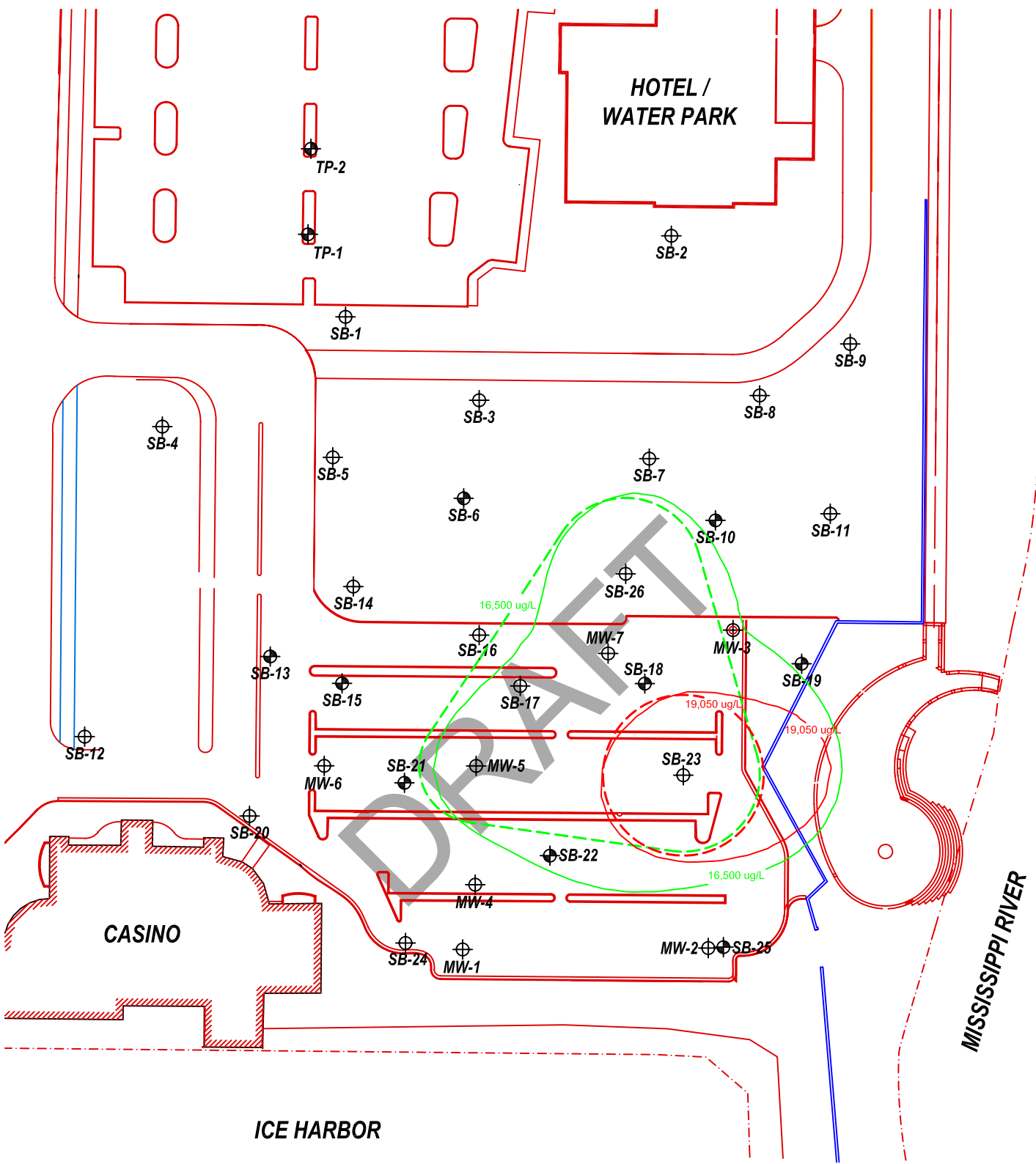
Blackstone will prepare a draft environmental covenant for the Site that includes the use of the City's Groundwater ordinance, that the Site be restricted to non-residential use, future structures on Site will be of slab-on-grade construction with no basements, and future structures will incorporate a vapor membrane and a vapor mitigation system – pending the results of the vapor testing. The environmental covenant will be prepared using IDNR template forms. Blackstone will send the IDNR a hard copy of the draft environmental covenant for review. Once approved by IDNR, a hard copy of the final environmental covenant will be sent to IDNR by Blackstone for approval. Once the environmental covenant has been approved, the City of Dubuque will sign a hard copy and record a copy of the environmental covenant with the County of Dubuque Recorder. Once recorded, the City of Dubuque will send a certified copy of the recorded environmental covenant to the IDNR.

4 LIMITATIONS

This Work Plan was prepared in accordance with that level of skill and care ordinarily exercised by other members of Blackstone's profession practicing in the same locality and under similar conditions when the services were provided. No warranties, express or implied, are intended or made.

ATTACHMENT A

**Monitoring Well Locations from the Draft Site Closure Report by Terracon Consultants
dated December 29, 2009**



LEGEND

- APPROXIMATE SOIL BORING LOCATION
- APPROXIMATE MONITORING WELL LOCATION
- ACTUAL BENZENE PLUME
- PREDICTED BENZENE PLUME
- ACTUAL TOLUENE PLUME
- PREDICTED TOLUENE PLUME



0 100
Approximate Scale
(Feet)

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MONITORING WELL LOCATIONS SITE CLOSURE REPORT CITY OF DUBUQUE PETROLEUM PLUME REMEDIATION SITE DUBUQUE, IOWA

Project Mngnr:	JFB	Terracon 870 40th Avenue Bettendorf, Iowa 52722	Project No.	07047024
Designed By:	JFB		Scale:	AS SHOWN
Drawn By:	JFB		File No.	4B024D02-SCR
Checked By:	JFB		Date:	DEC 2009
Approved By:	JFB	Figure No.	2	

ATTACHMENT B

Draft Site Closure Report by Terracon Consultants dated December 29, 2009

**SITE CLOSURE REPORT
PETROLEUM PLUME REMEDIATION SITE
EAST THIRD AND BELL
DUBUQUE, IOWA
PORT OF DUBUQUE BROWNFIELDS REDEVELOPMENT PROJECT**

**Project Number 07047024
December 29, 2009**

Prepared For:

**CITY OF DUBUQUE
Dubuque, Iowa**

Prepared By:

**TERRACON
Bettendorf, Iowa**

December 29, 2009

City of Dubuque
50 West 13th Street
Dubuque, Iowa 52001

Attention: Mr. Aaron DeJong
Assistant Economic Development Director

Re: Site Closure Report
Petroleum Plume Remediation Site
East Third and Bell
Dubuque, Iowa
Port of Dubuque Brownfields Redevelopment Project
Project Number 07047024

Dear Mr. DeJong:

Terracon presents to the City of Dubuque (City) this Site Closure Report (Report) for the petroleum plume remediation site in Dubuque, Iowa (the site).

The site is located within the larger redevelopment area known as the Port of Dubuque Brownfields Redevelopment Project (the Project). Brownfields are considered real property for the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The Brownfields Program provides financial and technical assistance for Brownfields revitalization, including grants for environmental assessment, cleanup, and job training. In June 2003, the City was awarded a \$200,000 petroleum cleanup grant (the Grant) to remediate petroleum impact at the site.

Operation of the remedial system was initiated in July 2005 and terminated in July 2007. Following the termination of remedial activities, the site entered a two-year site monitoring period to document site conditions following remedial actions and to demonstrate that residual concentrations of indicator contaminants are steady and declining.

This Report presents a summary of completed site monitoring activities associated with the cleanup of residual petroleum impact at the subject site. Based on completed activities as presented in this Report, Terracon is recommending requesting formal closure from the Iowa Department of Natural Resources (IDNR) for the petroleum remediation site.

Terracon appreciates this opportunity to be of service to the City of Dubuque, the community, and the numerous public stakeholders involved with the Project. If the City, or Iowa Department of Natural Resources have questions concerning this report, or if we may be of further assistance, please do not hesitate to contact us at the above or through the Internet at jfbrimeyer@terracon.com.

Sincerely,
TERRACON

Stephanie J. Algood, EI
Environmental Engineer

John F. Brimeyer, PE, REM
Environmental Manager

cc: Mr. Hylton Jackson, Iowa Department of Natural Resources

JFB/SJA/jb2
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**SITE CLOSURE REPORT
PETROLEUM PLUME REMEDIATION SITE
EAST THIRD AND BELL
DUBUQUE, IOWA
PORT OF DUBUQUE BROWNFIELDS REDEVELOPMENT PROJECT**

**Project Number 07047024
December 29, 2009**

1.0 INTRODUCTION

In June 2003, the City of Dubuque (City) received a United States Environmental Protection Agency (USEPA) Brownfields Cleanup Grant (the Grant) to remediate residual petroleum impact at a former bulk storage facility. The cleanup site consists of a parking lot for the Diamond Jo Casino, located adjacent to and west of the site. The cleanup site also includes a currently vacant lot north of the parking area. The site is located in Township 89 South, Range 3 East, Section 30, in Dubuque, Iowa.

1.1 Historical Site Information

The project site is the former location of a bulk petroleum aboveground storage tank (AST) yard operated by the Molo Oil Company (Molo) for over 50 years. The vacant portion of the site was formerly occupied by the Fischer Cold Storage (Fischer) facility. ASTs were reportedly located south of the former structure on the Fischer property. Previous assessment of the subject site indicated the presence of petroleum impact to soil and groundwater and the presence of light non-aqueous phase liquids (LNAPL, or free product). Previous assessment activities indicated the presence of benzene, toluene, ethylbenzene, xylenes (BTEX), and naphthalene above regulatory levels and the presence of approximately one foot of free phase petroleum product on the water table.

1.2 Remedial Activities

Terracon completed a review of historical assessment activities conducted by others and conducted an assessment for remedial design as described in the Site Assessment/Risk Evaluation/Response Action (SA/RE/RA) Report dated March 14, 2005 (Terracon Project No. 07047024). Based on Terracon's review and completed site assessment activities, the implementation of a response action consisting of a multi-arrayed vacuum (MAV™) extraction system to address light non-aqueous phase liquids (LNAPL or free product) and a hydrogen peroxide (H₂O₂) injection system to address dissolved petroleum hydrocarbons in

groundwater was recommended. The SA/RE/RA Report was submitted to the Iowa Department of Natural Resources (IDNR) for review and was approved on April 25, 2005.

Installation of the remedial system was completed in May and June of 2005 and the system was started on July 7, 2005. The MAV™ extraction system operated continuously until February 15, 2006 by which time observed free product levels had decreased to negligible levels. Terracon continued to conduct manual free product recovery of trace amounts as needed. The H₂O₂ injection system operated continuously from start-up in July 2005 until April 12, 2006 when Terracon shut down the system for a parking lot replacement project. Terracon restarted the system on May 23, 2006 and operated it until September 25, 2006 when Terracon again shut down the system for maintenance and repairs. Following completion of maintenance activities, Terracon restarted the system on January 18, 2007 and ran it until June 1, 2007.

1.3 Termination of Remedial Activities

Based on a diminished response performance, Terracon submitted a Site Closure Evaluation (Evaluation) dated May 25, 2007 (Terracon Project No. 07047024) to the IDNR. The Evaluation recommended termination of the remedial activities at the site and proposed initiation of quarterly groundwater monitoring. Operation of the remedial system was subsequently terminated on June 1, 2007.

In a response dated June 7, 2007, the IDNR requested the submittal of a work plan for proposed monitoring activities including the identification of wells to be monitored, location of wells with previously observed free product, the location and construction specifications of a deep well to delineate the vertical extent of impact, and information required to determine the allowable discharge concentration. As requested, Terracon submitted a Site Monitoring Work Plan (Work Plan) dated June 26, 2007 (Terracon Project No. 07047024) to the IDNR and initiated site monitoring activities as proposed.

2.0 GROUNDWATER MONITORING PROGRAM

In accordance with the approved Work Plan, Terracon conducted quarterly groundwater sampling of monitoring wells MW-2, MW-4, MW-5, MW-7, SB-3, SB-12, SB-23, and SB-24 from July 2007 to July 2009. Site monitoring was not completed during the first quarter 2008, as planned. As such, one additional groundwater monitoring event was completed in July 2009.

In addition to quarterly groundwater sampling, monitoring wells MW-3, MW-5, MW-6, SB-7, SB-14, SB-17, SB-23, and SB-26 were checked for the presence of free product on a

monthly basis and prior to the collection of groundwater samples. Observed free product in the monitoring wells has been collected manually and transferred to an on-site storage container pending off-site transportation and disposal. The site location is depicted on the Topographic Vicinity Map included as Figure 1, Appendix A. The locations of proposed groundwater sample locations and free product monitoring locations are depicted on the attached Figure 2, Appendix A.

In accordance with the Work Plan, Terracon has also conducted additional assessment near the source well (monitoring well SB-23) for the purpose of delineating the vertical extent of groundwater impact at the site and collected soil samples to delineate the lateral extent of benzo(a)pyrene impact in the northern portion of the site near SB-1 and SB-5.

2.1 Groundwater Monitoring

Quarterly sampling and analysis of groundwater monitoring wells at the project site began after the remediation system was shut-down in June 2007 and continued until July 2009. A summary of groundwater analytical data, including previously reported historical data is provided in Appendix B. Laboratory analytical reports for the quarterly groundwater monitoring events are provided in Appendix C.

Review of analytical data indicates that the petroleum hydrocarbon concentrations are generally steady or declining. Trend analysis of the reported benzene concentrations at MW-2, MW-6, MW-7, SB-3, SB-11, SB-14, SB-16, SB-23, and SB-26 indicate a general decline over time. These monitoring wells are generally located outside of the area of greatest petroleum hydrocarbon impact near the central portion of the plume. Charts depicting benzene concentration trends for monitoring wells MW-2, MW-6, MW-7, SB-3, SB-11, SB-14, SB-16, SB-23, and SB-26 are included as Appendix D.

The petroleum hydrocarbon concentrations at MW-3, MW-4, MW-5, SB-7, and SB-17 are generally variable. Since startup and operation of the system, the reported benzene concentrations at MW-3 and SB-7 have decreased. Trend analysis of the reported benzene concentrations at MW-4, MW-5, and SB-17 indicate a slight increase over time. These monitoring wells are generally located in the central portion of the plume area. Charts depicting benzene concentration trends for monitoring wells MW-3, MW-4, MW-5, SB-7, and SB-17 are included as Appendix D.

The remaining monitoring wells including MW-1, SB-1, SB-2, SB-4, SB-5, SB-9, SB-12, SB-20, and SB-24 are located outside of or near the limits of the plume. Reported benzene concentrations at these locations are generally below laboratory detection limits.

2.2 Free Product

Free product thickness in select monitoring wells has been measured monthly and before each groundwater sampling event. Observed free product was collected and disposed of properly. Free product recovery information is provided in Appendix E.

Following startup of the MAV™ system in July 2005, free product levels at the site were reduced from a maximum observed thickness of 5.40 feet in monitoring well SB-17 to trace levels (less than 0.01 feet) by February 2006. Subsequently, operation of the MAV™ system was suspended and manual methods were used by Terracon to recover minor accumulations of observed free product. During site monitoring activities in January 2007, Terracon observed free product in monitoring wells MW-5, MW-6, SB-7, SB-14, SB-23, and SB-26 at thicknesses of up to 0.90 feet. Terracon had not previously observed free product at monitoring wells MW-5, SB-7, and SB-23 and had previously observed free product on only one occasion at monitoring wells MW-6 (January 2004) and SB-14 (January 2005). The presence of free product over a widespread area may have been associated with an extended period of low river levels.

Soil boring logs for the site indicate the presence of 10 to 12 feet of fill material overlying a one to two foot thick silty clay layer (deposited alluvial material). The silty clay layer overlies fine to medium sands. Static water levels during normal to high river levels are generally above the silty clay layer, but drop into and below the layer during low river levels. It appears that the silty clay layer may be saturated with petroleum product in the central portion of the plume. During periods of low river levels, the product trapped in the silty clay layer likely drains into the underlying sands and accumulates on the groundwater surface as measurable free product. The measurable product observed in January and February 2007 quickly dissipated once the river levels began rising in March 2007.

Terracon continued monthly monitoring of free product levels following shut-down of the H₂O₂ injection system in June 2007. Since then, free product has been measured at a thickness greater than 0.02 feet on four occasions at monitoring well SB-17 (September 2007, December 2007, February 2008, and July 2008) and on one occasion in monitoring well SB-26 (July 2008) and monitoring well SB-23 (July 2008). Free product has not been measured at the site at a thickness greater than 0.01 feet since August 2008. Review of the recent recovery data indicates that measurable product was observed following a rapid fall in groundwater levels associated with the tail-end of river flooding events.

2.3 Vertical Extent of Impact

Terracon conducted additional assessment near SB-23 to determine the vertical extent of the impact on groundwater. Copies of laboratory analytical reports for groundwater sampling at SB-23 is provided in Appendix C.

Samples were collected from SB-23 at depths of 30 feet and 50 feet below ground surface (bgs) on August 30, 2007. BTEX compounds were reported in groundwater samples collected at both depths with the reported concentrations in the sample collected from the 50 foot depth exceeding the reported concentrations at the 30 foot depth. The reported benzene concentration at each depth exceeded the statewide standard for groundwater ingestion listed in the Tier 1 Look-up Table under Title 567 Iowa Administrative Code (567 IAC) Chapter 135. The reported concentration of toluene and ethylbenzene at a depth of 50 feet bgs exceeded the statewide standard for groundwater ingestion.

To confirm sample results, Terracon returned to the site on December 17, 2007 and resampled groundwater near SB-23 at depths of 30 feet and 50 feet bgs. BTEX compounds were reported at both depths with the reported concentration of benzene at the 50 foot depth exceeding the reported benzene concentration at the 30 foot depth. The reported benzene concentration at each depth exceeded the statewide standard for groundwater ingestion.

Terracon collected additional groundwater samples from SB-23 at depths of 75 feet and 100 feet bgs on January 9, 2008. BTEX compounds were reported above method detection limits at each sample depth. The reported benzene concentration of 20 micrograms per liter ($\mu\text{g/L}$) and 5.79 $\mu\text{g/L}$, collected at the 75-foot and 100-foot depth, respectively, exceed the most stringent Tier 1 Look-up Table Value. Although the reported benzene concentration continues to slightly exceed the Tier 1 Look-up value of 5 $\mu\text{g/L}$, further sampling is not warranted and the vertical extent of impact has been adequately characterized.

2.4 Lateral Extent of Benzo(a)Pyrene Impact

Terracon conducted additional assessment in the northern portion of the site near SB-1 and SB-5 to delineate the lateral extent of benzo(a)pyrene impact in soils. Terracon advanced two soil borings (TP-1 and TP-2) within islands in the parking lot of the Grand River Hotelk and Waterpark and collected one soil sample from each for laboratory analysis of polynuclear aromatic hydrocarbons (PAHs). Locations of the soil borings are depicted on Figure 2, Appendix A. Copies of the laboratory analytical report for soil sampling activities is provided in Appendix C.

Analytical results indicate that PAHs were not detected in either sample. The lateral extent of benzo(a)pyrene impact in soils has been adequately characterized.

2.5 Lead Impact in Groundwater

Terracon conducted additional groundwater sampling and analysis to evaluate observed lead impacts. Samples were collected from the two monitoring wells with the highest reported lead concentrations (MW-3 and SB-23). Following collection, the samples were field filtered and submitted for analysis of lead. Laboratory analysis indicates that the reported lead concentration at MW-3 decreased from 106 µg/L to 19.4 µg/L and that the reported lead concentration at SB-23 decreased from 39.2 µg/L to 6.43 µg/L. Locations of the soil borings are depicted on Figure 2, Appendix A. Copies of the laboratory analytical report for soil sampling activities is provided in Appendix C.

The reported lead concentration at MW-3 continues to exceed the cleanup objective for a protected groundwater source of 7.5 µg/L. The observed exceedance may be attributable to petroleum hydrocarbon impact, but could also be associated with uncontrolled fill, as observed at other locations within the Port of Dubuque area or could be the result of naturally occurring lead which is known to be present in the Dubuque area.

Laboratory analysis of field filtered groundwater samples resulted in a decrease of 86.6% and 83.6% at MW-3 and SB-23, respectively. Based on the consistent reduction at the two monitoring wells, it is anticipated that field filtering would result in a similar reduction at other monitoring wells with detected lead concentrations. Terracon observes that with the application of an approximate 85% reduction in lead concentrations across the site, the extent of lead impact in groundwater has been delineated at the site.

3.0 RISK ASSESSMENT

The SA/RE/RA dated March 14, 2009 included a risk assessment that identified and evaluated actual and potential receptors within the vicinity of the site. Locations of the existing receptors are identified on Figure 3, Appendix A. Based on the assessment, the following pathways are present at the site:

- Potential groundwater ingestion,
- Potential soil leaching to groundwater ingestion,
- Discharge of groundwater to surface water,
- Soil leaching to discharge of groundwater to surface water,
- Soil vapor to confined space, and

- Groundwater vapor to confined space.

Terracon then modeled the contaminant plumes using the IDNR Risk-Based Corrective Action (RBCA) Tier 2 software and ASTM equations provided as Appendix A and Appendix B of the Tier 2 Guidance Document to develop site-specific cleanup standards for contaminants of concern (COCs).

3.1 Groundwater Ingestion

The concentrations of BTEX and lead in groundwater at the site exceed the statewide standards for protected groundwater; however, actual drinking water wells are not present at or near the site. Existing non-drinking water wells, as geothermal wells at the museum and convention center and the Star Brewery well, are located within the Port of Dubuque area. Implementation of an environmental protection easement to prohibit future drinking water wells within the Port of Dubuque, allows for the use of site-specific standards that are protective of human health at the point of compliance.

For the groundwater ingestion pathway, Terracon used the Tier 2 RBCA model to demonstrate that an exceedance of BTEX statewide standards (equivalent to Tier 1 lookup values) is not predicted at the perimeter of the Port of Dubuque. Further, the modeling demonstrates that an exceedance of Tier 2 target levels for the potential groundwater ingestion pathway is not predicted at the existing non-drinking water wells within the Port of Dubuque area.

The Equation for Tier 2 Groundwater Contaminant Model was used to demonstrate that predicted groundwater concentrations of lead and naphthalene BTEX statewide standards at the perimeter of the Port of Dubuque or Tier 2 target levels for the potential groundwater ingestion pathway at the site property lines.

Pending implementation of an environmental protection easement prohibiting the installation of drinking water wells within the Port of Dubuque and prohibiting the installation of wells onsite, no further action will be required relative to the groundwater ingestion pathway.

3.2 Soil Leaching to Groundwater Ingestion

The concentrations of benzene, toluene, and ethylbenzene in soils at the site exceed the Tier 2 target levels for the soil leaching to groundwater pathway. Actual drinking water wells are not present at or near the site; however, five existing non-drinking water wells could be used in the future for drinking water purposes. Implementation of an environmental protection easement to prohibit future drinking water wells within the Port of Dubuque,

allows for the use of site-specific standards that are protective of human health at the point of compliance.

Tier 2 modeling of the soil leaching to groundwater ingestion pathway for drinking and non-drinking water wells does not result in a predicted exceedence of cleanup standards at the perimeter of the Port of Dubuque or at existing wells within the Port of Dubuque.

Pending implementation of an environmental protection easement prohibiting the installation of drinking water wells within the Port of Dubuque and prohibiting the installation of wells onsite, no further action will be required relative to the groundwater ingestion pathway.

3.3 Discharge of Groundwater to Surface Water

The concentrations of benzene and toluene in groundwater at the site exceed the Tier 2 target levels for the discharge of groundwater to surface water. In addition the concentration of PAHs and lead exceed chronic water quality criteria for Class B (WW), Significant Resource Warm Water as identified in Table 1 of 567 IAC Chapter 61.

The Tier 2 RBCA software was used to model on-site groundwater impacts to the adjacent Ice Harbor surface water body. Modeling results predict an exceedence of Tier 2 target levels at the point of compliance. Further action is required relative to the surface water pathway for benzene and toluene.

The Equation for Tier 2 Groundwater Contaminant Model was used to predict the groundwater concentration of PAHs and lead at the edge of the Ice Harbor. Based on the groundwater modeling, the maximum predicted concentrations of PAHs and lead are less than the chronic criteria established under 567 IAC Chapter 61. No further action is required relative to the surface water pathway for PAHs and lead.

3.4 Soil Leaching to Surface Water

The reported concentrations of benzene, toluene, and ethylbenzene in soil at the site exceed the Tier 2 target levels for the soil leaching to surface water pathway. The Ice Harbor, as an extension of the Mississippi River, is a Class B (WW) surface water body.

The Tier 2 RBCA software was used to model on-site soil impacts to the Ice Harbor. Modeling of the soil leaching to surface water pathway does not result in a predicted exceedence of cleanup standards at the edge of the Ice Harbor. No further action is required relative to the soil leaching to surface water pathway.

3.5 Soil Vapor to Confined Space

The reported concentration of benzene, toluene, and ethylbenzene in soil at the site exceed the Tier 2 target levels for the soil vapor to confined space pathway. Below grade structures are not present at the site; however, existing sanitary sewer lines providing sanitary service to riverboats docked in the Ice Harbor and on the riverfront are present at the site.

The Tier 2 RBCA software was used to model on-site soil impacts to potential confined space receptors located at or beyond the perimeter of the site. Modeling of the soil vapor to confined space pathway does not result in a predicted exceedence of cleanup standards at the perimeter of the site.

An environmental protection easement can be used to prohibit the installation of below-grade structures on the site. Except for the actual sanitary sewers, located on-site, no further action is required relative to the soil vapor to confined space pathway.

3.6 Groundwater Vapor to Confined Space

The reported concentration of benzene in groundwater at the site exceeds the Tier 2 target levels for the groundwater vapor to confined space pathway. Below grade structures are not present at the site; however, existing sanitary sewer lines providing sanitary service to riverboats docked in the Ice Harbor and on the riverfront are present at the site.

The Tier 2 RBCA software was used to model on-site groundwater impacts to potential confined space receptors located at or beyond the perimeter of the site. Modeling of the soil vapor to confined space pathway does not result in a predicted exceedence of cleanup standards at the perimeter of the site.

An environmental protection easement can be used to prohibit the installation of below-grade structures on the site. Except for the actual sanitary sewers, located on-site, no further action is required relative to the groundwater vapor to confined space pathway.

4.0 SURFACE WATER PATHWAY

Tier 2 modeling using the RBCA software predicts an exceedence of benzene and toluene concentrations at the edge of the Ice Harbor. To further evaluate the pathway, Terracon prepared and submitted an Allowable Rate Discharge Concentration form to the IDNR in accordance with IDNR Tier 2 Site Cleanup Guidance. Based on the information provided,

the IDNR calculated water quality-based allowable discharge calculations for the petroleum plume remediation site.

Water Quality-Based Allowable Discharge Concentrations

Pollutant	Average Concentration (µg/L)	Maximum Concentration (µg/L)	Average Mass Limit (lb/day)	Maximum Mass Limit (lb/day)
Benzene	16,500	16,500	0.166	0.166
Ethylbenzene	22,650	22,650	0.228	0.228
Toluene	19,050	19,050	0.192	0.192
Xylene	NA	NA	NA	NA

Terracon used the Tier 2 software to develop groundwater plume maps for the reported benzene and toluene concentrations. Based on the plume maps, groundwater is not discharging to the Ice Harbor in excess of the allowable discharge concentration. A plume map depicting actual benzene and toluene concentrations is attached as Figure 3 of Appendix A.

The Equation for Tier 2 Groundwater Contaminant Model was used to calculate the distance (x) from each well exceeding the allowable discharge concentration to the point of compliance. Assuming a radial distance from each well, Terracon developed groundwater plume maps for the predicted benzene and toluene concentrations. Based on the plume maps, groundwater is not predicted to discharge to the Ice Harbor in excess of the allowable discharge concentration. Predicted benzene and toluene plumes are included on Figure 4 of Appendix A. Model calculations are included as Table 2, Appendix B.

Based on the results of Tier 2 and ASTM modeling of reported groundwater concentrations to the allowable discharge concentrations, no further action is required relative to the surface water pathway for benzene and toluene.

5.0 FREE PRODUCT CONDITIONS

Review of historical data indicates that the volume of free product at the site has been significantly reduced as a result of remedial activities. Free product has been observed since recovery efforts were terminated; however, measurable product levels only seem to appear during unusual hydrologic events such as rapidly falling river levels or extreme low river levels. Under typical conditions, measurable free product is not observed.

As discussed, the free product appears to be trapped within silty clay alluvial deposits located at a depth of 10 to 12 feet bgs. These alluvial deposits are typically below the water

table under normal and high groundwater conditions. During periods of extreme low river levels, the product likely drains into the underlying sands and accumulates on the groundwater surface as measurable free product. During periods of high river conditions, the increased static pressure within the alluvial deposits likely smears free product into overlying sandy soils. As water levels fall after a flood condition, the smeared product accumulates on the groundwater surface as measurable free product.

Except for rare occasions caused by extreme hydrologic conditions, the extent of free product is primarily limited to the area immediately surrounding monitoring well SB-17. Free product has been observed at monitoring wells MW-5, MW-6, SB-7, SB-14, SB-23, and SB-26; however, the occurrence of product at these locations are extremely limited. The free product plume appears to be stable and is not migrating towards the river or the Ice Harbor.

Based on site observations, the observed free product can be considered residual as it is bound within the aquifer/alluvial soil matrix and is immobile under normal subsurface conditions. Nonresidual free product has been adequately abated. The presence of the residual free product does act as a continuing source of dissolved phase contamination which has inhibited remedial efforts to addressed groundwater impacts.

As discussed, an environmental protection easement prohibiting the installation of drinking water wells within the Port of Dubuque and prohibiting the installation of wells onsite will be implemented. Risks associated with the residual free product and resulting groundwater impact have been adequately characterized and addressed in accordance with the requirements of 567 IAC Chapter 137.

6.0 RECOMMENDATIONS

On behalf of the City of Dubuque, Terracon is requesting the IDNR consider closure for this site. This report demonstrates that the Dubuque Brownfields Redevelopment site's petroleum plume is in compliance with the requirements of 567 IAC Chapter 137.10. Based on historical groundwater monitoring, downgradient concentrations do support that the plume is stable and is not migrating. Steady and declining concentrations in monitoring wells demonstrate the plume appears to be naturally attenuating at this time. Free product observed at the site appears to be bound within the soil/water matrix and is immobile under normal subsurface conditions.

Terracon recommends that the City of Dubuque implement a City Ordinance prohibiting the installation of drinking water wells within the Port of Dubuque area and enact an environmental easement on the site that prohibits the installation of water wells and below-grade structures and limits site use to non-residential activities.

7.0 GENERAL COMMENTS

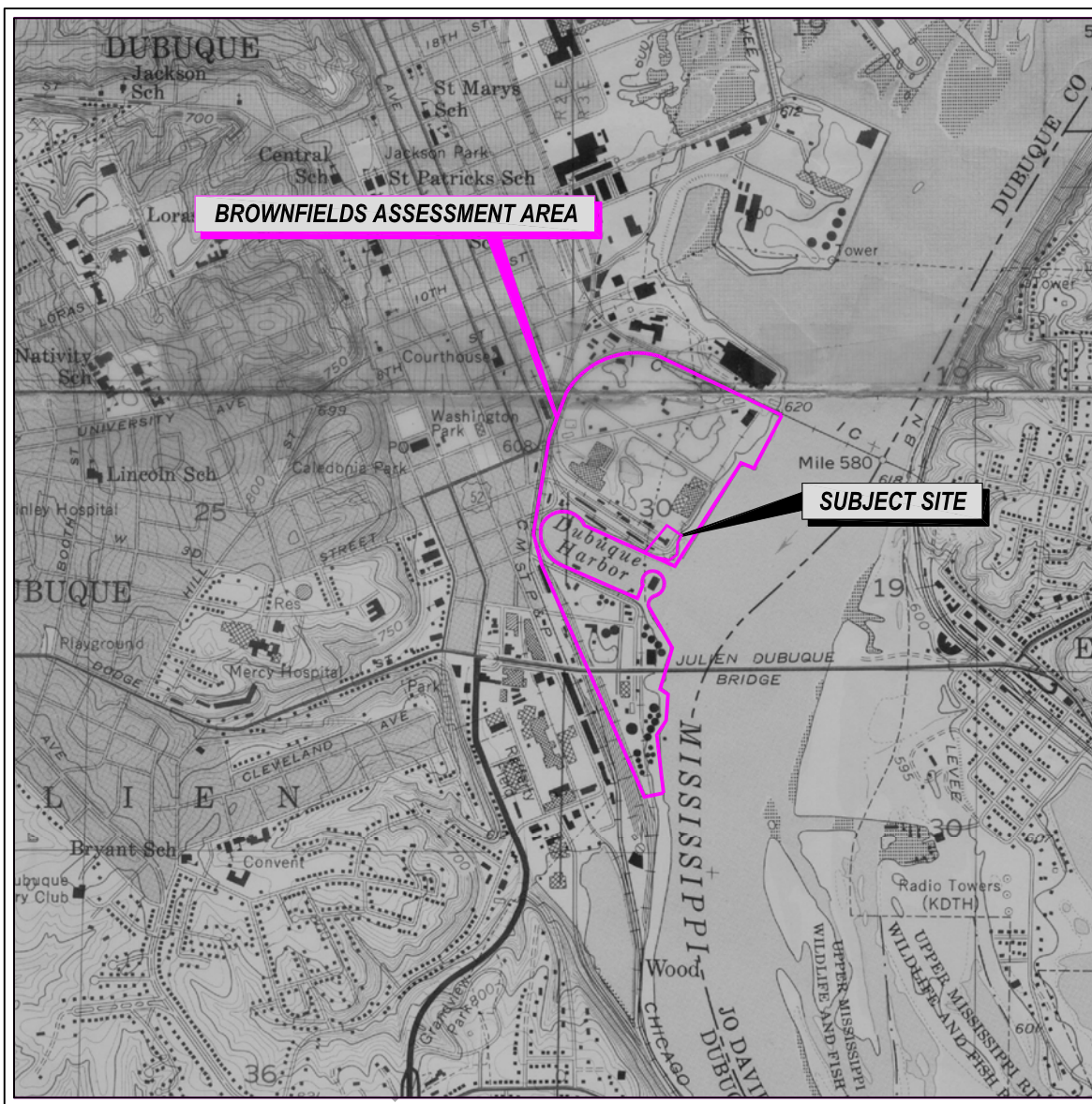
The analysis presented in this report is based upon data obtained from field activities completed at the indicated locations and from other information discussed in this report. This report does not reflect any variations between monitoring points or across the site. Actual subsurface conditions may vary. The extent of such variations may not become evident without additional exploration and/or monitoring.

This report is prepared for the exclusive use of our client for the specific application to the project discussed and has been prepared in accordance with generally accepted environmental engineering practices. No warranties, either express or implied, are intended or made. In the event any changes in the 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 the environmental engineer.

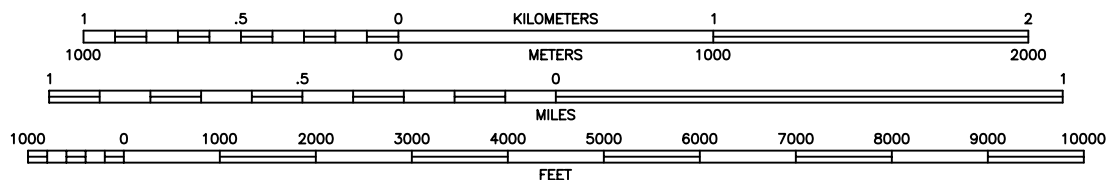
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Appendix A – Figures

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SCALE 1:24 000



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DOTTED LINES REPRESENT 5-FOOT CONTOURS



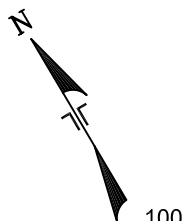
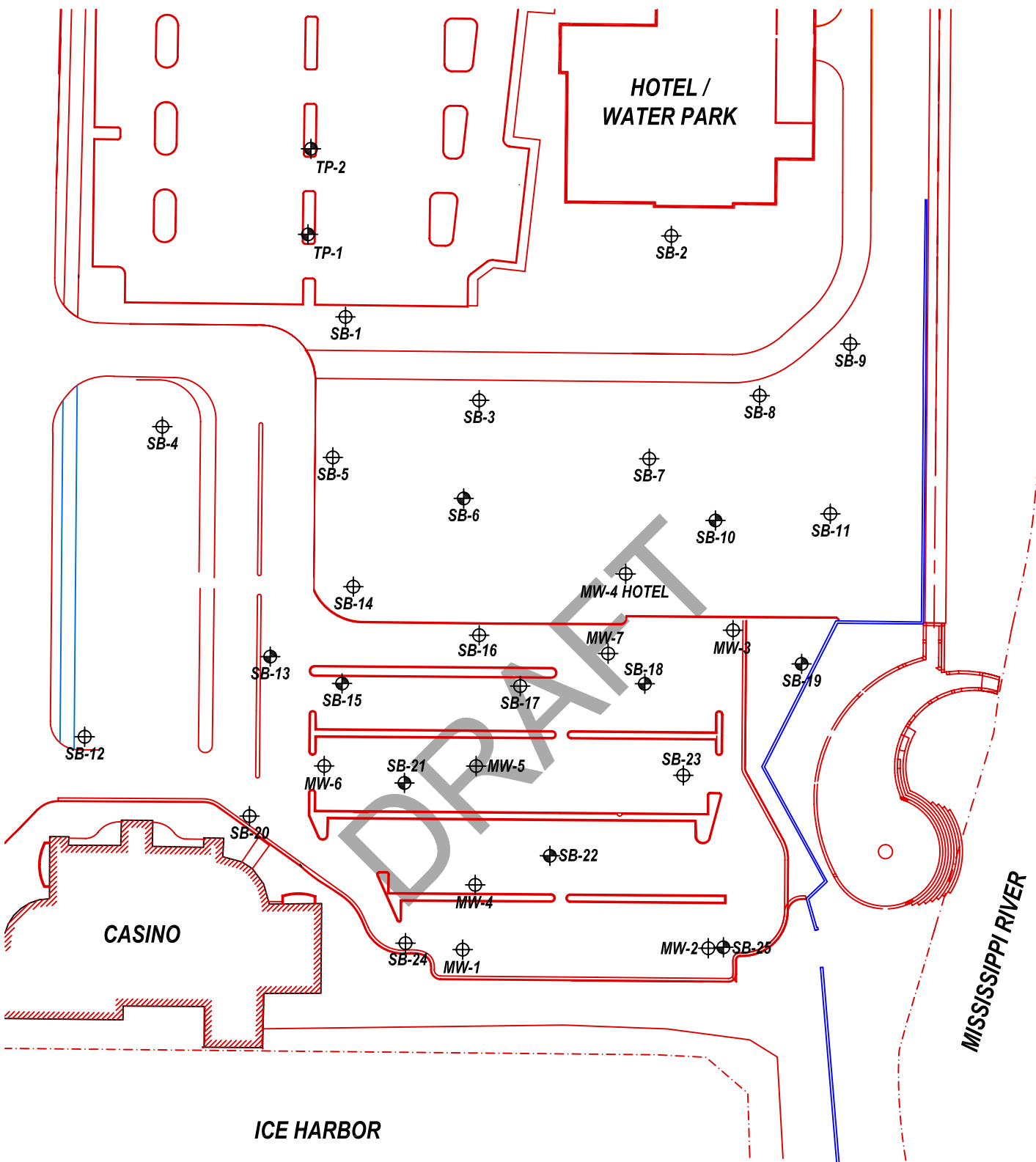
DUBUQUE NORTH, IA.—WI.—IL.
DUBUQUE SOUTH, IA.—IL.
QUADRANGLES
7.5 MINUTE SERIES (TOPOGRAPHIC)

TOPOGRAPHIC VICINITY MAP
SITE CLOSURE REPORT
CITY OF DUBUQUE
PETROLEUM PLUME REMEDIATION SITE
DUBUQUE, IOWA

Project Mngr: JFB
Designed By: JFB
Drawn By: JFB
Checked By: JFB
Approved By: JFB

Terracon
870 40th Avenue
Bettendorf, Iowa 52722
Figure No.

Project No. 07047024
Scale: AS SHOWN
File No. 4B024D01-SCR
Date: DEC 2009



LEGEND



APPROXIMATE SOIL BORING LOCATION



APPROXIMATE MONITORING WELL LOCATION

MONITORING WELL LOCATIONS SITE CLOSURE REPORT CITY OF DUBUQUE PETROLEUM PLUME REMEDIATION SITE DUBUQUE, IOWA

Project Mngtr: JFB
Designed By: JFB
Drawn By: JFB
Checked By: JFB
Approved By: JFB

Terracon
870 40th Avenue
Bettendorf, Iowa 52722

Project No. 07047024
Scale: AS SHOWN
File No. 4B024D02-SCR
Date: DEC 2009

Figure No.

2

PERIMETER OF
PORT OF DUBUQUE

STAR BREWERY
WELL

GRC NORTH WELL
NO.1

GRC SOUTH WELL
NO.2

EAST 5TH STREET

PORT OF DUBUQUE
(DOT-HATCHED AREA)

BELL STREET

EAST 3RD STREET

MUSEUM NORTH WELL
NO.1

MUSEUM SOUTH WELL
NO.2

ICE HARBOR

MISSISSIPPI RIVER

SUBJECT SITE

HIGHWAY 151/161/152

LEGEND

- - - - - SUBJECT SITE
- + + + + + RAILROAD TRACKS
- ⊕ EXISTING NON-DRINKING WATER WELL



0 400
Approximate Scale
(Feet)

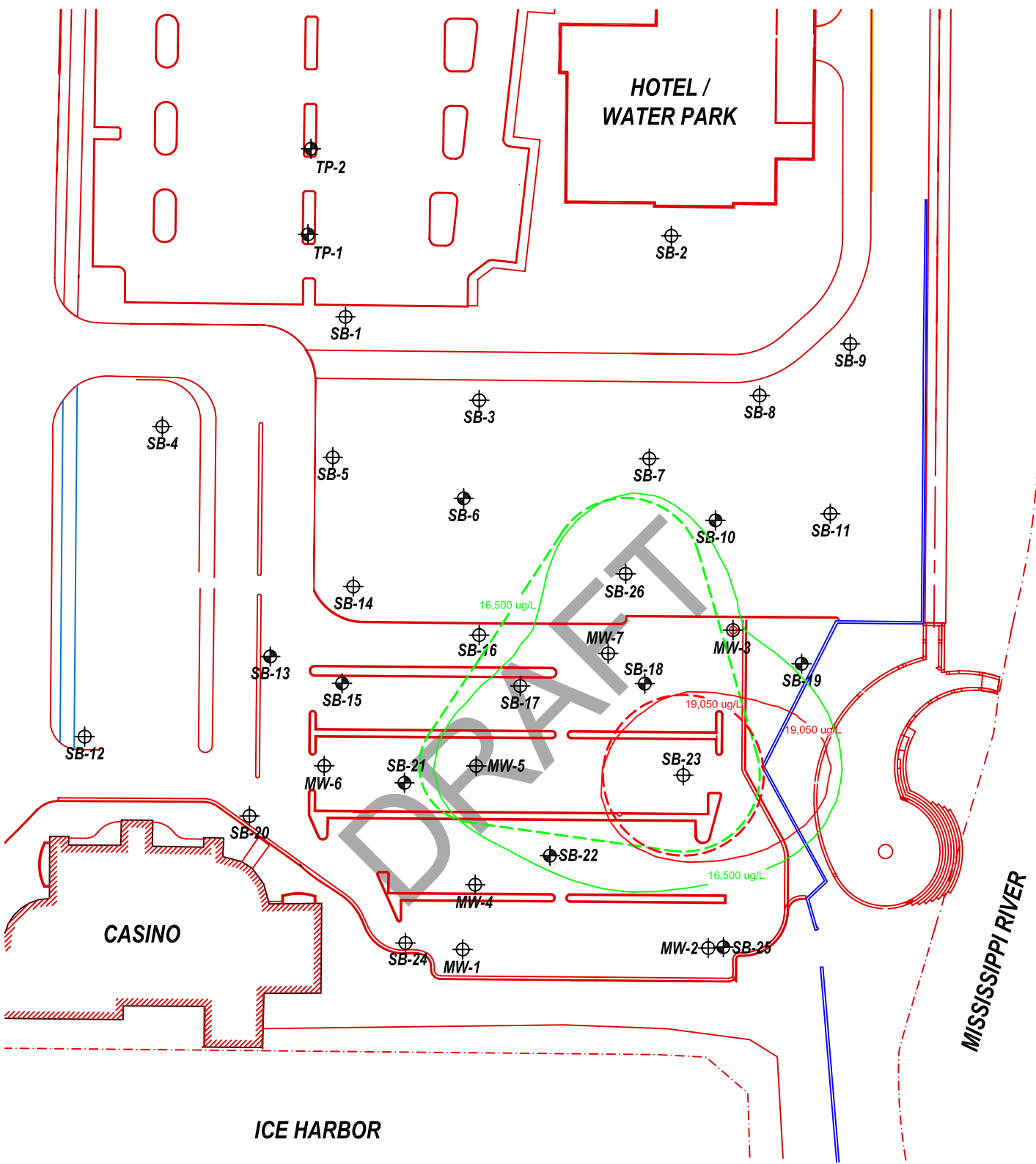
THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

RECEPTOR LOCATIONS SITE CLOSURE REPORT CITY OF DUBUQUE PETROLEUM PLUME REMEDIATION SITE DUBUQUE, IOWA

Project Mngr:	JFB	Project No.	07047024
Designed By:	JFB	Scale:	AS SHOWN
Drawn By:	JFB	File No.	4B024D03-SCR
Checked By:	JFB	Date:	DEC 2009
Approved By:	JFB	Figure No.	3

Terracon

870 40th Avenue
Bettendorf, Iowa 52722



LEGEND

-  APPROXIMATE SOIL BORING LOCATION
-  APPROXIMATE MONITORING WELL LOCATION
-  ACTUAL BENZENE PLUME
-  PREDICTED BENZENE PLUME
-  ACTUAL TOLUENE PLUME
-  PREDICTED TOLUENE PLUME



0 100
Approximate Scale
(Feet)

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MONITORING WELL LOCATIONS SITE CLOSURE REPORT CITY OF DUBUQUE PETROLEUM PLUME REMEDIATION SITE DUBUQUE, IOWA

Project Mngnr:	JFB	 870 40th Avenue Bettendorf, Iowa 52722	Project No.	07047024
Designed By:	JFB		Scale:	AS SHOWN
Drawn By:	JFB		File No.	4B024D02-SCR
Checked By:	JFB		Date:	DEC 2009
Approved By:	JFB		Figure No.	2

Appendix B - Tables

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TABLE 1
Groundwater Analytical Data
Site Closure Report
Petroleum Plume Remediation Site
Port of Dubuque Brownfields Cleanup Project
Terracon Project No. 07047024

Monitoring Well ID	Date Sampled	Reported Concentrations of Detected Compounds (µg/L)						Static Water Elevation
		Benzene	Toluene	Ethylbenzene	Xylene (total)	Naphthalene	Lead	
MW-2	03/23/99	10145	254	1113	2586	NA	NA	NM
MW-2	09/23/02	895	23.4	175	165	NA	NA	594.70
MW-2	05/05/03	5660	99.5	527	686	NA	NA	593.53
MW-2	09/23/04	12000	640	900	2000	180	35.3	593.89
MW-2	07/11/05	975	48.9	472	661	86	NA	595.02
MW-2	10/05/05	2080	46.6	350	440	90	NA	593.75
MW-2	01/11/06	2010	49.1	315	348	49.1	NA	593.87
MW-2	04/13/06	4870	155	728	1130	NA	NA	597.97
MW-2	07/31/06	1180	120	920	886	NA	NA	592.17
MW-2	01/18/07	2540	38.6	279	238	NA	NA	592.67
MW-2	09/05/07	485	16.4	173	168	NA	NA	593.60
MW-2	12/18/07	1400	51.1	703	936	NA	NA	593.45
MW-2	04/23/08	3620	99.3	490	636	NA	NA	597.89
MW-2	07/21/08	325	20.3	78.5	89.9	NA	NA	595.42
MW-2	11/19/08	4270	76.7	365	285	NA	NA	592.84
MW-2	02/16/09	7530	112	305	346	NA	NA	594.14
MW-2	05/04/09	1130	32.1	227	331	NA	NA	596.08
MW-2	07/22/09	1310	78.5	1150	1250	NA	NA	592.60
MW-3	03/23/99	14525	10382	1930	7400	NA	NA	NM
MW-3	09/23/02	23400	12300	3220	11500	NA	NA	594.56
MW-3	05/05/03	18350	7410	1800	5780	NA	NA	593.60
MW-3	09/22/04	15000	1800	2200	5300	290	106	593.78
MW-3	10/04/05	21100	250	2370	4410	206	NA	593.63
MW-3	01/11/06	22400	853	2730	5960	236	NA	593.97
MW-3	04/13/06	23300	10700	2310	8060	NA	NA	598.18
MW-3	07/31/06	22200	6210	3270	11300	NA	NA	591.77
MW-3	01/18/07	20800	1550	2880	6830	NA	NA	591.98
MW-3	04/23/08	18900	6720	2510	8910	NA	NA	598.53
MW-3	07/21/08	16900	598	3910	13700	NA	NA	594.28
MW-3	12/30/09	NA	NA	NA	NA	NA	19.4	594.28

TABLE 1
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Site Closure Report
Petroleum Plume Remediation Site
Port of Dubuque Brownfields Cleanup Project
Terracon Project No. 07047024

Monitoring Well ID	Date Sampled	Reported Concentrations of Detected Compounds (µg/L)						Static Water Elevation
		Benzene	Toluene	Ethylbenzene	Xylene (total)	Naphthalene	Lead	
MW-4	03/23/99	7056	10	13	135	NA	NA	NM
MW-4	09/23/02	2010	<40.0	<40.0	168	NA	NA	NM
MW-4	05/05/03	7000	106	25.7	456	NA	NA	NM
MW-4	09/23/04	14000	<64	<68	220	NA	<1.40	NM
MW-4	01/11/06	2160	10.4	14.9	38.1	<10.0	NA	594.29
MW-4	09/05/07	1700	7.44	10.4	17.3	NA	NA	NM
MW-4	12/18/07	5740	25.9	19.6	49.1	NA	NA	NM
MW-4	11/19/08	8580	60.6	34.0	82.6	NA	NA	593.29
MW-4	02/16/09	6760	52.9	29.1	141	NA	NA	594.71
MW-4	05/04/09	9810	95.2	104	718	NA	NA	596.57
MW-4	07/22/09	8780	80	203	518	NA	NA	592.92
MW-5	03/23/99	12047	80	453	1409	NA	NA	NM
MW-5	09/23/02	18600	411	1880	3880	NA	NA	594.48
MW-5	05/05/03	18900	251	1710	1110	NA	NA	593.59
MW-5	09/23/04	17000	<64.0	980	590	110	16.5	593.14
MW-5	07/11/05	12500	148	898	1130	165	NA	594.07
MW-5	10/05/05	20400	130	610	430	39	NA	593.78
MW-5	01/11/06	21700	156	302	370	13.4	NA	593.89
MW-5	04/13/06	19900	175	130	292	NA	NA	599.03
MW-5	07/31/06	13600	144	1030	84.8	NA	NA	591.72
MW-5	01/18/07	14900	209	1550	4250	NA	NA	591.94
MW-5	04/17/07	22000	193	179	424	NA	NA	597.35
MW-5	09/05/07	14700	170	427	1210	NA	NA	595.22
MW-5	12/18/07	18800	344	1390	3320	NA	NA	593.28
MW-5	04/23/08	22700	548	336	1050	NA	NA	597.49
MW-5	07/21/08	6440	219	1060	2220	NA	NA	594.34
MW-5	11/19/08	21600	5100	2110	6780	NA	NA	592.69
MW-5	02/16/09	23600	1270	2410	7500	NA	NA	594.16
MW-5	05/04/09	22300	365	2190	6560	NA	NA	596.03
MW-5	07/22/09	14200	285	1850	5110	NA	NA	592.38

TABLE 1
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Petroleum Plume Remediation Site
Port of Dubuque Brownfields Cleanup Project
Terracon Project No. 07047024

Monitoring Well ID	Date Sampled	Reported Concentrations of Detected Compounds (µg/L)						Static Water Elevation
		Benzene	Toluene	Ethylbenzene	Xylene (total)	Naphthalene	Lead	
MW-6	03/23/99	10397	341	465	1485	NA	NA	NM
MW-6	09/23/02	16400	107	3260	5400	NA	NA	594.58
MW-6	05/05/03	11700	3.4	1470	630	NA	NA	593.61
MW-6	09/23/04	11000	<32.0	920	1100	74	14.6	593.18
MW-6	07/11/05	8590	48.1	1370	1120	123	NA	594.11
MW-6	10/05/05	6500	13.7	490	360	50	NA	593.74
MW-6	01/11/06	9460	279	2090	3600	98.8	NA	594.16
MW-6	04/13/06	3790	8.62	49.6	76.1	NA	NA	598.78
MW-6	07/31/06	10300	107	2590	4500	NA	NA	590.4
MW-6	01/18/07	8920	77.7	2180	3000	NA	NA	590.94
MW-6	04/23/08	3370	42.8	1620	3570	NA	NA	595.97
MW-6	07/21/08	3780	76.4	1370	3840	NA	NA	593.52
MW-7	03/23/99	15940	13688	1964	7939	NA	NA	NM
MW-7	09/23/02	25300	2450	2050	3740	NA	NA	594.75
MW-7	05/05/03	18100	1190	1220	3050	NA	NA	593.78
MW-7	09/23/04	15000	<160	690	1600	99	16	593.94
MW-7	07/11/05	15400	1400	1140	2930	118	NA	594.46
MW-7	10/04/05	20600	1040	1150	2540	108	NA	593.93
MW-7	01/11/06	16700	647	1150	2570	103	NA	594.16
MW-7	04/13/06	8120	163	310	595	NA	NA	596.92
MW-7	07/31/06	24900	5450	2020	6190	NA	NA	592.19
MW-7	01/18/07	23700	635	1260	3370	NA	NA	592.39
MW-7	09/05/07	17100	4720	1920	7060	NA	NA	593.29
MW-7	12/18/07	22100	4110	2810	7940	NA	NA	593.52
MW-7	04/23/08	27200	385	1420	3160	NA	NA	598.62
MW-7	07/21/08	6530	975	547	1860	NA	NA	594.70
MW-7	11/19/08	14400	3300	2430	7260	NA	NA	592.85
MW-7	02/16/09	14200	700	1330	3550	NA	NA	594.28
MW-7	05/04/09	20200	1880	1350	3780	NA	NA	596.18
MW-7	07/22/09	18500	3910	1870	6170	NA	NA	592.61

TABLE 1
Groundwater Analytical Data
Site Closure Report
Petroleum Plume Remediation Site
Port of Dubuque Brownfields Cleanup Project
Terracon Project No. 07047024

Monitoring Well ID	Date Sampled	Reported Concentrations of Detected Compounds (µg/L)						Static Water Elevation
		Benzene	Toluene	Ethylbenzene	Xylene (total)	Naphthalene	Lead	
SB-01	09/23/04	0.5	10	7.7	34	<0.1	6.8	594.00
SB-01	07/08/05	<2.0	<2.0	<2.0	<3.0	<10	NA	594.80
SB-01	10/04/05	<2.0	<2.0	<2.0	<3.0	<10	NA	593.51
SB-02	09/22/04	<0.25	<0.16	<0.17	<0.25	<0.1	<8.4	593.52
SB-02	07/08/05	<2.0	<2.0	<2.0	<3.0	<10	NA	595.28
SB-02	10/04/05	<2.0	<2.0	<2.0	<3.0	<10	NA	593.24
SB-03	09/22/04	950	24	340	530	77	10.7	593.57
SB-03	07/08/05	49.2	<2.0	<2.0	<3.0	<10	NA	595.44
SB-03	10/04/05	710	5.9	9.4	3.5	<10	NA	593.30
SB-03	01/10/06	395	3.24	<2.00	4.74	<10.0	NA	594.06
SB-03	09/05/07	9.86	<2.0	<2.0	<3.0	NA	NA	595.28
SB-03	12/17/07	33.3	<2.0	5.18	7.31	NA	NA	593.99
SB-03	11/19/08	42.9	<2.0	12.8	30.9	NA	NA	593.19
SB-03	02/16/09	191	2.45	2.58	30.0	NA	NA	593.35
SB-03	05/04/09	33.0	<2.0	<2.0	<3.0	NA	NA	596.06
SB-03	07/22/09	36.2	<2.0	<2.0	<3.0	NA	NA	593.70
SB-04	09/22/04	<0.25	<0.16	<0.17	<0.25	<0.1	<10.9	593.68
SB-04	07/08/05	<2.0	<2.0	<2.0	<3.0	<10	NA	593.74
SB-04	10/04/05	<2.0	<2.0	<2.0	<3.0	<10	NA	593.74
SB-05	09/22/04	<0.25	<0.16	<0.17	<0.25	<0.1	<14.2	593.51
SB-05	07/08/05	<2.0	<2.0	<2.0	<3.0	<10	NA	594.14
SB-05	10/04/05	<2.0	<2.0	<2.0	<3.0	<10	NA	593.24

TABLE 1
Groundwater Analytical Data
Site Closure Report
Petroleum Plume Remediation Site
Port of Dubuque Brownfields Cleanup Project
Terracon Project No. 07047024

Monitoring Well ID	Date Sampled	Reported Concentrations of Detected Compounds (µg/L)						Static Water Elevation
		Benzene	Toluene	Ethylbenzene	Xylene (total)	Naphthalene	Lead	
SB-07	09/22/04	3400	13000	2300	9100	300	22.6	593.93
SB-07	07/08/05	11400	13100	3750	12700	169	NA	594.74
SB-07	10/04/05	8170	13900	3870	13900	216	NA	593.47
SB-07	01/10/06	9490	11900	4100	13800	419	NA	593.92
SB-07	04/13/06	2800	5740	2480	6570	NA	NA	597.57
SB-07	07/31/06	7670	14300	3980	15500	NA	NA	592.15
SB-07	01/18/07	11600	14700	3900	13600	NA	NA	592.46
SB-07	04/17/07	13300	8720	2590	9360	NA	NA	597.57
SB-07	04/23/08	9490	5470	3530	10400	NA	NA	597.85
SB-07	07/21/08	2710	8990	6560	28000	NA	NA	595.77
SB-08	09/22/04	92	9	20	77	0.1	4.5	593.75
SB-08	07/08/05	640	253	839	2550	203	NA	594.66
SB-08	10/04/05	1340	270	470	970	76	NA	593.32
SB-08	01/10/06	622	50.6	400	710	48.7	NA	593.83
SB-09	09/22/04	0.64	1.3	10	6	0.18	<1.40	593.71
SB-09	07/08/05	<2.0	<2.0	<2.0	<3.0	<10	NA	595.00
SB-09	10/04/05	<2.0	<2.0	<2.0	<3.0	<10	NA	596.37
SB-11	09/22/04	3000	13000	2400	9400	NA	23.9	593.25
SB-11	07/11/05	3690	6550	3310	12000	362	NA	594.97
SB-11	10/04/05	4480	15100	3680	14000	340	NA	593.17
SB-11	01/11/06	4500	14900	4860	18000	415	NA	594.06
SB-11	04/13/06	3400	6790	3210	10800	NA	NA	597.12
SB-11	07/31/06	4470	14200	3890	15000	NA	NA	592.92
SB-11	01/18/07	5270	14400	3730	13100	NA	NA	592.73
SB-11	04/23/08	4000	7450	4250	13900	NA	NA	599.37
SB-11	07/21/08	1890	1120	3210	8680	NA	NA	595.46

TABLE 1
Groundwater Analytical Data
Site Closure Report
Petroleum Plume Remediation Site
Port of Dubuque Brownfields Cleanup Project
Terracon Project No. 07047024

Monitoring Well ID	Date Sampled	Reported Concentrations of Detected Compounds (µg/L)						Static Water Elevation
		Benzene	Toluene	Ethylbenzene	Xylene (total)	Naphthalene	Lead	
SB-12	09/22/04	<0.25	<0.16	<0.17	<0.25	<0.1	<10.7	593.95
SB-12	07/08/05	<2.0	<2.0	<2.0	<3.0	<10	NA	594.88
SB-12	10/04/05	<2.0	<2.0	<2.0	<3.0	<10	NA	593.54
SB-12	10/04/05	<2.0	<2.0	<2.0	4.38	NA	NA	593.46
SB-12	09/05/07	<2.0	<2.0	<2.0	7.42	NA	NA	594.82
SB-12	09/05/07	<2.0	<2.0	<2.0	7.42	NA	NA	594.82
SB-12	12/18/07	<2.0	<2.0	<2.0	4.38	NA	NA	593.46
SB-12	11/19/08	<2.0	<2.0	<2.0	<3.0	NA	NA	592.91
SB-12	02/16/09	<2.0	<2.0	<2.0	<3.0	NA	NA	594.03
SB-12	05/04/09	<2.0	<2.0	<2.0	<3.0	NA	NA	596.02
SB-12	07/22/09	<2.0	<2.0	<2.0	<3.0	NA	NA	592.47
SB-14	09/22/04	3200	160	1600	3400	300	3.7	593.51
SB-14	01/27/05	0	NS	NS	NS	NS	NA	593.06
SB-14	07/08/05	3420	88	1080	931	193	NA	595.30
SB-14	10/04/05	2850	150	1730	1780	157	NA	593.19
SB-14	01/10/06	3400	258	2300	2030	276	NA	594.03
SB-14	04/13/06	1640	31.2	920	844	NA	NA	595.63
SB-14	07/31/06	3770	413	2100	4000	NA	NA	593.53
SB-14	01/18/07	2780	64.6	2010	1170	NA	NA	592.72
SB-14	04/17/07	591	<2.0	739	736	NA	NA	597.81
SB-14	04/23/08	804	89.4	1190	954	NA	NA	597.66
SB-14	07/21/08	1930	252	2160	1880	NA	NA	596.3
SB-16	09/23/04	11000	<130.0	1500	2700	420	18.8	594.28
SB-16	07/11/05	4370	45.9	632	550	320	NA	594.81
SB-16	10/04/05	4300	29.7	1060	1020	88	NA	593.78
SB-16	01/11/06	7190	<200.0	1510	744	194	NA	594.06
SB-16	04/13/06	15700	85.4	2630	3880	NA	NA	595.89
SB-16	07/31/06	2160	29	307	258	NA	NA	591.79
SB-16	01/18/07	9490	38.8	1890	1070	NA	NA	591.91
SB-16	04/23/08	6750	50.6	978	880	NA	NA	596.03
SB-16	07/21/08	1160	21.6	112	57.0	NA	NA	596.25

TABLE 1
Groundwater Analytical Data
Site Closure Report
Petroleum Plume Remediation Site
Port of Dubuque Brownfields Cleanup Project
Terracon Project No. 07047024

Monitoring Well ID	Date Sampled	Reported Concentrations of Detected Compounds (µg/L)						Static Water Elevation
		Benzene	Toluene	Ethylbenzene	Xylene (total)	Naphthalene	Lead	
SB-17	09/23/04	6400	5000	1200	4400	150	37.1	593.84
SB-17	10/04/05	9400	4450	3340	13700	790	NA	593.62
SB-17	01/17/06	11600	4880	3000	9730	583	NA	NM
SB-17	04/13/06	23000	6970	3700	12700	NA	NA	598.42
SB-17	07/31/06	11100	7010	2700	9030	NA	NA	591.33
SB-17	01/18/07	13100	5640	2940	8630	NA	NA	591.34
SB-17	04/23/08	22300	4140	2650	10200	NA	NA	596.68
SB-17	07/21/08	7430	1590	2310	10700	NA	NA	593.7
SB-20	09/22/04	<0.25	<0.16	<0.17	<0.25	0.5	<7.9	593.61
SB-20	07/11/05	20.9	<2.0	23.7	9.3	<10	NA	594.53
SB-23	09/23/04	61000	48000	6500	22000	480	39.2	593.53
SB-23	07/11/05	22200	16300	4320	15700	484	NA	594.32
SB-23	10/05/05	20400	13300	3430	14400	397	NA	593.80
SB-23	01/11/06	29300	24200	4440	18600	401	NA	593.97
SB-23	04/13/06	34600	30700	3310	10500	NA	NA	598.08
SB-23	07/31/06	17800	14100	2710	17200	NA	NA	590.6
SB-23	01/18/07	26100	17800	2970	12300	NA	NA	590.77
SB-23	04/17/07	31100	26000	2950	10100	NA	NA	596.32
SB-23	09/05/07	22800	19100	3240	13200	NA	NA	591.81
SB-23	12/17/07	23000	19500	3130	12900	NA	NA	591.97
SB-23	04/23/08	25700	22300	3610	13400	NA	NA	596.68
SB-23	07/21/08	23600	22400	4200	18000	NA	NA	593.30
SB-23	11/19/08	19000	16500	3160	13900	NA	NA	591.88
SB-23	02/16/09	32300	40200	8400	28400	NA	NA	593.24
SB-23	05/04/09	27300	30500	3570	26600	NA	NA	595.18
SB-23	07/22/09	18700	18000	5650	20800	NA	NA	591.61
SB-23	12/30/09	NA	NA	NA	NA	NA	6.43	591.61

TABLE 1
Groundwater Analytical Data
Site Closure Report
Petroleum Plume Remediation Site
Port of Dubuque Brownfields Cleanup Project
Terracon Project No. 07047024

Monitoring Well ID	Date Sampled	Reported Concentrations of Detected Compounds (µg/L)						Static Water Elevation
		Benzene	Toluene	Ethylbenzene	Xylene (total)	Naphthalene	Lead	
SB23 28-32'	08/30/07	226	537	280	835	NA	NA	NM
SB-23 46-50'	08/30/07	3490	2080	772	2590	NA	NA	NM
SB-23 30'	12/17/07	375	550	233	728	NA	NA	NM
SB-23 50'	12/17/07	1370	126	77.5	284	NA	NA	NM
SB-23 75'	01/07/08	20.0	33.2	11.7	38.8	NA	NA	NM
SB-23 100'	01/07/08	5.79	11.5	4.88	13.6	NA	NA	NM
SB-24	09/22/04	<0.25	<0.16	<0.17	<0.25	350	<12.2	594.13
SB-24	07/11/05	<2.0	<2.0	<2.0	<3.0	<10	NA	594.87
SB-24	10/05/05	<2.0	<2.0	<2.0	<3.0	<10	NA	594.03
SB-24	01/11/06	<2.0	<2.0	<2.0	<3.0	<10.0	NA	594.02
SB-24	09/05/07	<2.0	2.29	9.64	52.4	NA	NA	593.75
SB-24	12/18/07	<2.0	<2.0	<2.0	<3.0	NA	NA	593.44
SB-24	12/18/07	<2.0	<2.0	<2.0	<3.0	NA	NA	593.44
SB-24	11/19/08	<2.0	<2.0	<2.0	<3.0	NA	NA	592.86
SB-24	02/16/09	<2.0	<2.0	<2.0	<3.0	NA	NA	594.07
SB-24	05/04/09	<2.0	<2.0	<2.0	<3.0	NA	NA	596.48
SB-24	07/22/09	<2.0	<2.0	<2.0	<3.0	NA	NA	593.19
SB-26 (MW-4H)	10/25/00	29800	19300	3220	13300	NA	NA	NM
SB-26 (MW-4H)	09/23/02	13600	15400	4080	15400	NA	NA	NM
SB-26 (MW-4H)	05/05/03	15600	11300	3720	13900	NA	NA	NM
SB-26	07/11/05	25100	20300	3610	13800	401	NA	594.20
SB-26	10/04/05	18300	11700	2400	11000	386	NA	593.61
SB-26	01/11/06	22200	14200	3420	15000	377	NA	593.91
SB-26	04/13/06	29000	21600	2760	10500	NA	NA	598.17
SB-26	07/31/06	21200	16200	3080	13200	NA	NA	591.61
SB-26	01/18/07	20800	5960	2970	11100	NA	NA	592.37
SB-26	04/17/07	27800	19100	2600	10700	NA	NA	597.66
SB-26	04/23/08	25400	18200	2880	11900	NA	NA	598.3
SB-26	07/21/08	7880	5900	4000	20300	NA	NA	594.93

TABLE 2
ASTM Model Calculations
Site Closure Report
Petroleum Plume Remediation Site
Port of Dubuque Brownfields Cleanup Project
Terracon Project No. 07047024

Parameter	Benzene						Toluene
	SB-23	SB-26	MW-5	SB-17	MW-7	MW-3	SB-23
Discharge Concentration, C(x) (µg/L)	16500	16500	16500	16500	16500	16500	19050
Groundwater Concentration, C _s (µg/L)	32300	27800	23600	22300	20200	16900	40200
Source Width, Sw (cm)	4000	4000	4000	4000	4000	4000	4000
Source Depth, Sd (cm)	300	300	300	300	300	300	300
Hydraulic Conductivity, K (cm/day)	86	86	86	86	86	86	86
Groundwater Gradient, i (cm/cm)	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Effective Porosity, θ _e (cm ³ voids/cm ³ soil)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Groundwater Velocity, u (cm/day)	1.72	1.72	1.72	1.72	1.72	1.72	1.72
1st Order Decay Coefficient, λ (unitless)	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0007
Dispersivity in x Direction, α _x (cm)	195	163	122	105	71.0	8.26	173
Dispersivity in y Direction, α _y (cm)	65.1	54.4	40.8	35.1	23.7	2.75	57.7
Dispersivity in z Direction, α _z (cm)	9.76	8.15	6.11	5.26	3.55	0.41	8.65
Radial Distance, x (cm)	1953	1631	1223	1052	710	83	1730
Radial Distance, x (ft)	64.5	53.9	40.4	34.7	23.4	2.73	57.1

Appendix C - Laboratory Analytical Reports

DRAFT

September 07, 2007

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CQI0010
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 08/31/07

An executed copy of the chain of custody is also included as an addendum to this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
P-SB23 28-32'	CQI0010-01	08/30/07 10:15
P-SB23 46-50'	CQI0010-02	08/30/07 11:10
TP-1 4-6'	CQI0010-03	08/30/07 12:30
TP-2 2-4'	CQI0010-04	08/30/07 13:15

Samples were received into laboratory at a temperature of 3 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

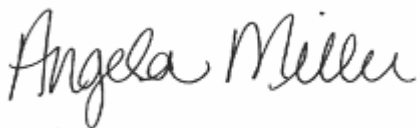
The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica - Cedar Falls, IA
Angie Miller
Project Coordinator

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0010
Project: Dubuque Brownfields
Project Number: 07047024

Received: 08/31/07
Reported: 09/07/07 08:17

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQI0010-01 (P-SB23 28-32' - Ground Water)				Sampled: 08/30/07 10:15			Recvd: 08/31/07 18:30		
UST Volatile Compounds by GC									
Benzene	226		ug/L	2.00	1	09/04/07 22:55	mmk	7090091	OA-1 - 8021B
Toluene	537		ug/L	2.00	1	09/04/07 22:55	mmk	7090091	OA-1 - 8021B
Ethylbenzene	280		ug/L	2.00	1	09/04/07 22:55	mmk	7090091	OA-1 - 8021B
Xylenes, total	835		ug/L	3.00	1	09/04/07 22:55	mmk	7090091	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	91 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	09/05/07 12:41	sjn	7090102	SW
Sample ID: CQI0010-02 (P-SB23 46-50' - Ground Water)				Sampled: 08/30/07 11:10			Recvd: 08/31/07 18:30		
UST Volatile Compounds by GC									
Benzene	3490		ug/L	20.0	10	09/06/07 16:58	mmk	7090191	OA-1 - 8021B
Toluene	2080		ug/L	20.0	10	09/06/07 16:58	mmk	7090191	OA-1 - 8021B
Ethylbenzene	772		ug/L	20.0	10	09/06/07 16:58	mmk	7090191	OA-1 - 8021B
Xylenes, total	2590		ug/L	30.0	10	09/06/07 16:58	mmk	7090191	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	88 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	09/05/07 12:41	sjn	7090102	SW
Sample ID: CQI0010-03 (TP-1 4-6' - Soil)				Sampled: 08/30/07 12:30			Recvd: 08/31/07 18:30		
General Chemistry Parameters									
% Solids	81.6		%	0.100	1	09/04/07 16:18	sas	7090065	SM 2540 G
Semivolatile Organics by GC/MS									
Acenaphthene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Acenaphthylene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Anthracene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Benzo (a) anthracene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Benzo (b) fluoranthene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Benzo (k) fluoranthene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Benzo (a) pyrene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Benzo (g,h,i) perylene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Chrysene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Dibenzo (a,h) anthracene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Fluoranthene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Fluorene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Indeno (1,2,3-cd) pyrene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Naphthalene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Phenanthrene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Pyrene	<0.404		mg/kg dry	0.404	0.979	09/05/07 11:54	AKE	7090027	SW 8270C
Surr: Nitrobenzene-d5 (45-100%)	55 %								
Surr: 2-Fluorobiphenyl (55-105%)	59 %								
Surr: Terphenyl-d14 (55-125%)	73 %								

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0010
Project: Dubuque Brownfields
Project Number: 07047024

Received: 08/31/07
Reported: 09/07/07 08:17

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQI0010-04 (TP-2 2-4' - Soil)				Sampled: 08/30/07 13:15			Recvd: 08/31/07 18:30		
General Chemistry Parameters									
% Solids	88.7		%	0.100	1	09/04/07 16:18	sas	7090065	SM 2540 G
Semivolatile Organics by GC/MS									
Acenaphthene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Acenaphthylene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Anthracene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Benzo (a) anthracene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Benzo (b) fluoranthene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Benzo (k) fluoranthene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Benzo (a) pyrene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Benzo (g,h,i) perylene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Chrysene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Dibenzo (a,h) anthracene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Fluoranthene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Fluorene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Indeno (1,2,3-cd) pyrene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Naphthalene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Phenanthrene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Pyrene	<0.372		mg/kg dry	0.372	0.976	09/05/07 17:05	AKE	7090027	SW 8270C
Surr: Nitrobenzene-d5 (45-100%)	57 %								
Surr: 2-Fluorobiphenyl (55-105%)	57 %								
Surr: Terphenyl-d14 (55-125%)	75 %								

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0010
Project: Dubuque Brownfields
Project Number: 07047024

Received: 08/31/07
Reported: 09/07/07 08:17

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Extraction Method
Semivolatile Organics by GC/MS							
SW 8270C	7090027	CQI0010-03	31	1	09/04/07 11:29	MDM	SW 3550B GCMS
SW 8270C	7090027	CQI0010-04	31	1	09/04/07 11:29	MDM	SW 3550B GCMS

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0010
Project: Dubuque Brownfields
Project Number: 07047024

Received: 08/31/07
Reported: 09/07/07 08:17

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
Semivolatile Organics by GC/MS														
Acenaphthene	7090027			mg/kg wet	N/A	0.330	<0.330							
Acenaphthylene	7090027			mg/kg wet	N/A	0.330	<0.330							
Anthracene	7090027			mg/kg wet	N/A	0.330	<0.330							
Benzo (a) anthracene	7090027			mg/kg wet	N/A	0.330	<0.330							
Benzo (b) fluoranthene	7090027			mg/kg wet	N/A	0.330	<0.330							
Benzo (k) fluoranthene	7090027			mg/kg wet	N/A	0.330	<0.330							
Benzo (a) pyrene	7090027			mg/kg wet	N/A	0.330	<0.330							
Benzo (g,h,i) perylene	7090027			mg/kg wet	N/A	0.330	<0.330							
Chrysene	7090027			mg/kg wet	N/A	0.330	<0.330							
Dibenzo (a,h) anthracene	7090027			mg/kg wet	N/A	0.330	<0.330							
Fluoranthene	7090027			mg/kg wet	N/A	0.330	<0.330							
Fluorene	7090027			mg/kg wet	N/A	0.330	<0.330							
Indeno (1,2,3-cd) pyrene	7090027			mg/kg wet	N/A	0.330	<0.330							
Naphthalene	7090027			mg/kg wet	N/A	0.330	<0.330							
Phenanthrene	7090027			mg/kg wet	N/A	0.330	<0.330							
Pyrene	7090027			mg/kg wet	N/A	0.330	<0.330							
Surrogate: Nitrobenzene-d5	7090027			mg/kg wet					60		45-100			
Surrogate: 2-Fluorobiphenyl	7090027			mg/kg wet					58		55-105			
Surrogate: Terphenyl-d14	7090027			mg/kg wet					69		55-125			
UST Volatile Compounds by GC														
Benzene	7090091			ug/L	N/A	2.00	<2.00							
Toluene	7090091			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7090091			ug/L	N/A	2.00	<2.00							
Xylenes, total	7090091			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7090091			ug/L					87		75-135			
Benzene	7090191			ug/L	N/A	2.00	<2.00							
Toluene	7090191			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7090191			ug/L	N/A	2.00	<2.00							
Xylenes, total	7090191			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7090191			ug/L					93		75-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0010
Project: Dubuque Brownfields
Project Number: 07047024

Received: 08/31/07
Reported: 09/07/07 08:17

LABORATORY DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
General Chemistry Parameters													
QC Source Sample: CQI0009-01													
% Solids	7090065	70.8		%	N/A	0.100	70.8				0	10	
QC Source Sample: CQI0041-05													
% Solids	7090065	85.5		%	N/A	0.100	85.5				0	10	

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0010
Project: Dubuque Brownfields
Project Number: 07047024

Received: 08/31/07
Reported: 09/07/07 08:17

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
Semivolatile Organics by GC/MS														
Acenaphthene	7090027		3.33	mg/kg wet	N/A	0.330	2.64		79		55-110			
Acenaphthylene	7090027		3.33	mg/kg wet	N/A	0.330	2.66		80		55-110			
Anthracene	7090027		3.33	mg/kg wet	N/A	0.330	2.85		86		60-120			
Benzo (a) anthracene	7090027		3.33	mg/kg wet	N/A	0.330	3.06		92		60-125			
Benzo (b) fluoranthene	7090027		3.33	mg/kg wet	N/A	0.330	3.03		91		60-135			
Benzo (k) fluoranthene	7090027		3.33	mg/kg wet	N/A	0.330	2.99		90		55-135			
Benzo (a) pyrene	7090027		3.33	mg/kg wet	N/A	0.330	3.02		91		60-130			
Benzo (g,h,i) perylene	7090027		3.33	mg/kg wet	N/A	0.330	2.91		87		60-130			
Chrysene	7090027		3.33	mg/kg wet	N/A	0.330	3.00		90		60-125			
Dibenzo (a,h) anthracene	7090027		3.33	mg/kg wet	N/A	0.330	3.00		90		60-135			
Fluoranthene	7090027		3.33	mg/kg wet	N/A	0.330	2.72		81		60-130			
Fluorene	7090027		3.33	mg/kg wet	N/A	0.330	2.68		80		60-115			
Indeno (1,2,3-cd) pyrene	7090027		3.33	mg/kg wet	N/A	0.330	3.03		91		60-135			
Naphthalene	7090027		3.33	mg/kg wet	N/A	0.330	2.41		72		40-100			
Phenanthrene	7090027		3.33	mg/kg wet	N/A	0.330	2.83		85		60-125			
Pyrene	7090027		3.33	mg/kg wet	N/A	0.330	3.16		95		55-130			
Surrogate: Nitrobenzene-d5	7090027			mg/kg wet					71		45-100			
Surrogate: 2-Fluorobiphenyl	7090027			mg/kg wet					71		55-105			
Surrogate: Terphenyl-d14	7090027			mg/kg wet					85		65-125			
UST Volatile Compounds by GC														
Benzene	7090091		48.0	ug/L	N/A	N/A	31.7		66		50-115			
Toluene	7090091		48.0	ug/L	N/A	N/A	38.0		79		65-110			
Ethylbenzene	7090091		48.0	ug/L	N/A	N/A	42.7		89		70-110			
Xylenes, total	7090091		144	ug/L	N/A	N/A	123		85		70-110			
Surrogate: 4-Bromofluorobenzene	7090091			ug/L					90		80-130			
Benzene	7090191		48.0	ug/L	N/A	N/A	30.1		63		50-115			
Toluene	7090191		48.0	ug/L	N/A	N/A	37.8		79		65-110			
Ethylbenzene	7090191		48.0	ug/L	N/A	N/A	42.9		89		70-110			
Xylenes, total	7090191		144	ug/L	N/A	N/A	124		86		70-110			
Surrogate: 4-Bromofluorobenzene	7090191			ug/L					90		80-130			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0010
Project: Dubuque Brownfields
Project Number: 07047024

Received: 08/31/07
Reported: 09/07/07 08:17

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
Semivolatile Organics by GC/MS														
QC Source Sample: CQI0010-03														
Acenaphthene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.09	2.79	77	69	35-125	10	20	
Acenaphthylene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.10	2.80	77	69	40-125	10	20	
Anthracene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.37	3.17	84	78	35-130	6	25	
Benzo (a) anthracene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.72	3.32	93	82	40-135	11	35	
Benzo (b) fluoranthene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.62	3.09	90	76	40-130	16	30	
Benzo (k) fluoranthene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.46	3.02	86	74	40-120	14	30	
Benzo (a) pyrene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.54	3.18	88	78	40-125	11	35	
Benzo (g,h,i) perylene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.20	3.04	80	75	35-125	5	30	
Chrysene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.73	3.31	93	82	40-135	12	35	
Dibenzo (a,h) anthracene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.27	3.18	82	79	40-125	3	30	
Fluoranthene	7090027	0.153	4.01	mg/kg dry	N/A	0.404	3.50	3.07	83	72	40-135	13	40	
Fluorene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.24	2.88	81	71	40-130	12	20	
Indeno (1,2,3-cd) pyrene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	3.50	3.16	87	78	40-125	10	40	
Naphthalene	7090027	<0.33	4.01	mg/kg dry	N/A	0.404	2.40	2.39	60	59	35-115	0	30	
Phenanthrene	7090027	0.124	4.01	mg/kg dry	N/A	0.404	3.44	3.15	83	75	40-130	9	35	
Pyrene	7090027	0.141	4.01	mg/kg dry	N/A	0.404	4.01	3.36	97	79	40-130	18	40	
Surrogate: Nitrobenzene-d5	7090027			mg/kg dry					60	59	56-100			
Surrogate: 2-Fluorobiphenyl	7090027			mg/kg dry					66	60	64-105			ZX
Surrogate: Terphenyl-d14	7090027			mg/kg dry					85	74	66-115			
UST Volatile Compounds by GC														
QC Source Sample: CQI0013-01														
Benzene	7090091	0.101	48.0	ug/L	N/A	N/A	32.5	32.9	67	68	50-115	1	10	
Toluene	7090091	<2.00	48.0	ug/L	N/A	N/A	37.5	37.8	78	79	65-110	1	10	
Ethylbenzene	7090091	<2.00	48.0	ug/L	N/A	N/A	44.1	44.8	92	93	65-115	2	10	
Xylenes, total	7090091	5.19	144	ug/L	N/A	N/A	126	128	84	85	65-115	2	10	
Surrogate: 4-Bromofluorobenzene	7090091			ug/L					89	91	80-135			
QC Source Sample: CQI0181-01														
Benzene	7090191	<2.00	48.0	ug/L	N/A	N/A	31.8	30.9	66	64	50-115	3	10	
Toluene	7090191	<2.00	48.0	ug/L	N/A	N/A	37.7	36.7	79	76	65-110	3	10	
Ethylbenzene	7090191	0.633	48.0	ug/L	N/A	N/A	44.0	44.2	90	91	65-115	1	10	
Xylenes, total	7090191	3.57	144	ug/L	N/A	N/A	126	127	85	86	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	7090191			ug/L					94	89	80-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0010
Project: Dubuque Brownfields
Project Number: 07047024

Received: 08/31/07
Reported: 09/07/07 08:17

CERTIFICATION SUMMARY

TestAmerica - Cedar Falls, IA

Method	Matrix	Nelac	Iowa
OA-1 - 8021B	Water - NonPotable	X	X
SM 2540 G	Solid/Soil		
SW 8270C	Solid/Soil	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF09-01.

DATA QUALIFIERS AND DEFINITIONS

ZX Due to sample matrix effects, the surrogate recovery was outside the control limits.

ADDITIONAL COMMENTS

Results are reported on a wet weight basis unless otherwise noted.

TestAmerica

ANALYTICAL TESTING CORPORATION

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone 319-277-2401 or 800-750-2401
Fax 319-277-2425

To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?
Compliance Monitoring

Client Name

Terracon

Client #:

Address:

870 40th Avenue

City/State/Zip Code:

Bettendorf, Iowa 52722

Project Manager:

John Brimmer

Telephone Number:

563-355-0702

Fax:

563-355-4789

Sampler Name: (Print Name)

John W. Cameron

Sampler Signature:

John W. Cameron

Email Address:

jbrimmer@terracon.com

Project Name:

Dubuque Brownfield

Project #:

07047024

Site/Location ID:

Dubuque

State:

Iowa

Report To:

JFB

Invoice To:

JFB

Quote #:

PO#:

TAT

Standard

☒ Rush (surcharges may apply)

Date Needed:

Fax Results: Y N

Email Results: Y N

SAMPLE ID

P-SB23 28'-32'

P-SB23 46'-50'

TP-1 4'-6'

TP-2 2'-4'

10/15/07

11/20/06

12/30/06

13/15/06

Field Filtered

G = Grab, C = Composite

Time Sampled

Date Sampled

Matrix

SL - Sludge DW - Drinking Water

GW - Groundwater S - Soil/Solid

WW - Wastewater Specify Other

Preservation & # of Containers

HNO₃

HCl

NaOH

H₂SO₄

Methanol

Other (Specify)

QA-I

Benzo(a)pyrene

Analyze For:

QC Deliverables

None

Level 2

(Batch QC)

Level 3

Level 4

Other:

REMARKS

Special Instructions: NO MTR

LABORATORY COMMENTS:

Relinquished By: John W. Cameron

Date: 8/31/07

Time: 13:00

Received By: Dan Fawcett

Date: 8/31/07

Time: 13:35

Relinquished By: Dan Fawcett

Date: 8/31/07

Time: 18:30

Received By: John W. Cameron

Date: 8/31/07

Time: 18:30

Relinquished By: John W. Cameron

Date: 8/31/07

Time: 18:30

Received By: John W. Cameron

Date: 8/31/07

Time: 18:30

Sample Receipt and Temperature Log Form

Client: Terracon Project: _____City: Betterland, IaDate: 8/31/07 Receiver's Initials: Jmt Time (Delivered): 1830**Temperature Record:**

Cooler ID# (If Applicable)

LW12-013.3 °C / On Ice☒ Temp Blank☐ Temperature out of compliance**Thermometer:**

- ☒ IR - 61997670 'A'
☐ IR - 61997671 'B'
☐ IR - 61854108
☐ 22126775

Courier:

- | | |
|--|--|
| ☐ UPS | ☒ TA Courier |
| ☐ FedEx | ☐ TA Field Services |
| ☐ DHL | ☐ Client |
| ☐ US Postal Service | ☐ Other |
| ☐ Spee-Dee | |

Custody seals present?

☐ Yes

Custody seals intact?

☐ Yes ☐ No☐ Non-Conformance report started**Exceptions Noted**

- ☐ Sample(s) not received in a cooler.
☐ Samples(s) received same day of sampling.
☐ Evidence of a chilling process
☐ Temperature not taken:

*Refer to SOP CF01-01 for Temperature Criteria

H:\QA Folder\QA Forms & Log Book pgs\Cooler Receipt rev11.doc

September 17, 2007

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CQI0313
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 09/06/07

An executed copy of the chain of custody is also included as an addendum to this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
MW-3	CQI0313-01	09/05/07 12:30
SB-12	CQI0313-02	09/05/07 13:00
SB-3	CQI0313-03	09/05/07 13:15
MW-7	CQI0313-04	09/05/07 13:30
MW-2	CQI0313-05	09/05/07 13:50
SB-24	CQI0313-06	09/05/07 14:15
MW-5	CQI0313-07	09/05/07 14:40
MW-4	CQI0313-08	09/05/07 15:00
SB-23	CQI0313-09	09/05/07 15:45

Samples were received into laboratory at a temperature of 2 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

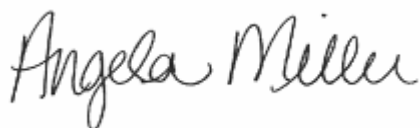
The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica - Cedar Falls, IA

Angie Miller

Project Coordinator

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0313
Project: Dubuque Brownfields
Project Number: 07047024

Received: 09/06/07
Reported: 09/17/07 11:19

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQI0313-01 (MW-3 - Ground Water)				Sampled: 09/05/07 12:30			Recvd: 09/06/07 17:30		
Dissolved Metals by SW 846 Series Methods									
Lead	0.102		mg/L	0.0400	10	09/13/07 14:47	llw	7090354	SW 7421
Sample ID: CQI0313-02 (SB-12 - Ground Water)				Sampled: 09/05/07 13:00			Recvd: 09/06/07 17:30		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	09/08/07 10:57	mmk	7090268	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	09/08/07 10:57	mmk	7090268	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	09/08/07 10:57	mmk	7090268	OA-1 - 8021B
Xylenes, total	7.42		ug/L	3.00	1	09/08/07 10:57	mmk	7090268	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	88 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	09/10/07 12:44	sjn	7090287	SW
Sample ID: CQI0313-03 (SB-3 - Ground Water)				Sampled: 09/05/07 13:15			Recvd: 09/06/07 17:30		
UST Volatile Compounds by GC									
Benzene	9.86		ug/L	2.00	1	09/08/07 11:32	mmk	7090268	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	09/08/07 11:32	mmk	7090268	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	09/08/07 11:32	mmk	7090268	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	09/08/07 11:32	mmk	7090268	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	88 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	09/10/07 12:44	sjn	7090287	SW
Sample ID: CQI0313-04 (MW-7 - Ground Water)				Sampled: 09/05/07 13:30			Recvd: 09/06/07 17:30		
UST Volatile Compounds by GC									
Benzene	17100		ug/L	100	50	09/12/07 22:48	mmk	7090462	OA-1 - 8021B
Toluene	4720		ug/L	100	50	09/12/07 22:48	mmk	7090462	OA-1 - 8021B
Ethylbenzene	1920		ug/L	100	50	09/12/07 22:48	mmk	7090462	OA-1 - 8021B
Xylenes, total	7060		ug/L	150	50	09/12/07 22:48	mmk	7090462	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	89 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	09/11/07 13:05	sjn	7090355	SW
Sample ID: CQI0313-05 (MW-2 - Ground Water)				Sampled: 09/05/07 13:50			Recvd: 09/06/07 17:30		
UST Volatile Compounds by GC									
Benzene	485		ug/L	2.00	1	09/08/07 12:08	mmk	7090268	OA-1 - 8021B
Toluene	16.4		ug/L	2.00	1	09/08/07 12:08	mmk	7090268	OA-1 - 8021B
Ethylbenzene	173		ug/L	2.00	1	09/08/07 12:08	mmk	7090268	OA-1 - 8021B
Xylenes, total	168		ug/L	3.00	1	09/08/07 12:08	mmk	7090268	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	93 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	09/10/07 12:44	sjn	7090287	SW
Sample ID: CQI0313-06 (SB-24 - Ground Water)				Sampled: 09/05/07 14:15			Recvd: 09/06/07 17:30		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	09/08/07 12:43	mmk	7090268	OA-1 - 8021B
Toluene	2.29		ug/L	2.00	1	09/08/07 12:43	mmk	7090268	OA-1 - 8021B
Ethylbenzene	9.64		ug/L	2.00	1	09/08/07 12:43	mmk	7090268	OA-1 - 8021B

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0313
Project: Dubuque Brownfields
Project Number: 07047024

Received: 09/06/07
Reported: 09/17/07 11:19

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQI0313-06 (SB-24 - Ground Water) - cont.				Sampled: 09/05/07 14:15			Recvd: 09/06/07 17:30		
UST Volatile Compounds by GC - cont.									
Xylenes, total	52.4		ug/L	3.00	1	09/08/07 12:43	mmk	7090268	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	89 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	09/10/07 12:44	sjn	7090287	SW
Sample ID: CQI0313-07 (MW-5 - Ground Water)				Sampled: 09/05/07 14:40			Recvd: 09/06/07 17:30		
UST Volatile Compounds by GC									
Benzene	14700		ug/L	50.0	25	09/14/07 11:01	mmk	7090633	OA-1 - 8021B
Toluene	170		ug/L	50.0	25	09/14/07 11:01	mmk	7090633	OA-1 - 8021B
Ethylbenzene	427		ug/L	50.0	25	09/14/07 11:01	mmk	7090633	OA-1 - 8021B
Xylenes, total	1210		ug/L	75.0	25	09/14/07 11:01	mmk	7090633	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	88 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	09/11/07 13:05	sjn	7090355	SW
Sample ID: CQI0313-08 (MW-4 - Ground Water)				Sampled: 09/05/07 15:00			Recvd: 09/06/07 17:30		
UST Volatile Compounds by GC									
Benzene	1700		ug/L	20.0	10	09/13/07 16:54	mmk	7090546	OA-1 - 8021B
Toluene	7.44		ug/L	2.00	1	09/10/07 11:31	mmk	7090348	OA-1 - 8021B
Ethylbenzene	10.4		ug/L	2.00	1	09/10/07 11:31	mmk	7090348	OA-1 - 8021B
Xylenes, total	17.3		ug/L	3.00	1	09/10/07 11:31	mmk	7090348	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	96 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	09/11/07 13:05	sjn	7090355	SW
Sample ID: CQI0313-09 (SB-23 - Ground Water)				Sampled: 09/05/07 15:45			Recvd: 09/06/07 17:30		
UST Volatile Compounds by GC									
Benzene	22800		ug/L	200	100	09/12/07 23:24	mmk	7090462	OA-1 - 8021B
Toluene	19100		ug/L	200	100	09/12/07 23:24	mmk	7090462	OA-1 - 8021B
Ethylbenzene	3240		ug/L	200	100	09/12/07 23:24	mmk	7090462	OA-1 - 8021B
Xylenes, total	13200		ug/L	300	100	09/12/07 23:24	mmk	7090462	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	90 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	09/11/07 13:05	sjn	7090355	SW

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0313
Project: Dubuque Brownfields
Project Number: 07047024

Received: 09/06/07
Reported: 09/17/07 11:19

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Extraction Method
Dissolved Metals by SW 846 Series Methods							
SW 7421	7090354	CQI0313-01	50	50	09/11/07 11:50	PTH	SW 3020A

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0313
Project: Dubuque Brownfields
Project Number: 07047024

Received: 09/06/07
Reported: 09/17/07 11:19

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
Dissolved Metals by SW 846 Series Methods														
Lead	7090354			mg/L	N/A	0.00400	<0.00400							
UST Volatile Compounds by GC														
Benzene	7090268			ug/L	N/A	2.00	<2.00							
Toluene	7090268			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7090268			ug/L	N/A	2.00	<2.00							
Xylenes, total	7090268			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7090268			ug/L					88		75-135			
Benzene	7090348			ug/L	N/A	2.00	<2.00							
Toluene	7090348			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7090348			ug/L	N/A	2.00	<2.00							
Xylenes, total	7090348			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7090348			ug/L					89		75-135			
Benzene	7090462			ug/L	N/A	2.00	<2.00							
Toluene	7090462			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7090462			ug/L	N/A	2.00	<2.00							
Xylenes, total	7090462			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7090462			ug/L					89		75-135			
Benzene	7090546			ug/L	N/A	2.00	<2.00							
Toluene	7090546			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7090546			ug/L	N/A	2.00	<2.00							
Xylenes, total	7090546			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7090546			ug/L					92		75-135			
Benzene	7090633			ug/L	N/A	2.00	<2.00							
Toluene	7090633			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7090633			ug/L	N/A	2.00	<2.00							
Xylenes, total	7090633			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7090633			ug/L					92		75-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0313
Project: Dubuque Brownfields
Project Number: 07047024

Received: 09/06/07
Reported: 09/17/07 11:19

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
Dissolved Metals by SW 846 Series Methods														
Lead	7090354		0.0400	mg/L	N/A	0.00400	0.0382	0.0430	95	108	85-115	12	20	
UST Volatile Compounds by GC														
Benzene	7090268		48.0	ug/L	N/A	N/A	28.8		60		50-115			
Toluene	7090268		48.0	ug/L	N/A	N/A	36.8		77		65-110			
Ethylbenzene	7090268		48.0	ug/L	N/A	N/A	42.3		88		70-110			
Xylenes, total	7090268		144	ug/L	N/A	N/A	123		85		70-110			
Surrogate: 4-Bromofluorobenzene	7090268			ug/L					91		80-130			
Benzene	7090348		48.0	ug/L	N/A	N/A	27.7		58		50-115			
Toluene	7090348		48.0	ug/L	N/A	N/A	36.7		76		65-110			
Ethylbenzene	7090348		48.0	ug/L	N/A	N/A	42.9		89		70-110			
Xylenes, total	7090348		144	ug/L	N/A	N/A	124		86		70-110			
Surrogate: 4-Bromofluorobenzene	7090348			ug/L					92		80-130			
Benzene	7090462		48.0	ug/L	N/A	N/A	33.3		69		50-115			
Toluene	7090462		48.0	ug/L	N/A	N/A	38.6		80		65-110			
Ethylbenzene	7090462		48.0	ug/L	N/A	N/A	42.7		89		70-110			
Xylenes, total	7090462		144	ug/L	N/A	N/A	123		86		70-110			
Surrogate: 4-Bromofluorobenzene	7090462			ug/L					90		80-130			
Benzene	7090546		48.0	ug/L	N/A	N/A	39.5		82		50-115			
Toluene	7090546		48.0	ug/L	N/A	N/A	40.3		84		65-110			
Ethylbenzene	7090546		48.0	ug/L	N/A	N/A	41.7		87		70-110			
Xylenes, total	7090546		144	ug/L	N/A	N/A	119		83		70-110			
Surrogate: 4-Bromofluorobenzene	7090546			ug/L					91		80-130			
Benzene	7090633		48.0	ug/L	N/A	N/A	39.0		81		50-115			
Toluene	7090633		48.0	ug/L	N/A	N/A	40.2		84		65-110			
Ethylbenzene	7090633		48.0	ug/L	N/A	N/A	41.4		86		70-110			
Xylenes, total	7090633		144	ug/L	N/A	N/A	119		83		70-110			
Surrogate: 4-Bromofluorobenzene	7090633			ug/L					91		80-130			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0313
Project: Dubuque Brownfields
Project Number: 07047024

Received: 09/06/07
Reported: 09/17/07 11:19

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Dissolved Metals by SW 846 Series Methods														
QC Source Sample: CQI0313-01														
Lead	7090354	0.102	0.0400	mg/L	N/A	0.0400	0.134	0.136	80	84	75-125	1	20	
UST Volatile Compounds by GC														
QC Source Sample: CQI0245-01														
Benzene	7090268	0.174	48.0	ug/L	N/A	N/A	28.5	28.4	59	59	50-115	0	10	
Toluene	7090268	<N/A	48.0	ug/L	N/A	N/A	37.0	36.8	77	77	65-110	1	10	
Ethylbenzene	7090268	<N/A	48.0	ug/L	N/A	N/A	43.3	42.8	90	89	65-115	1	10	
Xylenes, total	7090268	2.03	144	ug/L	N/A	N/A	125	124	86	85	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	7090268			ug/L					90	90	80-135			
QC Source Sample: CQI0313-08														
Benzene	7090348	1280	48.0	ug/L	N/A	N/A	1360	1310	162	62	50-115	4	10	M1
Toluene	7090348	7.44	48.0	ug/L	N/A	N/A	45.7	46.8	80	82	65-110	2	10	
Ethylbenzene	7090348	10.4	48.0	ug/L	N/A	N/A	56.6	56.3	96	96	65-115	1	10	
Xylenes, total	7090348	17.3	144	ug/L	N/A	N/A	139	139	85	85	65-115	0	10	
Surrogate: 4-Bromofluorobenzene	7090348			ug/L					96	96	80-135			
QC Source Sample: CQI0307-14														
Benzene	7090462	29.1	48.0	ug/L	N/A	N/A	70.3	67.4	86	80	50-115	4	10	
Toluene	7090462	46.4	48.0	ug/L	N/A	N/A	89.2	85.8	89	82	65-110	4	10	
Ethylbenzene	7090462	3.22	48.0	ug/L	N/A	N/A	45.6	45.6	88	88	65-115	0	10	
Xylenes, total	7090462	113	144	ug/L	N/A	N/A	233	225	84	78	65-115	3	10	
Surrogate: 4-Bromofluorobenzene	7090462			ug/L					93	94	80-135			
QC Source Sample: CQI0399-11														
Benzene	7090546	1140	48.0	ug/L	N/A	N/A	909	912	-473	-467	50-115	0	10	M1
Toluene	7090546	23.6	48.0	ug/L	N/A	N/A	64.1	64.2	85	85	65-110	0	10	
Ethylbenzene	7090546	69.3	48.0	ug/L	N/A	N/A	112	112	89	89	65-115	0	10	
Xylenes, total	7090546	161	144	ug/L	N/A	N/A	271	271	76	76	65-115	0	10	
Surrogate: 4-Bromofluorobenzene	7090546			ug/L					94	93	80-135			
QC Source Sample: CQI0399-23														
Benzene	7090633	7.66	48.0	ug/L	N/A	N/A	45.8	45.8	79	79	50-115	0	10	
Toluene	7090633	124	48.0	ug/L	N/A	N/A	163	164	81	83	65-110	0	10	
Ethylbenzene	7090633	175	48.0	ug/L	N/A	N/A	217	218	87	90	65-115	1	10	
Xylenes, total	7090633	513	144	ug/L	N/A	N/A	614	617	70	72	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	7090633			ug/L					91	91	80-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQI0313
Project: Dubuque Brownfields
Project Number: 07047024

Received: 09/06/07
Reported: 09/17/07 11:19

CERTIFICATION SUMMARY

TestAmerica - Cedar Falls, IA

Method	Matrix	Nelac	Iowa
OA-1 - 8021B	Water - NonPotable	X	X
SW 7421	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF09-01.

DATA QUALIFIERS AND DEFINITIONS

M1 The MS and/or MSD were outside control limits.

ADDITIONAL COMMENTS

Sample Receipt and Temperature Log Form

Client: Terracor Project: _____
City: Beltsford IA
Date: 9/06/07 Receiver's Initials: ZB Time (Delivered): 17:30

Temperature Record:

Cooler ID# (If Applicable)

DAV 9

2 °C On Ice

☒ Temp Blank

☐ Temperature out of compliance

Thermometer:

☐ IR - 61997670 'A'

☒ IR - 61997671 'B'

☐ IR - 61854108

☐ 22126775

Courier:

☐ UPS

☐ TA Courier

☐ FedEx

☐ TA Field Services

☐ DHL

☐ Client

☐ US Postal Service

☒ Other

☐ Spee-Dee

Custody seals present?

☐ Yes

Custody seals intact?

☐ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

☐ Sample(s) not received in a cooler.

☐ Samples(s) received same day of sampling.

☐ Evidence of a chilling process

☐ Temperature not taken:

*Refer to SOP CF01-01 for Temperature Criteria

H:\QA Folder\QA Forms & Log Book pgs\Cooler Receipt rev11.doc

December 27, 2007

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CQL0879
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 12/19/07

The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
SB-23	CQL0879-01	12/17/07 12:15
SB-23 50'	CQL0879-02	12/17/07 13:00
SB-23 30'	CQL0879-03	12/17/07 14:30
SB-3	CQL0879-04	12/17/07 15:55

Samples were received into laboratory at a temperature of 1 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

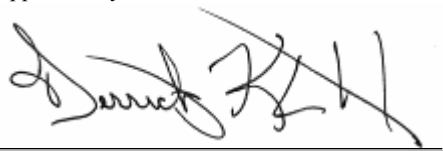
The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls
Derrick Klinkenberg
Organics Manager

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQL0879
Project: Dubuque Brownfields
Project Number: 07047024

Received: 12/19/07
Reported: 12/27/07 15:25

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQL0879-01 (SB-23 - Ground Water)				Sampled: 12/17/07 12:15			Recvd: 12/19/07 08:50		
UST Volatile Compounds by GC									
Benzene	23000		ug/L	200	100	12/22/07 08:50	mmk	7120863	OA-1 - 8021B
Toluene	19500		ug/L	200	100	12/22/07 08:50	mmk	7120863	OA-1 - 8021B
Ethylbenzene	3130		ug/L	200	100	12/22/07 08:50	mmk	7120863	OA-1 - 8021B
Xylenes, total	12900		ug/L	300	100	12/22/07 08:50	mmk	7120863	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	102 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	12/20/07 14:33	mmk	7120775	SW
Sample ID: CQL0879-02 (SB-23 50' - Ground Water)				Sampled: 12/17/07 13:00			Recvd: 12/19/07 08:50		
UST Volatile Compounds by GC									
Benzene	1370		ug/L	20.0	10	12/26/07 14:44	mmk	7120894	OA-1 - 8021B
Toluene	126		ug/L	2.00	1	12/21/07 12:19	mmk	7120821	OA-1 - 8021B
Ethylbenzene	77.5		ug/L	2.00	1	12/21/07 12:19	mmk	7120821	OA-1 - 8021B
Xylenes, total	284		ug/L	3.00	1	12/21/07 12:19	mmk	7120821	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	98 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	12/26/07 13:24	mmk	7120869	SW
Sample ID: CQL0879-03 (SB-23 30' - Ground Water)				Sampled: 12/17/07 14:30			Recvd: 12/19/07 08:50		
UST Volatile Compounds by GC									
Benzene	375		ug/L	2.00	1	12/21/07 12:53	mmk	7120821	OA-1 - 8021B
Toluene	550		ug/L	2.00	1	12/21/07 12:53	mmk	7120821	OA-1 - 8021B
Ethylbenzene	233		ug/L	2.00	1	12/21/07 12:53	mmk	7120821	OA-1 - 8021B
Xylenes, total	728		ug/L	3.00	1	12/21/07 12:53	mmk	7120821	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	99 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	12/26/07 13:24	mmk	7120869	SW
Sample ID: CQL0879-04 (SB-3 - Ground Water)				Sampled: 12/17/07 15:55			Recvd: 12/19/07 08:50		
UST Volatile Compounds by GC									
Benzene	33.3		ug/L	2.00	1	12/21/07 04:17	mmk	7120821	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	12/21/07 04:17	mmk	7120821	OA-1 - 8021B
Ethylbenzene	5.18		ug/L	2.00	1	12/21/07 04:17	mmk	7120821	OA-1 - 8021B
Xylenes, total	7.31		ug/L	3.00	1	12/21/07 04:17	mmk	7120821	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	92 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	12/21/07 13:04	mmk	7120824	SW

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQL0879
Project: Dubuque Brownfields
Project Number: 07047024

Received: 12/19/07
Reported: 12/27/07 15:25

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	7120821			ug/L	N/A	2.00	<2.00							
Toluene	7120821			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7120821			ug/L	N/A	2.00	<2.00							
Xylenes, total	7120821			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7120821			ug/L					101		75-135			
Benzene	7120863			ug/L	N/A	2.00	<2.00							
Toluene	7120863			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7120863			ug/L	N/A	2.00	<2.00							
Xylenes, total	7120863			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7120863			ug/L					94		75-135			
Benzene	7120894			ug/L	N/A	2.00	<2.00							
Toluene	7120894			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7120894			ug/L	N/A	2.00	<2.00							
Xylenes, total	7120894			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7120894			ug/L					95		75-135			

TERRACON - BETTENDORF
870 40th Avenue
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John Brimeyer

Work Order: CQL0879
Project: Dubuque Brownfields
Project Number: 07047024

Received: 12/19/07
Reported: 12/27/07 15:25

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	7120821		48.0	ug/L	N/A	N/A	37.4		78		50-115			
Toluene	7120821		48.0	ug/L	N/A	N/A	44.1		92		65-110			
Ethylbenzene	7120821		48.0	ug/L	N/A	N/A	47.7		99		70-110			
Xylenes, total	7120821		144	ug/L	N/A	N/A	142		98		70-110			
Surrogate: 4-Bromofluorobenzene	7120821			ug/L					98		80-130			
Benzene	7120863		48.0	ug/L	N/A	N/A	35.0		73		50-115			
Toluene	7120863		48.0	ug/L	N/A	N/A	42.1		88		65-110			
Ethylbenzene	7120863		48.0	ug/L	N/A	N/A	46.9		98		70-110			
Xylenes, total	7120863		144	ug/L	N/A	N/A	136		95		70-110			
Surrogate: 4-Bromofluorobenzene	7120863			ug/L					100		80-130			
Benzene	7120894		48.0	ug/L	N/A	N/A	32.5		68		50-115			
Toluene	7120894		48.0	ug/L	N/A	N/A	41.5		86		65-110			
Ethylbenzene	7120894		48.0	ug/L	N/A	N/A	47.2		98		70-110			
Xylenes, total	7120894		144	ug/L	N/A	N/A	136		95		70-110			
Surrogate: 4-Bromofluorobenzene	7120894			ug/L					101		80-130			

TERRACON - BETTENDORF
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Work Order: CQL0879
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Received: 12/19/07
Reported: 12/27/07 15:25

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
QC Source Sample: CQL0879-04														
Benzene	7120821	33.3	48.0	ug/L	N/A	N/A	72.3	72.1	81	81	50-115	0	10	
Toluene	7120821	1.81	48.0	ug/L	N/A	N/A	45.2	45.3	90	91	65-110	0	10	
Ethylbenzene	7120821	5.18	48.0	ug/L	N/A	N/A	52.8	53.2	99	100	65-115	1	10	
Xylenes, total	7120821	7.31	144	ug/L	N/A	N/A	147	148	97	98	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	7120821			ug/L					94	96	80-135			
QC Source Sample: CQL0913-11														
Benzene	7120863	0.0470	48.0	ug/L	N/A	N/A	34.8	34.8	72	72	50-115	0	10	
Toluene	7120863	0.0800	48.0	ug/L	N/A	N/A	42.5	42.6	88	89	65-110	0	10	
Ethylbenzene	7120863	0.106	48.0	ug/L	N/A	N/A	47.3	47.2	98	98	65-115	0	10	
Xylenes, total	7120863	0.354	144	ug/L	N/A	N/A	137	136	95	94	65-115	0	10	
Surrogate: 4-Bromofluorobenzene	7120863			ug/L					97	97	80-135			
QC Source Sample: CQL0889-01														
Benzene	7120894	<2.00	48.0	ug/L	N/A	N/A	29.9	29.4	62	61	50-115	1	10	
Toluene	7120894	0.867	48.0	ug/L	N/A	N/A	40.8	40.5	83	83	65-110	1	10	
Ethylbenzene	7120894	0.384	48.0	ug/L	N/A	N/A	47.3	46.9	98	97	65-115	1	10	
Xylenes, total	7120894	1.24	144	ug/L	N/A	N/A	136	137	93	94	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	7120894			ug/L					96	96	80-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQL0879
Project: Dubuque Brownfields
Project Number: 07047024

Received: 12/19/07
Reported: 12/27/07 15:25

CERTIFICATION SUMMARY

TestAmerica Cedar Falls

Method	Matrix	Nelac	Iowa
OA-1 - 8021B	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF09-01.

DRAFT

**To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?**
Compliance Monitoring

Client Name Ierracon Client #
Address 820 40th Ave
City/State/Zip Code Bethendorf, Iowa
Project Manager John Brimyer
Telephone Number 563-355-0702 Fax 563-355-47
Sampler Name: (Print Name) John W. Camerer
Sampler Signature John W. Camerer
Email Address jbrimyer@terracon.com

Client #:

Address: 800 40th Ave
City/State/Zip Code: Bethendorf, Iowa
Project Manager: John Brimmyer
Telephone Number: 563-355-0702 Fax: 563-355-4777
Sampler Name: (Print Name) John W. Cameron
Sampler Signature: John W. Cameron

Email Address: l.j.frimmer@ferracm.com

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[illegible]

Sample Receipt and Temperature Log Form

Client: Terracon Project: DBQ Brownfields

City: _____

Date: 12-19-07 Receiver's Initials: CH Time (Delivered): 8:50

Temperature Record:

Cooler ID# (If Applicable) <u>Borgity-Bee</u>
<u>1.4</u> °C / <u>On Ice</u>

Thermometer:

- ☒ IR - 61997670 'A'
☐ IR - 61997671 'B'
☐ IR - 61854108
☐ 22126775

Courier:

☒ UPS	☐ TA Courier
☐ FedEx	☐ TA Field Services
☐ DHL	☐ Client
☐ US Postal Service	☐ Other
☐ Spee-Dee	

☒ Temp Blank

☐ Temperature out of compliance

Custody seals present?

☒ Yes

Custody seals intact?

☒ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

- ☐ Sample(s) not received in a cooler.
- ☐ Samples(s) received same day of sampling.
- ☐ Evidence of a chilling process
- ☐ Temperature not taken:

December 28, 2007

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CQL0960
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 12/20/07

The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
SB-12	CQL0960-01	12/18/07 09:45
MW-2	CQL0960-02	12/18/07 10:15
MW-4	CQL0960-03	12/18/07 10:45
MW-5	CQL0960-04	12/18/07 11:30
MW-7	CQL0960-05	12/18/07 12:15
SB-24	CQL0960-06	12/18/07 13:30

Samples were received into laboratory at a temperature of 0 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

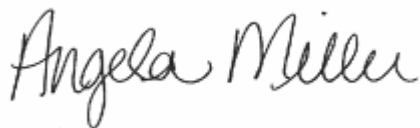
The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls
Angie Miller
Project Coordinator

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQL0960
Project: Dubuque Brownfields
Project Number: 07047024

Received: 12/20/07
Reported: 12/28/07 09:52

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQL0960-01 (SB-12 - Ground Water)				Sampled: 12/18/07 09:45			Recvd: 12/20/07 09:00		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	12/26/07 14:09	mmk	7120894	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	12/26/07 14:09	mmk	7120894	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	12/26/07 14:09	mmk	7120894	OA-1 - 8021B
Xylenes, total	4.38		ug/L	3.00	1	12/26/07 14:09	mmk	7120894	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	96 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	12/26/07 13:24	mmk	7120869	SW
Sample ID: CQL0960-02 (MW-2 - Ground Water)				Sampled: 12/18/07 10:15			Recvd: 12/20/07 09:00		
UST Volatile Compounds by GC									
Benzene	1400		ug/L	20.0	10	12/26/07 17:37	mmk	7120894	OA-1 - 8021B
Toluene	51.1		ug/L	2.00	1	12/22/07 15:36	mmk	7120864	OA-1 - 8021B
Ethylbenzene	703	M1	ug/L	2.00	1	12/22/07 15:36	mmk	7120864	OA-1 - 8021B
Xylenes, total	936	M1	ug/L	3.00	1	12/22/07 15:36	mmk	7120864	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	106 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	12/26/07 13:24	mmk	7120869	SW
Sample ID: CQL0960-03 (MW-4 - Ground Water)				Sampled: 12/18/07 10:45			Recvd: 12/20/07 09:00		
UST Volatile Compounds by GC									
Benzene	5740		ug/L	40.0	20	12/26/07 18:11	mmk	7120894	OA-1 - 8021B
Toluene	25.9		ug/L	2.00	1	12/22/07 16:10	mmk	7120864	OA-1 - 8021B
Ethylbenzene	19.6		ug/L	2.00	1	12/22/07 16:10	mmk	7120864	OA-1 - 8021B
Xylenes, total	49.1		ug/L	3.00	1	12/22/07 16:10	mmk	7120864	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	104 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	12/26/07 13:24	mmk	7120869	SW
Sample ID: CQL0960-04 (MW-5 - Ground Water)				Sampled: 12/18/07 11:30			Recvd: 12/20/07 09:00		
UST Volatile Compounds by GC									
Benzene	18800		ug/L	200	100	12/26/07 19:53	mmk	7120894	OA-1 - 8021B
Toluene	344		ug/L	20.0	10	12/22/07 18:23	mmk	7120864	OA-1 - 8021B
Ethylbenzene	1390		ug/L	20.0	10	12/22/07 18:23	mmk	7120864	OA-1 - 8021B
Xylenes, total	3320		ug/L	30.0	10	12/22/07 18:23	mmk	7120864	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	99 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	12/21/07 13:04	mmk	7120824	SW
Sample ID: CQL0960-05 (MW-7 - Ground Water)				Sampled: 12/18/07 12:15			Recvd: 12/20/07 09:00		
UST Volatile Compounds by GC									
Benzene	22100		ug/L	200	100	12/27/07 22:33	mmk	7120954	OA-1 - 8021B
Toluene	4110		ug/L	20.0	10	12/26/07 21:01	mmk	7120894	OA-1 - 8021B
Ethylbenzene	2810		ug/L	20.0	10	12/26/07 21:01	mmk	7120894	OA-1 - 8021B
Xylenes, total	7940		ug/L	30.0	10	12/26/07 21:01	mmk	7120894	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	102 %								
VOC Preservation Check									

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQL0960
Project: Dubuque Brownfields
Project Number: 07047024

Received: 12/20/07
Reported: 12/28/07 09:52

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQL0960-05 (MW-7 - Ground Water) - cont.					Sampled: 12/18/07 12:15		Recvd: 12/20/07 09:00		
VOC Preservation Check - cont.									
pH	<2.00		units	2.00	1	12/21/07 13:04	mmk	7120824	SW
Sample ID: CQL0960-06 (SB-24 - Ground Water)					Sampled: 12/18/07 13:30		Recvd: 12/20/07 09:00		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	12/22/07 06:34	mmk	7120863	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	12/22/07 06:34	mmk	7120863	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	12/22/07 06:34	mmk	7120863	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	12/22/07 06:34	mmk	7120863	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	96 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	12/26/07 13:24	mmk	7120869	SW

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQL0960
Project: Dubuque Brownfields
Project Number: 07047024

Received: 12/20/07
Reported: 12/28/07 09:52

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	7120863			ug/L	N/A	2.00	<2.00							
Toluene	7120863			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7120863			ug/L	N/A	2.00	<2.00							
Xylenes, total	7120863			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7120863			ug/L					94		75-135			
Benzene	7120864			ug/L	N/A	2.00	<2.00							
Toluene	7120864			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7120864			ug/L	N/A	2.00	<2.00							
Xylenes, total	7120864			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7120864			ug/L					96		75-135			
Benzene	7120894			ug/L	N/A	2.00	<2.00							
Toluene	7120894			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7120894			ug/L	N/A	2.00	<2.00							
Xylenes, total	7120894			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7120894			ug/L					95		75-135			
Benzene	7120954			ug/L	N/A	2.00	<2.00							
Toluene	7120954			ug/L	N/A	2.00	<2.00							
Ethylbenzene	7120954			ug/L	N/A	2.00	<2.00							
Xylenes, total	7120954			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	7120954			ug/L					96		75-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQL0960
Project: Dubuque Brownfields
Project Number: 07047024

Received: 12/20/07
Reported: 12/28/07 09:52

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	7120863		48.0	ug/L	N/A	N/A	35.0		73		50-115			
Toluene	7120863		48.0	ug/L	N/A	N/A	42.1		88		65-110			
Ethylbenzene	7120863		48.0	ug/L	N/A	N/A	46.9		98		70-110			
Xylenes, total	7120863		144	ug/L	N/A	N/A	136		95		70-110			
Surrogate: 4-Bromofluorobenzene	7120863			ug/L					100		80-130			
Benzene	7120864		48.0	ug/L	N/A	N/A	36.7		76		50-115			
Toluene	7120864		48.0	ug/L	N/A	N/A	44.0		92		65-110			
Ethylbenzene	7120864		48.0	ug/L	N/A	N/A	47.9		100		70-110			
Xylenes, total	7120864		144	ug/L	N/A	N/A	143		99		70-110			
Surrogate: 4-Bromofluorobenzene	7120864			ug/L					100		80-130			
Benzene	7120894		48.0	ug/L	N/A	N/A	32.5		68		50-115			
Toluene	7120894		48.0	ug/L	N/A	N/A	41.5		86		65-110			
Ethylbenzene	7120894		48.0	ug/L	N/A	N/A	47.2		98		70-110			
Xylenes, total	7120894		144	ug/L	N/A	N/A	136		95		70-110			
Surrogate: 4-Bromofluorobenzene	7120894			ug/L					101		80-130			
Benzene	7120954		48.0	ug/L	N/A	N/A	31.1		65		50-115			
Toluene	7120954		48.0	ug/L	N/A	N/A	40.9		85		65-110			
Ethylbenzene	7120954		48.0	ug/L	N/A	N/A	47.2		98		70-110			
Xylenes, total	7120954		144	ug/L	N/A	N/A	138		95		70-110			
Surrogate: 4-Bromofluorobenzene	7120954			ug/L					99		80-130			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQL0960
Project: Dubuque Brownfields
Project Number: 07047024

Received: 12/20/07
Reported: 12/28/07 09:52

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
QC Source Sample: CQL0913-11														
Benzene	7120863	0.0470	48.0	ug/L	N/A	N/A	34.8	34.8	72	72	50-115	0	10	
Toluene	7120863	0.0800	48.0	ug/L	N/A	N/A	42.5	42.6	88	89	65-110	0	10	
Ethylbenzene	7120863	0.106	48.0	ug/L	N/A	N/A	47.3	47.2	98	98	65-115	0	10	
Xylenes, total	7120863	0.354	144	ug/L	N/A	N/A	137	136	95	94	65-115	0	10	
Surrogate: 4-Bromofluorobenzene	7120863			ug/L					97	97	80-135			
QC Source Sample: CQL0960-02														
Benzene	7120864	1010	48.0	ug/L	N/A	N/A	1040	1040	73	54	50-115	1	10	
Toluene	7120864	51.1	48.0	ug/L	N/A	N/A	93.7	93.4	89	88	65-110	0	10	
Ethylbenzene	7120864	703	48.0	ug/L	N/A	N/A	738	732	72	60	65-115	1	10	M1
Xylenes, total	7120864	936	144	ug/L	N/A	N/A	1020	1020	61	56	65-115	1	10	M1
Surrogate: 4-Bromofluorobenzene	7120864			ug/L					106	104	80-135			
QC Source Sample: CQL0889-01														
Benzene	7120894	<2.00	48.0	ug/L	N/A	N/A	29.9	29.4	62	61	50-115	1	10	
Toluene	7120894	0.867	48.0	ug/L	N/A	N/A	40.8	40.5	83	83	65-110	1	10	
Ethylbenzene	7120894	0.384	48.0	ug/L	N/A	N/A	47.3	46.9	98	97	65-115	1	10	
Xylenes, total	7120894	1.24	144	ug/L	N/A	N/A	136	137	93	94	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	7120894			ug/L					96	96	80-135			
QC Source Sample: CQL1060-02														
Benzene	7120954	0.892	48.0	ug/L	N/A	N/A	30.9	31.1	63	63	50-115	1	10	
Toluene	7120954	0.349	48.0	ug/L	N/A	N/A	41.3	41.8	85	86	65-110	1	10	
Ethylbenzene	7120954	0.248	48.0	ug/L	N/A	N/A	47.4	47.6	98	99	65-115	0	10	
Xylenes, total	7120954	1.26	144	ug/L	N/A	N/A	139	139	96	96	65-115	0	10	
Surrogate: 4-Bromofluorobenzene	7120954			ug/L					102	98	80-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CQL0960
Project: Dubuque Brownfields
Project Number: 07047024

Received: 12/20/07
Reported: 12/28/07 09:52

CERTIFICATION SUMMARY

TestAmerica Cedar Falls

Method	Matrix	Nelac	Iowa
OA-1 - 8021B	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF09-01.

DATA QUALIFIERS AND DEFINITIONS

M1 The MS and/or MSD were outside control limits.

ADDITIONAL COMMENTS

ANALYTICAL TESTING CORPORATION

Phone 319-277-2401 or 800-750-2401
Fax 319-277-2425

**To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?**
Compliance Monitoring

Client Name: Eltracor Client #: _____
Address: 870 40th Ave
City/State/Zip Code: Bethendorf, IA 52722
Project Manager: John F. Brimmer
Telephone Number: 563-355-0702 Fax: 563-355-4777
Sampler Name: (Print Name) John W. Cameron
Sampler Signature: John W. Cameron
Email Address: jbrimmer@eltracor.com

Project Name: Dubugue Brownfield's
Project #: 07047024
Site/Location ID: Dubugue State: Iowa
Report To: JFB
Invoice To: JFB
Quote #: _____ PO#: _____

Sampler Name: (Print Name) John W. Cameron
 Sampler Signature: John W. Cameron
 Email Address: thbrimyer@terracon.com

TAT		Date Needed:		Date Sampled		Time Sampled		G = Grab, C = Composite		Field Filtered		Matrix		Preservation & # of Containers		Analyze For:		QC Deliverables	
Standard	Rush (surcharges may apply)																		
Fax Results:	Y N																		
Email Results:	Y N																		
SAMPLE ID																			
SB-12				12/18/07	9:45	6													
MW-2					10:15														
MW-4					10:45														
MW-5					11:30														
MW-7					12:15														
SB-24					13:30														
LABORATORY COMMENTS:																			
Special Instructions:																			
Relinquished By: <i>John W. Cannon</i>		12/19/07		5:00		Time:		Received By: <i>John W. Cannon</i>		12/19/07		5:20		Time:		Relinquished By:			
Relinquished By:		Date:		Time:				Received By:		Date:		Time:				Relinquished By:			
Relinquished By:		Date:		Time:				Received By:		Date:		Time:				Relinquished By:			

Sample Receipt and Temperature Log Form

Client: Terralon

Project: DBP Brownfields

City: _____

Date: 2-20-07 Receiver's Initials: CH Time (Delivered): 9:00

Temperature Record:

Cooler ID# (If Applicable) <u>EXP 171</u>
<u>0.1</u> °C / <u>On Ice</u>

Thermometer:

- ☒ IR - 61997670 'A'
☐ IR - 61997671 'B'
☐ IR - 61854108
☐ 22126775

Courier:

☒ UPS	☐ TA Courier
☐ FedEx	☐ TA Field Services
☐ DHL	☐ Client
☐ US Postal Service	☐ Other
☐ Spee-Dee	

☒ Temp Blank

☐ Temperature out of compliance

Custody seals present?

☒ Yes

Custody seals intact?

☒ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

- ☐ Sample(s) not received in a cooler.
☐ Samples(s) received same day of sampling.
☐ Evidence of a chilling process
☐ Temperature not taken:

January 14, 2008

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CRA0295
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 01/09/08

The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
SB-23 100'	CRA0295-01	01/07/08 15:30
SB-23 75'	CRA0295-02	01/07/08 16:00

Samples were received into laboratory at a temperature of 0 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

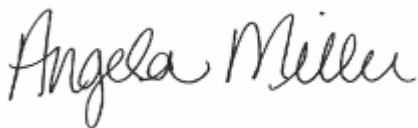
The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls
Angie Miller
Project Coordinator

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRA0295
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/09/08
Reported: 01/14/08 15:33

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CRA0295-01 (SB-23 100' - Ground Water)				Sampled: 01/07/08 15:30			Recvd: 01/09/08 08:50		
UST Volatile Compounds by GC									
Benzene	5.79		ug/L	2.00	1	01/11/08 00:55	mmk	8010344	OA-1 - 8021B
Toluene	11.5		ug/L	2.00	1	01/11/08 00:55	mmk	8010344	OA-1 - 8021B
Ethylbenzene	4.88		ug/L	2.00	1	01/11/08 00:55	mmk	8010344	OA-1 - 8021B
Xylenes, total	13.6		ug/L	3.00	1	01/11/08 00:55	mmk	8010344	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	96 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	01/14/08 15:20	fmk	8010420	SW
Sample ID: CRA0295-02 (SB-23 75' - Ground Water)				Sampled: 01/07/08 16:00			Recvd: 01/09/08 08:50		
UST Volatile Compounds by GC									
Benzene	20.0		ug/L	2.00	1	01/11/08 01:28	mmk	8010344	OA-1 - 8021B
Toluene	33.2		ug/L	2.00	1	01/11/08 01:28	mmk	8010344	OA-1 - 8021B
Ethylbenzene	11.7		ug/L	2.00	1	01/11/08 01:28	mmk	8010344	OA-1 - 8021B
Xylenes, total	38.8		ug/L	3.00	1	01/11/08 01:28	mmk	8010344	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	98 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	01/14/08 15:20	fmk	8010420	SW

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRA0295
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/09/08
Reported: 01/14/08 15:33

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	8010344			ug/L	N/A	2.00	<2.00							
Toluene	8010344			ug/L	N/A	2.00	<2.00							
Ethylbenzene	8010344			ug/L	N/A	2.00	<2.00							
Xylenes, total	8010344			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	8010344			ug/L					95		75-135			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRA0295
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/09/08
Reported: 01/14/08 15:33

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	8010344		48.0	ug/L	N/A	N/A	38.6		80		50-115			
Toluene	8010344		48.0	ug/L	N/A	N/A	45.0		94		65-110			
Ethylbenzene	8010344		48.0	ug/L	N/A	N/A	46.6		97		70-110			
Xylenes, total	8010344		144	ug/L	N/A	N/A	134		93		70-110			
Surrogate: 4-Bromofluorobenzene	8010344			ug/L					102		80-130			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRA0295
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/09/08
Reported: 01/14/08 15:33

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
QC Source Sample: CRA0336-07														
Benzene	8010344	0.102	48.0	ug/L	N/A	N/A	39.1	39.2	81	81	50-115	0	10	
Toluene	8010344	0.211	48.0	ug/L	N/A	N/A	46.1	45.4	96	94	65-110	2	10	
Ethylbenzene	8010344	0.173	48.0	ug/L	N/A	N/A	46.9	46.9	97	97	65-115	0	10	
Xylenes, total	8010344	0.683	144	ug/L	N/A	N/A	136	135	94	94	65-115	0	10	
Surrogate: 4-Bromofluorobenzene	8010344			ug/L					100	99	80-135			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRA0295
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/09/08
Reported: 01/14/08 15:33

CERTIFICATION SUMMARY

TestAmerica Cedar Falls

Method	Matrix	Nelac	Iowa
OA-1 - 8021B	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF09-01.

DRAFT

**To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?**
Compliance Monitoring

Client Name: Terracon Client #: _____
Address: 870 40th Ave
City/State/Zip Code: Bethesda, Iowa 52722
Project Manager: John F. Brimmer
Telephone Number: 563-355-0702 Fax: 563-355-4788
Sampler Name: (Print Name) John W. Cameron
Sampler Signature: John W. Cameron
Email Address: jbrimmer@terracon.com

Client #:

Address: 870 40th Ave
City/State/Zip Code: Bethesda, Iowa 52722
Project Manager: John F. Brimeyer
Telephone Number: 563-355-0702 Fax: 563-355-4789

Fax:

Sampler Name: (Print Name) John W. Cameron

Sampler Signature: John W. Cameron

Sampler Signature:

Email Address: i4brimmer@a1ttracur.com

[illegible]

Sample Receipt and Temperature Log Form

Client: TerraconProject: DBQ Brownfields

City: _____

Date: 1-9-08 Receiver's Initials: QH Time (Delivered): 8:50**Temperature Record:**

Cooler ID# (If Applicable)

QCCSC0.3 °C On Ice☒ Temp Blank☐ Temperature out of compliance

Custody seals present?

☒ Yes

Custody seals intact?

☒ Yes ☐ No☐ Non-Conformance report started**Thermometer:**☒ IR - 61997670 'A'☐ IR - 61997671 'B'☐ IR - 61854108☐ 22126775**Courier:**☒ UPS☐ FedEx☐ DHL☐ US Postal Service☐ Spee-Dee☐ TA Courier☐ TA Field Services☐ Client☐ Other**Exceptions Noted**☐ Sample(s) not received in a cooler.☐ Samples(s) received same day of sampling.☐ Evidence of a chilling process☐ Temperature not taken:

August 04, 2008

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CRG1178
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 07/24/08

The Chain(s) of Custody, 3 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
MW-2	CRG1178-01	07/21/08 09:55
MW-6	CRG1178-02	07/21/08 11:10
MW-5	CRG1178-03	07/21/08 12:05
MW-SB-23	CRG1178-04	07/21/08 13:55
MW-7	CRG1178-05	07/21/08 14:45
MW-SB-16	CRG1178-06	07/21/08 15:35
MW-SB-11	CRG1178-07	07/21/08 16:20
MW-SB-7	CRG1178-08	07/21/08 16:56
MW-SB-14	CRG1178-09	07/21/08 17:35
MW-SB-26	CRG1178-10	07/21/08 18:35
MW-3	CRG1178-11	07/22/08 08:40
MW-SB-17	CRG1178-12	07/22/08 10:00

Samples were received into laboratory at a temperature of 0 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the specific sample analyzed.

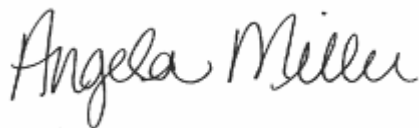
TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRG1178
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/08
Reported: 08/04/08 11:23

DRAFT

Approved By:



TestAmerica Cedar Falls
Angie Miller
Project Coordinator

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRG1178
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/08
Reported: 08/04/08 11:23

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CRG1178-01 (MW-2 - Ground Water)				Sampled: 07/21/08 09:55			Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	325		ug/L	2.00	1	07/29/08 14:53	fmk	8071116	OA-1 - 8021B
Toluene	20.3		ug/L	2.00	1	07/29/08 14:53	fmk	8071116	OA-1 - 8021B
Ethylbenzene	78.5		ug/L	2.00	1	07/29/08 14:53	fmk	8071116	OA-1 - 8021B
Xylenes, total	89.9		ug/L	3.00	1	07/29/08 14:53	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	113 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/28/08 16:06	fmk	8071072	SW
Sample ID: CRG1178-02 (MW-6 - Ground Water)				Sampled: 07/21/08 11:10			Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	3780		ug/L	40.0	20	07/29/08 17:38	fmk	8071116	OA-1 - 8021B
Toluene	76.4		ug/L	40.0	20	07/29/08 17:38	fmk	8071116	OA-1 - 8021B
Ethylbenzene	1370		ug/L	40.0	20	07/29/08 17:38	fmk	8071116	OA-1 - 8021B
Xylenes, total	3840		ug/L	60.0	20	07/29/08 17:38	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	115 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/28/08 16:06	fmk	8071072	SW
Sample ID: CRG1178-03 (MW-5 - Ground Water)				Sampled: 07/21/08 12:05			Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	6440		ug/L	40.0	20	07/29/08 18:12	fmk	8071116	OA-1 - 8021B
Toluene	219		ug/L	40.0	20	07/29/08 18:12	fmk	8071116	OA-1 - 8021B
Ethylbenzene	1060		ug/L	40.0	20	07/29/08 18:12	fmk	8071116	OA-1 - 8021B
Xylenes, total	2220		ug/L	60.0	20	07/29/08 18:12	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	115 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/28/08 16:06	fmk	8071072	SW
Sample ID: CRG1178-04 (MW-SB-23 - Ground Water)				Sampled: 07/21/08 13:55			Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	23600		ug/L	200	100	07/29/08 20:24	fmk	8071116	OA-1 - 8021B
Toluene	22400		ug/L	200	100	07/29/08 20:24	fmk	8071116	OA-1 - 8021B
Ethylbenzene	4200		ug/L	200	100	07/29/08 20:24	fmk	8071116	OA-1 - 8021B
Xylenes, total	18000		ug/L	300	100	07/29/08 20:24	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	117 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/25/08 16:30	mmk	8071023	SW
Sample ID: CRG1178-05 (MW-7 - Ground Water)				Sampled: 07/21/08 14:45			Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	6530		ug/L	20.0	10	07/29/08 18:45	fmk	8071116	OA-1 - 8021B
Toluene	975		ug/L	20.0	10	07/29/08 18:45	fmk	8071116	OA-1 - 8021B
Ethylbenzene	547		ug/L	20.0	10	07/29/08 18:45	fmk	8071116	OA-1 - 8021B
Xylenes, total	1860		ug/L	30.0	10	07/29/08 18:45	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	116 %								
VOC Preservation Check									

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRG1178
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/08
Reported: 08/04/08 11:23

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CRG1178-05 (MW-7 - Ground Water) - cont.					Sampled: 07/21/08 14:45		Recvd: 07/24/08 08:50		
VOC Preservation Check - cont.									
pH	<2.00		units	2.00	1	07/28/08 16:06	fmk	8071072	SW
Sample ID: CRG1178-06 (MW-SB-16 - Ground Water)					Sampled: 07/21/08 15:35		Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	1160		ug/L	20.0	10	07/29/08 17:05	fmk	8071116	OA-1 - 8021B
Toluene	21.6		ug/L	20.0	10	07/29/08 17:05	fmk	8071116	OA-1 - 8021B
Ethylbenzene	112		ug/L	20.0	10	07/29/08 17:05	fmk	8071116	OA-1 - 8021B
Xylenes, total	57.0		ug/L	30.0	10	07/29/08 17:05	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	112 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/28/08 16:06	fmk	8071072	SW
Sample ID: CRG1178-07 (MW-SB-11 - Ground Water)					Sampled: 07/21/08 16:20		Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	1890		ug/L	20.0	10	07/29/08 20:57	fmk	8071116	OA-1 - 8021B
Toluene	1120		ug/L	20.0	10	07/29/08 20:57	fmk	8071116	OA-1 - 8021B
Ethylbenzene	3210		ug/L	20.0	10	07/29/08 20:57	fmk	8071116	OA-1 - 8021B
Xylenes, total	8680		ug/L	30.0	10	07/29/08 20:57	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	119 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/25/08 16:30	mmk	8071023	SW
Sample ID: CRG1178-08 (MW-SB-7 - Ground Water)					Sampled: 07/21/08 16:56		Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	2710		ug/L	200	100	07/29/08 21:30	fmk	8071116	OA-1 - 8021B
Toluene	8990		ug/L	200	100	07/29/08 21:30	fmk	8071116	OA-1 - 8021B
Ethylbenzene	6560		ug/L	200	100	07/29/08 21:30	fmk	8071116	OA-1 - 8021B
Xylenes, total	28000		ug/L	300	100	07/29/08 21:30	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	114 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/25/08 16:30	mmk	8071023	SW
Sample ID: CRG1178-09 (MW-SB-14 - Ground Water)					Sampled: 07/21/08 17:35		Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	1930		ug/L	20.0	10	07/29/08 19:18	fmk	8071116	OA-1 - 8021B
Toluene	252		ug/L	20.0	10	07/29/08 19:18	fmk	8071116	OA-1 - 8021B
Ethylbenzene	2160		ug/L	20.0	10	07/29/08 19:18	fmk	8071116	OA-1 - 8021B
Xylenes, total	1880		ug/L	30.0	10	07/29/08 19:18	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	116 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/28/08 16:06	fmk	8071072	SW
Sample ID: CRG1178-10 (MW-SB-26 - Ground Water)					Sampled: 07/21/08 18:35		Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	7880		ug/L	40.0	20	07/29/08 19:51	fmk	8071116	OA-1 - 8021B
Toluene	5900		ug/L	40.0	20	07/29/08 19:51	fmk	8071116	OA-1 - 8021B
Ethylbenzene	4000		ug/L	40.0	20	07/29/08 19:51	fmk	8071116	OA-1 - 8021B

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRG1178
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/08
Reported: 08/04/08 11:23

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CRG1178-10 (MW-SB-26 - Ground Water) - cont.					Sampled: 07/21/08 18:35		Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC - cont.									
Xylenes, total	20300		ug/L	60.0	20	07/29/08 19:51	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)		119 %							
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/28/08 16:06	fmk	8071072	SW
Sample ID: CRG1178-11 (MW-3 - Ground Water)					Sampled: 07/22/08 08:40		Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	16900		ug/L	200	100	07/31/08 16:28	fmk	8080012	OA-1 - 8021B
Toluene	598		ug/L	20.0	10	07/29/08 22:03	fmk	8071116	OA-1 - 8021B
Ethylbenzene	3910		ug/L	20.0	10	07/29/08 22:03	fmk	8071116	OA-1 - 8021B
Xylenes, total	13700		ug/L	30.0	10	07/29/08 22:03	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)		124 %							
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/25/08 16:30	mmk	8071023	SW
Sample ID: CRG1178-12 (MW-SB-17 - Ground Water)					Sampled: 07/22/08 10:00		Recvd: 07/24/08 08:50		
UST Volatile Compounds by GC									
Benzene	7430		ug/L	20.0	10	07/29/08 22:36	fmk	8071116	OA-1 - 8021B
Toluene	1590		ug/L	20.0	10	07/29/08 22:36	fmk	8071116	OA-1 - 8021B
Ethylbenzene	2310		ug/L	20.0	10	07/29/08 22:36	fmk	8071116	OA-1 - 8021B
Xylenes, total	10700		ug/L	30.0	10	07/29/08 22:36	fmk	8071116	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)		120 %							
VOC Preservation Check									
pH	<2.00		units	2.00	1	07/25/08 16:30	mmk	8071023	SW

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRG1178
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/08
Reported: 08/04/08 11:23

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	8071116			ug/L	N/A	2.00	<2.00							
Toluene	8071116			ug/L	N/A	2.00	<2.00							
Ethylbenzene	8071116			ug/L	N/A	2.00	<2.00							
Xylenes, total	8071116			ug/L	N/A	3.00	<3.00							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>8071116</i>			ug/L					114		75-135			
Benzene	8080012			ug/L	N/A	2.00	<2.00							
Toluene	8080012			ug/L	N/A	2.00	<2.00							
Ethylbenzene	8080012			ug/L	N/A	2.00	<2.00							
Xylenes, total	8080012			ug/L	N/A	3.00	<3.00							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>8080012</i>			ug/L					112		75-135			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRG1178
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/08
Reported: 08/04/08 11:23

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	8071116		48.0	ug/L	N/A	N/A	33.8		70		50-115			
Toluene	8071116		48.0	ug/L	N/A	N/A	38.0		79		65-110			
Ethylbenzene	8071116		48.0	ug/L	N/A	N/A	39.1		81		70-110			
Xylenes, total	8071116		144	ug/L	N/A	N/A	121		84		70-110			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>8071116</i>			ug/L					<i>118</i>		<i>80-130</i>			
Benzene	8080012		48.0	ug/L	N/A	N/A	33.1		69		50-115			
Toluene	8080012		48.0	ug/L	N/A	N/A	37.7		79		65-110			
Ethylbenzene	8080012		48.0	ug/L	N/A	N/A	39.2		82		70-110			
Xylenes, total	8080012		144	ug/L	N/A	N/A	122		85		70-110			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>8080012</i>			ug/L					<i>116</i>		<i>80-130</i>			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRG1178
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/08
Reported: 08/04/08 11:23

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
QC Source Sample: CRG1110-01														
Benzene	8071116	6.51	48.0	ug/L	N/A	N/A	40.3	40.2	70	70	50-115	0	10	
Toluene	8071116	35.5	48.0	ug/L	N/A	N/A	74.4	74.1	81	80	65-110	1	10	
Ethylbenzene	8071116	21.4	48.0	ug/L	N/A	N/A	61.1	60.6	83	82	65-115	1	10	
Xylenes, total	8071116	99.8	144	ug/L	N/A	N/A	222	220	85	83	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	8071116			ug/L					111	111	80-135			
QC Source Sample: CRG1308-01														
Benzene	8080012	0.345	48.0	ug/L	N/A	N/A	33.2	33.3	69	69	50-115	0	10	
Toluene	8080012	0.321	48.0	ug/L	N/A	N/A	37.7	37.6	78	78	65-110	0	10	
Ethylbenzene	8080012	0.280	48.0	ug/L	N/A	N/A	38.9	38.9	80	80	65-115	0	10	
Xylenes, total	8080012	1.87	144	ug/L	N/A	N/A	120	121	82	83	65-115	0	10	
Surrogate: 4-Bromofluorobenzene	8080012			ug/L					113	113	80-135			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRG1178
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/08
Reported: 08/04/08 11:23

CERTIFICATION SUMMARY

TestAmerica Cedar Falls

Method	Matrix	Nelac	Iowa
OA-1 - 8021B	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF-FSS-01.

DATA QUALIFIERS AND DEFINITIONS

Z6 Surrogate recovery was outside control limits.

ADDITIONAL COMMENTS

Company:

TERRACON

Send Report To:

John Brimeyer

Address:

870 40th Ave

City/State/Zip Code:

Bettendorf, IA

Telephone Number:

563-355-0702

Fax: 563-355-4789

Sampled by: (Print Name)

Jay Freley

(Signature)

Jay Freley

Project Name:

Dubugue Brownfields

Project Number:

07047024

Project Manager:

John Brimeyer

Proj. Mgr. Telephone:

563-355-0702

Sample ID	Date Sampled	Time Sampled	# of containers shipped	Grab	Composite	Field Filtered	Ice	HNO ₃ (Red & White Label)	HCl (Blue & White Label)	NaOH (Orange & White Label)	H ₂ SO ₄ Plastic (Yellow & White Label)	H ₂ SO ₄ Glass (Yellow & White Label)	None (Black & White Label)	Other (Specify)	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other Specify:	X	RUSH TAT (Must call ahead!)	Standard TAT	Fax Results	Send QC with report
MW-2	7/21/08	9:55	3	X			X	X	X						X	X	X	X	X			X			
MW-6		11:10	3	X			X	X	X						X	X	X	X	X						
MW-5		12:05	3	X			X	X	X						X	X	X	X	X						
MW-SB-23		13:45	3	X			X	X	X						X	X	X	X	X						
MW-7		14:45	3	X			X	X	X						X	X	X	X	X						
MW-SB-10		15:35	3	X			X	X	X						X	X	X	X	X						
MW-SB-11		16:20	3	X			X	X	X						X	X	X	X	X						
MW-SB-7		16:50	3	X			X	X	X						X	X	X	X	X						
MW-SB-14		17:35	3	X			X	X	X						X	X	X	X	X						
MW-SB-26		18:35	3	X			X	X	X						X	X	X	X	X						

NOTE: All turn around times are calculated from the time of receipt at TestAmerica.
 NOTICE: Pre-Arrangements must be made AT LEAST 48 Hours in ADVANCE to receive results with RUSH turn around time commitments; additional charges may be assessed.
 NOTE: There may be a charge assessed for TestAmerica disposing of sample remainders.

Relinquished by: *Jay Freley* Date: 7/22/08 Time: 4:00 PM
 Received by: *John Brimeyer* Date: 7/23/08 Time: 1:05 PM
 Shipped Via: *Express*
 Received for TestAmerica by: *Edna Muehlberg* Date: 7/24/08 Time: 8:50
 Laboratory Comments: No MTBE, one vial on SB-14 Broken

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Company:

10-10-68

John Brimley

Tetracox

830 40th Ave

Beitrag Nr. 52722

Fax: 563-355-0702

Jay Pegler

22

[illegible]

Sample Receipt and Temperature Log Form

Client: Terracore Project: DBQ

City: Brownfields

Date: 7-24-08 Receiver's Initials: CH Time (Delivered): 8:50

Temperature Record:

Cooler ID# (If Applicable)
QCCSC
0.6 °C **On Ice**

Thermometer:

- ☒ IR - 61997670 'A'
☐ IR - 61997671 'B'
☐ IR - 61854108
☐ 22126775

Courier:

- ☒ UPS ☐ TA Courier
☐ FedEx ☐ TA Field Services
☐ DHL ☐ Client
☐ US Postal Service ☐ Other
☐ Spee-Dee

☒ Temp Blank

☐ Temperature out of compliance

Custody seals present?

☒ Yes

Custody seals intact?

☒ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

- ☐ Sample(s) not received in a cooler.
☐ Samples(s) received same day of sampling.
☐ Evidence of a chilling process
☐ Temperature not taken:

November 26, 2008

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CRK1089
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 11/21/08

The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
MW-4	CRK1089-01	11/19/08 11:30
SB-12	CRK1089-02	11/19/08 12:25
SB-24	CRK1089-03	11/19/08 13:30
MW-2	CRK1089-04	11/19/08 14:10
MW-5	CRK1089-05	11/19/08 15:00
SB-23	CRK1089-06	11/19/08 15:40
MW-7	CRK1089-07	11/19/08 16:30
SB-3	CRK1089-08	11/19/08 17:15

Samples were received into laboratory at a temperature of 0 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls

Angela Muehling
Project Coordinator

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRK1089
Project: Dubuque Brownfields
Project Number: 07047024

Received: 11/21/08
Reported: 11/26/08 12:55

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CRK1089-01 (MW-4 - Ground Water)				Sampled: 11/19/08 11:30			Recvd: 11/21/08 08:45		
UST Volatile Compounds by GC									
Benzene	8580		ug/L	50.0	25	11/24/08 17:53	mmk	8111071	OA-1 - 8021B
Toluene	60.6		ug/L	2.00	1	11/21/08 23:40	mmk	8111011	OA-1 - 8021B
Ethylbenzene	34.0		ug/L	2.00	1	11/21/08 23:40	mmk	8111011	OA-1 - 8021B
Xylenes, total	82.6		ug/L	3.00	1	11/21/08 23:40	mmk	8111011	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	118 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	11/24/08 14:41	fmk	8111015	SW
Sample ID: CRK1089-02 (SB-12 - Ground Water)				Sampled: 11/19/08 12:25			Recvd: 11/21/08 08:45		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	11/21/08 18:55	mmk	8111011	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	11/21/08 18:55	mmk	8111011	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	11/21/08 18:55	mmk	8111011	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	11/21/08 18:55	mmk	8111011	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	114 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	11/24/08 14:41	fmk	8111015	SW
Sample ID: CRK1089-03 (SB-24 - Ground Water)				Sampled: 11/19/08 13:30			Recvd: 11/21/08 08:45		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	11/21/08 19:31	mmk	8111011	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	11/21/08 19:31	mmk	8111011	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	11/21/08 19:31	mmk	8111011	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	11/21/08 19:31	mmk	8111011	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	114 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	11/24/08 14:41	fmk	8111015	SW
Sample ID: CRK1089-04 (MW-2 - Ground Water)				Sampled: 11/19/08 14:10			Recvd: 11/21/08 08:45		
UST Volatile Compounds by GC									
Benzene	4270		ug/L	20.0	10	11/24/08 17:17	mmk	8111071	OA-1 - 8021B
Toluene	76.7		ug/L	2.00	1	11/21/08 20:07	mmk	8111011	OA-1 - 8021B
Ethylbenzene	365		ug/L	2.00	1	11/21/08 20:07	mmk	8111011	OA-1 - 8021B
Xylenes, total	285		ug/L	3.00	1	11/21/08 20:07	mmk	8111011	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	120 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	11/24/08 14:41	fmk	8111015	SW
Sample ID: CRK1089-05 (MW-5 - Ground Water)				Sampled: 11/19/08 15:00			Recvd: 11/21/08 08:45		
UST Volatile Compounds by GC									
Benzene	21600		ug/L	200	100	11/26/08 12:02	mmk	8111112	OA-1 - 8021B
Toluene	5100		ug/L	20.0	10	11/25/08 15:31	mmk	8111107	OA-1 - 8021B
Ethylbenzene	2110		ug/L	20.0	10	11/25/08 15:31	mmk	8111107	OA-1 - 8021B
Xylenes, total	6780		ug/L	30.0	10	11/25/08 15:31	mmk	8111107	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	91 %								
VOC Preservation Check									

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRK1089
Project: Dubuque Brownfields
Project Number: 07047024

Received: 11/21/08
Reported: 11/26/08 12:55

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CRK1089-05 (MW-5 - Ground Water) - cont.				Sampled: 11/19/08 15:00			Recvd: 11/21/08 08:45		
VOC Preservation Check - cont.									
pH	<2.00		units	2.00	1	11/24/08 14:41	fmk	8111015	SW
Sample ID: CRK1089-06 (SB-23 - Ground Water)				Sampled: 11/19/08 15:40			Recvd: 11/21/08 08:45		
UST Volatile Compounds by GC									
Benzene	19000		ug/L	200	100	11/24/08 18:30	mmk	8111071	OA-1 - 8021B
Toluene	16500		ug/L	200	100	11/24/08 18:30	mmk	8111071	OA-1 - 8021B
Ethylbenzene	3160		ug/L	200	100	11/24/08 18:30	mmk	8111071	OA-1 - 8021B
Xylenes, total	13900		ug/L	300	100	11/24/08 18:30	mmk	8111071	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	88 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	11/21/08 15:27	fmk	8110951	SW
Sample ID: CRK1089-07 (MW-7 - Ground Water)				Sampled: 11/19/08 16:30			Recvd: 11/21/08 08:45		
UST Volatile Compounds by GC									
Benzene	14400		ug/L	200	100	11/24/08 19:06	mmk	8111071	OA-1 - 8021B
Toluene	3300		ug/L	20.0	10	11/22/08 00:50	mmk	8111011	OA-1 - 8021B
Ethylbenzene	2430		ug/L	20.0	10	11/22/08 00:50	mmk	8111011	OA-1 - 8021B
Xylenes, total	7260		ug/L	30.0	10	11/22/08 00:50	mmk	8111011	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	119 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	11/21/08 15:27	fmk	8110951	SW
Sample ID: CRK1089-08 (SB-3 - Ground Water)				Sampled: 11/19/08 17:15			Recvd: 11/21/08 08:45		
UST Volatile Compounds by GC									
Benzene	42.9		ug/L	2.00	1	11/21/08 20:43	mmk	8111011	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	11/21/08 20:43	mmk	8111011	OA-1 - 8021B
Ethylbenzene	12.8		ug/L	2.00	1	11/21/08 20:43	mmk	8111011	OA-1 - 8021B
Xylenes, total	30.9		ug/L	3.00	1	11/21/08 20:43	mmk	8111011	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	115 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	11/24/08 14:41	fmk	8111015	SW

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRK1089
Project: Dubuque Brownfields
Project Number: 07047024

Received: 11/21/08
Reported: 11/26/08 12:55

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	8111011			ug/L	N/A	2.00	<2.00							
Toluene	8111011			ug/L	N/A	2.00	<2.00							
Ethylbenzene	8111011			ug/L	N/A	2.00	<2.00							
Xylenes, total	8111011			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	8111011			ug/L					113		75-135			
Benzene	8111071			ug/L	N/A	2.00	<2.00							
Toluene	8111071			ug/L	N/A	2.00	<2.00							
Ethylbenzene	8111071			ug/L	N/A	2.00	<2.00							
Xylenes, total	8111071			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	8111071			ug/L					95		75-135			
Benzene	8111107			ug/L	N/A	2.00	<2.00							L1
Toluene	8111107			ug/L	N/A	2.00	<2.00							
Ethylbenzene	8111107			ug/L	N/A	2.00	<2.00							
Xylenes, total	8111107			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	8111107			ug/L					88		75-135			
Benzene	8111112			ug/L	N/A	2.00	<2.00							
Toluene	8111112			ug/L	N/A	2.00	<2.00							
Ethylbenzene	8111112			ug/L	N/A	2.00	<2.00							
Xylenes, total	8111112			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	8111112			ug/L					87		75-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRK1089
Project: Dubuque Brownfields
Project Number: 07047024

Received: 11/21/08
Reported: 11/26/08 12:55

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	8111011		48.0	ug/L	N/A	N/A	29.3		61		50-115			
Toluene	8111011		48.0	ug/L	N/A	N/A	37.7		78		65-110			
Ethylbenzene	8111011		48.0	ug/L	N/A	N/A	42.4		88		70-110			
Xylenes, total	8111011		144	ug/L	N/A	N/A	127		88		70-110			
Surrogate: 4-Bromofluorobenzene	8111011			ug/L					114		80-130			
Benzene	8111071		48.0	ug/L	N/A	N/A	24.9		52		50-115			
Toluene	8111071		48.0	ug/L	N/A	N/A	36.7		76		65-110			
Ethylbenzene	8111071		48.0	ug/L	N/A	N/A	43.4		90		70-110			
Xylenes, total	8111071		144	ug/L	N/A	N/A	132		91		70-110			
Surrogate: 4-Bromofluorobenzene	8111071			ug/L					90		80-130			
Benzene	8111107		48.0	ug/L	N/A	N/A	23.4		49		50-115			L1
Toluene	8111107		48.0	ug/L	N/A	N/A	36.0		75		65-110			
Ethylbenzene	8111107		48.0	ug/L	N/A	N/A	44.1		92		70-110			
Xylenes, total	8111107		144	ug/L	N/A	N/A	132		92		70-110			
Surrogate: 4-Bromofluorobenzene	8111107			ug/L					89		80-130			
Benzene	8111112		48.0	ug/L	N/A	N/A	37.3		78		50-115			
Toluene	8111112		48.0	ug/L	N/A	N/A	39.5		82		65-110			
Ethylbenzene	8111112		48.0	ug/L	N/A	N/A	41.0		85		70-110			
Xylenes, total	8111112		144	ug/L	N/A	N/A	121		84		70-110			
Surrogate: 4-Bromofluorobenzene	8111112			ug/L					88		80-130			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRK1089
Project: Dubuque Brownfields
Project Number: 07047024

Received: 11/21/08
Reported: 11/26/08 12:55

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
QC Source Sample: CRK0906-01														
Benzene	8111011	<2.00	48.0	ug/L	N/A	N/A	30.1	29.5	63	61	50-115	2	10	
Toluene	8111011	<2.00	48.0	ug/L	N/A	N/A	39.0	38.6	81	80	65-110	1	10	
Ethylbenzene	8111011	<2.00	48.0	ug/L	N/A	N/A	43.8	43.3	91	90	65-115	1	10	
Xylenes, total	8111011	32.8	144	ug/L	N/A	N/A	162	160	90	89	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	8111011			ug/L					116	113	80-135			
QC Source Sample: CRK1124-02														
Benzene	8111071	<2.00	48.0	ug/L	N/A	N/A	24.5	24.7	51	52	50-115	1	10	
Toluene	8111071	<2.00	48.0	ug/L	N/A	N/A	36.0	36.8	75	77	65-110	2	10	
Ethylbenzene	8111071	<2.00	48.0	ug/L	N/A	N/A	42.7	43.4	89	90	65-115	2	10	
Xylenes, total	8111071	<3.00	144	ug/L	N/A	N/A	129	131	89	91	65-115	2	10	
Surrogate: 4-Bromofluorobenzene	8111071			ug/L					88	89	80-135			
QC Source Sample: CRK1086-03														
Benzene	8111107	1.39	48.0	ug/L	N/A	N/A	24.3	24.2	48	48	50-115	0	10	L1,M1
Toluene	8111107	<2.00	48.0	ug/L	N/A	N/A	37.1	36.9	77	77	65-110	1	10	
Ethylbenzene	8111107	3.64	48.0	ug/L	N/A	N/A	48.8	47.8	94	92	65-115	2	10	
Xylenes, total	8111107	4.47	144	ug/L	N/A	N/A	136	134	92	90	65-115	2	10	
Surrogate: 4-Bromofluorobenzene	8111107			ug/L					91	89	80-135			
QC Source Sample: CRK1169-09														
Benzene	8111112	<2.00	48.0	ug/L	N/A	N/A	37.2	37.4	77	78	50-115	1	10	
Toluene	8111112	<2.00	48.0	ug/L	N/A	N/A	39.8	39.9	83	83	65-110	0	10	
Ethylbenzene	8111112	<2.00	48.0	ug/L	N/A	N/A	40.5	41.0	84	85	65-115	1	10	
Xylenes, total	8111112	<3.00	144	ug/L	N/A	N/A	120	121	83	84	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	8111112			ug/L					89	89	80-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CRK1089
Project: Dubuque Brownfields
Project Number: 07047024

Received: 11/21/08
Reported: 11/26/08 12:55

CERTIFICATION SUMMARY

TestAmerica Cedar Falls

Method	Matrix	Nelac	Iowa
OA-1 - 8021B	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF-FSS-01.

DATA QUALIFIERS AND DEFINITIONS

L1 Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was outside control limits.
M1 The MS and/or MSD were outside control limits.

ADDITIONAL COMMENTS

TestAmerica

ANALYTICAL TESTING CORPORATION

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone 319-277-2401 or 800-750-2401
Fax 319-277-2425

Client Name

Client #

Address:

City/State/Zip Code:

Project Manager:

Telephone Number:

Sampler Name: (Print Name)

Sampler Signature:

Email Address:

Project Name:

Project #:

Site/Location ID:

Report To:

Invoice To:

Quote #:

State:

PO#:

To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?
Compliance Monitoring

TAT Standard
☒ Rush (surcharges may apply)

Date Needed:

Fax Results: ☒ N

Email Results: ☒ N

SAMPLE ID

MW-14

SB-12

SB-24

MW-2

MW-5

SB-23

MW-7

SB-3

Date Sampled

Time Sampled

G = Grab, C = Composite

Field Filtered

Matrix Preservation & # of Containers

Other (Specify)

None

Methanol

H₂SO₄

NaOH

HNO₃

WW - Wastewater
S - Soil/Solid
GW - Groundwater
SL - Sludge
DW - Drinking Water
Specify Other

Analyze For:

QC Deliverables

None
Level 2
(Batch QC)
Level 3
Level 4
Other:

REMARKS

Special Instructions: NO INT B

LABORATORY COMMENTS:

Relinquished By:

Relinquished By:

Relinquished By:

Date:

Time:

Date:

Time:

Date:

Time:

Date:

Time:

Date:

Time:

Date:

Time:

Sample Receipt and Temperature Log Form

Client: Terracon

Project: DBQ Brownfields

City: _____

Date: 1-21-08 Receiver's Initials: CH Time (Delivered): 8:45

Temperature Record:

Cooler ID# (If Applicable)
CAT10
0.1 °C On Ice

Thermometer:

- ☒ IR - 61997670 'A'
☐ IR - 61997671 'B'
☐ IR - 61854108
☐ 22126775

Courier:

☒ UPS	☐ TA Courier
☐ FedEx	☐ TA Field Services
☐ DHL	☐ Client
☐ US Postal Service	☐ Other
☐ Spee-Dee	

☒ Temp Blank

☐ Temperature out of compliance

Custody seals present?

☒ Yes

Custody seals intact?

☒ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

☐ Sample(s) not received in a cooler.
☐ Samples(s) received same day of sampling.
☐ Evidence of a chilling process
☐ Temperature not taken:

*Refer to SOP CF01-01 for Temperature Criteria

February 27, 2009

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CSB0878
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 02/19/09

The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
MW-2	CSB0878-01	02/16/09 14:05
SB-24	CSB0878-02	02/16/09 14:45
SB-12	CSB0878-03	02/16/09 15:40
MW-4	CSB0878-04	02/16/09 16:40
MW-5	CSB0878-05	02/17/09 09:45
SB-23	CSB0878-06	02/17/09 10:30
MW-7	CSB0878-07	02/17/09 11:10
SB-3	CSB0878-08	02/17/09 11:50

Samples were received into laboratory at a temperature of 0 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls
Angela Muehling
Project Coordinator

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSB0878
Project: Dubuque Brownfields
Project Number: 07047024

Received: 02/19/09
Reported: 02/27/09 16:14

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CSB0878-01 (MW-2 - Ground Water)				Sampled: 02/16/09 14:05			Recvd: 02/19/09 08:50		
UST Volatile Compounds by GC									
Benzene	7530		ug/L	20.0	10	02/24/09 17:22	fmk	9020861	OA-1 - 8021B
Toluene	112		ug/L	2.00	1	02/23/09 22:25	fmk	9020808	OA-1 - 8021B
Ethylbenzene	305		ug/L	2.00	1	02/23/09 22:25	fmk	9020808	OA-1 - 8021B
Xylenes, total	346		ug/L	3.00	1	02/23/09 22:25	fmk	9020808	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	104 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	02/24/09 14:15	fmk	9020822	SW
Sample ID: CSB0878-02 (SB-24 - Ground Water)				Sampled: 02/16/09 14:45			Recvd: 02/19/09 08:50		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	02/24/09 16:45	fmk	9020861	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	02/24/09 16:45	fmk	9020861	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	02/24/09 16:45	fmk	9020861	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	02/24/09 16:45	fmk	9020861	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	109 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	02/24/09 14:15	fmk	9020822	SW
Sample ID: CSB0878-03 (SB-12 - Ground Water)				Sampled: 02/16/09 15:40			Recvd: 02/19/09 08:50		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	02/23/09 23:28	fmk	9020808	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	02/23/09 23:28	fmk	9020808	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	02/23/09 23:28	fmk	9020808	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	02/23/09 23:28	fmk	9020808	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	96 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	02/24/09 14:15	fmk	9020822	SW
Sample ID: CSB0878-04 (MW-4 - Ground Water)				Sampled: 02/16/09 16:40			Recvd: 02/19/09 08:50		
UST Volatile Compounds by GC									
Benzene	6760		ug/L	100	50	02/26/09 20:52	fmk	9020994	OA-1 - 8021B
Toluene	52.9		ug/L	2.00	1	02/23/09 23:59	fmk	9020808	OA-1 - 8021B
Ethylbenzene	29.1		ug/L	2.00	1	02/23/09 23:59	fmk	9020808	OA-1 - 8021B
Xylenes, total	141		ug/L	3.00	1	02/23/09 23:59	fmk	9020808	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	103 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	02/24/09 14:15	fmk	9020822	SW
Sample ID: CSB0878-05 (MW-5 - Ground Water)				Sampled: 02/17/09 09:45			Recvd: 02/19/09 08:50		
UST Volatile Compounds by GC									
Benzene	23600		ug/L	200	100	02/27/09 07:43	fmk	9020994	OA-1 - 8021B
Toluene	1270		ug/L	20.0	10	02/24/09 18:34	fmk	9020861	OA-1 - 8021B
Ethylbenzene	2410		ug/L	20.0	10	02/24/09 18:34	fmk	9020861	OA-1 - 8021B
Xylenes, total	7500		ug/L	30.0	10	02/24/09 18:34	fmk	9020861	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	109 %								
VOC Preservation Check									

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSB0878
Project: Dubuque Brownfields
Project Number: 07047024

Received: 02/19/09
Reported: 02/27/09 16:14

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CSB0878-05 (MW-5 - Ground Water) - cont.				Sampled: 02/17/09 09:45			Recvd: 02/19/09 08:50		
VOC Preservation Check - cont.									
pH	<2.00		units	2.00	1	02/24/09 14:15	fmk	9020822	SW
Sample ID: CSB0878-06 (SB-23 - Ground Water)				Sampled: 02/17/09 10:30			Recvd: 02/19/09 08:50		
UST Volatile Compounds by GC									
Benzene	32300		ug/L	200	100	02/27/09 09:48	fmk	9020994	OA-1 - 8021B
Toluene	40200		ug/L	200	100	02/27/09 09:48	fmk	9020994	OA-1 - 8021B
Ethylbenzene	8400		ug/L	40.0	20	02/27/09 00:00	fmk	9020994	OA-1 - 8021B
Xylenes, total	28400		ug/L	60.0	20	02/27/09 00:00	fmk	9020994	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	104 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	02/25/09 15:17	fmk	9020881	SW
Sample ID: CSB0878-07 (MW-7 - Ground Water)				Sampled: 02/17/09 11:10			Recvd: 02/19/09 08:50		
UST Volatile Compounds by GC									
Benzene	14200		ug/L	40.0	20	02/26/09 19:18	fmk	9020994	OA-1 - 8021B
Toluene	700		ug/L	40.0	20	02/26/09 19:18	fmk	9020994	OA-1 - 8021B
Ethylbenzene	1330		ug/L	40.0	20	02/26/09 19:18	fmk	9020994	OA-1 - 8021B
Xylenes, total	3550		ug/L	60.0	20	02/26/09 19:18	fmk	9020994	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	99 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	02/25/09 15:17	fmk	9020881	SW
Sample ID: CSB0878-08 (SB-3 - Ground Water)				Sampled: 02/17/09 11:50			Recvd: 02/19/09 08:50		
UST Volatile Compounds by GC									
Benzene	191		ug/L	2.00	1	02/26/09 10:15	fmk	9020945	OA-1 - 8021B
Toluene	2.45		ug/L	2.00	1	02/26/09 10:15	fmk	9020945	OA-1 - 8021B
Ethylbenzene	2.58		ug/L	2.00	1	02/26/09 10:15	fmk	9020945	OA-1 - 8021B
Xylenes, total	30.0		ug/L	3.00	1	02/26/09 10:15	fmk	9020945	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	94 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	02/25/09 15:17	fmk	9020881	SW

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSB0878
Project: Dubuque Brownfields
Project Number: 07047024

Received: 02/19/09
Reported: 02/27/09 16:14

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	9020808			ug/L	N/A	2.00	<2.00							
Toluene	9020808			ug/L	N/A	2.00	<2.00							
Ethylbenzene	9020808			ug/L	N/A	2.00	<2.00							
Xylenes, total	9020808			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	9020808			ug/L					100		75-135			
Benzene	9020861			ug/L	N/A	2.00	<2.00							
Toluene	9020861			ug/L	N/A	2.00	<2.00							
Ethylbenzene	9020861			ug/L	N/A	2.00	<2.00							
Xylenes, total	9020861			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	9020861			ug/L					111		75-135			
Benzene	9020945			ug/L	N/A	2.00	<2.00							
Toluene	9020945			ug/L	N/A	2.00	<2.00							
Ethylbenzene	9020945			ug/L	N/A	2.00	<2.00							
Xylenes, total	9020945			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	9020945			ug/L					92		75-135			
Benzene	9020994			ug/L	N/A	2.00	<2.00							
Toluene	9020994			ug/L	N/A	2.00	<2.00							
Ethylbenzene	9020994			ug/L	N/A	2.00	<2.00							
Xylenes, total	9020994			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	9020994			ug/L					93		75-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSB0878
Project: Dubuque Brownfields
Project Number: 07047024

Received: 02/19/09
Reported: 02/27/09 16:14

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	9020808		48.0	ug/L	N/A	N/A	46.1		96		50-115			
Toluene	9020808		48.0	ug/L	N/A	N/A	47.7		99		65-110			
Ethylbenzene	9020808		48.0	ug/L	N/A	N/A	49.1		102		70-110			
Xylenes, total	9020808		144	ug/L	N/A	N/A	143		99		70-110			
Surrogate: 4-Bromofluorobenzene	9020808			ug/L					104		80-130			
Benzene	9020861		48.0	ug/L	N/A	N/A	38.2		80		50-115			
Toluene	9020861		48.0	ug/L	N/A	N/A	39.7		83		65-110			
Ethylbenzene	9020861		48.0	ug/L	N/A	N/A	40.2		84		70-110			
Xylenes, total	9020861		144	ug/L	N/A	N/A	120		83		70-110			
Surrogate: 4-Bromofluorobenzene	9020861			ug/L					112		80-130			
Surrogate: 4-Bromofluorobenzene	9020861			ug/L					111		80-130			
Benzene	9020945		48.0	ug/L	N/A	N/A	40.7		85		50-115			
Toluene	9020945		48.0	ug/L	N/A	N/A	42.1		88		65-110			
Ethylbenzene	9020945		48.0	ug/L	N/A	N/A	44.6		93		70-110			
Xylenes, total	9020945		144	ug/L	N/A	N/A	129		90		70-110			
Surrogate: 4-Bromofluorobenzene	9020945			ug/L					101		80-130			
Benzene	9020994		48.0	ug/L	N/A	N/A	36.9		77		50-115			
Toluene	9020994		48.0	ug/L	N/A	N/A	38.4		80		65-110			
Ethylbenzene	9020994		48.0	ug/L	N/A	N/A	40.0		83		70-110			
Xylenes, total	9020994		144	ug/L	N/A	N/A	116		81		70-110			
Surrogate: 4-Bromofluorobenzene	9020994			ug/L					98		80-130			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSB0878
Project: Dubuque Brownfields
Project Number: 07047024

Received: 02/19/09
Reported: 02/27/09 16:14

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
QC Source Sample: CSB0872-01														
Benzene	9020808	11.3	48.0	ug/L	N/A	N/A	55.6	54.6	92	90	50-115	2	10	
Toluene	9020808	27.3	48.0	ug/L	N/A	N/A	74.8	73.8	99	97	65-110	1	10	
Ethylbenzene	9020808	5.25	48.0	ug/L	N/A	N/A	52.5	51.7	98	97	65-115	1	10	
Xylenes, total	9020808	47.7	144	ug/L	N/A	N/A	185	183	96	94	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	9020808			ug/L					99	96	80-135			
QC Source Sample: CSB0987-01														
Benzene	9020861	0.156	48.0	ug/L	N/A	N/A	39.2	38.2	81	79	50-115	3	10	
Toluene	9020861	<2.00	48.0	ug/L	N/A	N/A	39.5	38.7	82	81	65-110	2	10	
Ethylbenzene	9020861	<2.00	48.0	ug/L	N/A	N/A	40.6	40.0	85	83	65-115	1	10	
Xylenes, total	9020861	1.05	144	ug/L	N/A	N/A	120	119	83	82	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	9020861			ug/L					113	111	80-135			
QC Source Sample: CSB0848-04														
Benzene	9020945	0.246	48.0	ug/L	N/A	N/A	27.0	26.9	56	56	50-115	0	10	
Toluene	9020945	0.691	48.0	ug/L	N/A	N/A	36.3	36.4	74	74	65-110	0	10	
Ethylbenzene	9020945	1.36	48.0	ug/L	N/A	N/A	42.4	42.6	85	86	65-115	1	10	
Xylenes, total	9020945	3.95	144	ug/L	N/A	N/A	122	123	82	83	65-115	1	10	
Surrogate: 4-Bromofluorobenzene	9020945			ug/L					91	91	80-135			
QC Source Sample: CSB1119-01														
Benzene	9020994	0.148	48.0	ug/L	N/A	N/A	37.1	37.0	77	77	50-115	0	10	
Toluene	9020994	0.242	48.0	ug/L	N/A	N/A	38.8	38.8	80	80	65-110	0	10	
Ethylbenzene	9020994	3.96	48.0	ug/L	N/A	N/A	44.4	44.4	84	84	65-115	0	10	
Xylenes, total	9020994	2.34	144	ug/L	N/A	N/A	118	118	80	81	65-115	0	10	
Surrogate: 4-Bromofluorobenzene	9020994			ug/L					95	95	80-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSB0878
Project: Dubuque Brownfields
Project Number: 07047024

Received: 02/19/09
Reported: 02/27/09 16:14

CERTIFICATION SUMMARY

TestAmerica Cedar Falls

Method	Matrix	Nelac	Iowa
OA-1 - 8021B	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF-FSS-01.

DRAFT

TestAmerica

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone: 319 - 277 - 2401 or 1 - 800 - 750 - 2401
Fax: 319 - 277 - 2425

Company:

TERACON

Send Report To:

JOHN BRININGER

Address:

870 40TH AVE

City/State/Zip Code:

BETTERDORF, IA 52701

Telephone Number:

563-355-0702

Fax:

563-355-1749

Sampled by: (Print Name)

Jay Pegley

(Signature)

Jay Pegley

Your PO #:

TERACON

Invoice To:

TERACON

TA Quote #:

TERACON

Project Name:

Dubay vs Brownfield

Project Number:

07047024

Project Manager:

John Brininger

Proj. Mgr. Telephone:

563-355-0702

Sample ID	Date Sampled	Time Sampled	# of containers shipped	Grab	Composite	Field Filtered	Preservative								Matrix							Analyze For:	RUSH TAT (Must call ahead!)	Standard TAT	Fax Results	Send QC with report																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
							Ice	HNO ₃ (Red & White Label)	HCl (Blue & White Label)	NaOH (Orange & White Label)	H ₂ SO ₄ Plastic (Yellow & White Label)	H ₂ SO ₄ Glass (Yellow & White Label)	None (Black & White Label)	Other (Specify)	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other Specify:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
MW-2	2-16-09	14:05	3	X			X							X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		</

NOTE: All turn around times are calculated from the time of receipt at TestAmerica.

NOTICE: Pre-Arrangements must be made AT LEAST 48 Hours in ADVANCE to receive results with RUSH turn around time commitments; additional charges may be assessed.

NOTE: There may be a charge assessed for TestAmerica disposing of sample remainders.

NOTES:

NO MT BE

Relinquished by:	Date	Time	Received by:	Date	Time	Relinquished by:	Date	Time
Jay Pegley	2-17-09	10:45 PM	John Brininger	2-18-09	9:25	John Brininger	2-18-09	3:30
Shipped Via:	Shipped Via:							
Received for TestAmerica by:	Date	Time	Comments:	Laboratory Comments:				
Carina Muehlberg	2-19-09	9:50	Temperature Upon Receipt:					

THE LEADER IN ENVIRONMENTAL TESTING

Sample Receipt and Temperature Log Form

Client: Terracon

Project: DBQ Brownfield

City: _____

Date: 2-19-09 Receiver's Initials: CH Time (Delivered): 8:50

Temperature Record:

Cooler ID# (If Applicable) <u>QXSC</u>
<u>0.9</u> °C / <u>On Ice</u>

Thermometer:

- ☒ IR - 61997670 'A'
☐ IR - 61997671 'B'
☐ IR - 61854108
☐ 22126775

Courier:

☒ UPS	☐ TA Courier
☐ FedEx	☐ TA Field Services
☐ FedEx Ground	☐ Client
☐ US Postal Service	☐ Other
☐ Spee-Dee	

☒ Temp Blank

☐ Temperature out of compliance

Custody seals present?

☒ Yes

Custody seals intact?

☒ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

- ☐ Sample(s) not received in a cooler.
- ☐ Sample(s) received same day of sampling.
- ☐ Evidence of a chilling process
- ☐ Temperature not taken:

*Refer to SOP CF-SS-01 for Temperature Criteria

P:\QA Forms & Log Book pgs\Cooler Receipt rev14.doc

May 12, 2009

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CSE0355
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 05/07/09

The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
MW-2	CSE0355-01	05/04/09 16:50
SB-24	CSE0355-02	05/04/09 12:30
SB-12	CSE0355-03	05/04/09 18:15
MW-4	CSE0355-04	05/04/09 19:10
MW-7	CSE0355-05	05/05/09 08:12
MW-5	CSE0355-06	05/05/09 09:35
SB-23	CSE0355-07	05/05/09 10:12
SB-3	CSE0355-08	05/05/09 11:05

Samples were received into laboratory at a temperature of 2 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls
Angela Muehling
Project Coordinator

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSE0355
Project: Dubuque Brownfields
Project Number: 07047024

Received: 05/07/09
Reported: 05/12/09 11:11

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CSE0355-01 (MW-2 - Ground Water)				Sampled: 05/04/09 16:50			Recvd: 05/07/09 08:50		
UST Volatile Compounds by GC									
Benzene	1130	MHA	ug/L	20.0	10	05/12/09 00:29	fmk	9050445	OA-1 - 8021B
Toluene	32.1		ug/L	2.00	1	05/08/09 11:29	fmk	9050395	OA-1 - 8021B
Ethylbenzene	227		ug/L	2.00	1	05/08/09 11:29	fmk	9050395	OA-1 - 8021B
Xylenes, total	331		ug/L	3.00	1	05/08/09 11:29	fmk	9050395	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	88 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	05/11/09 13:05	eee	9050409	SW
Sample ID: CSE0355-02 (SB-24 - Ground Water)				Sampled: 05/04/09 12:30			Recvd: 05/07/09 08:50		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	05/08/09 12:06	fmk	9050395	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	05/08/09 12:06	fmk	9050395	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	05/08/09 12:06	fmk	9050395	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	05/08/09 12:06	fmk	9050395	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	82 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	05/11/09 13:05	eee	9050409	SW
Sample ID: CSE0355-03 (SB-12 - Ground Water)				Sampled: 05/04/09 18:15			Recvd: 05/07/09 08:50		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	05/08/09 12:43	fmk	9050395	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	05/08/09 12:43	fmk	9050395	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	05/08/09 12:43	fmk	9050395	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	05/08/09 12:43	fmk	9050395	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	86 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	05/11/09 13:05	eee	9050409	SW
Sample ID: CSE0355-04 (MW-4 - Ground Water)				Sampled: 05/04/09 19:10			Recvd: 05/07/09 08:50		
UST Volatile Compounds by GC									
Benzene	9810		ug/L	200	100	05/12/09 01:06	fmk	9050445	OA-1 - 8021B
Toluene	95.2		ug/L	20.0	10	05/08/09 16:25	fmk	9050395	OA-1 - 8021B
Ethylbenzene	104		ug/L	20.0	10	05/08/09 16:25	fmk	9050395	OA-1 - 8021B
Xylenes, total	718		ug/L	30.0	10	05/08/09 16:25	fmk	9050395	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	88 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	05/08/09 15:44	fmk	9050365	SW
Sample ID: CSE0355-05 (MW-7 - Ground Water)				Sampled: 05/05/09 08:12			Recvd: 05/07/09 08:50		
UST Volatile Compounds by GC									
Benzene	20200		ug/L	200	100	05/12/09 01:43	fmk	9050445	OA-1 - 8021B
Toluene	1880		ug/L	20.0	10	05/08/09 17:01	fmk	9050395	OA-1 - 8021B
Ethylbenzene	1350		ug/L	20.0	10	05/08/09 17:01	fmk	9050395	OA-1 - 8021B
Xylenes, total	3780		ug/L	30.0	10	05/08/09 17:01	fmk	9050395	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	88 %								
VOC Preservation Check									

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSE0355
Project: Dubuque Brownfields
Project Number: 07047024

Received: 05/07/09
Reported: 05/12/09 11:11

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CSE0355-05 (MW-7 - Ground Water) - cont.				Sampled: 05/05/09 08:12			Recvd: 05/07/09 08:50		
VOC Preservation Check - cont.									
pH	<2.00		units	2.00	1	05/08/09 15:44	fmk	9050365	SW
Sample ID: CSE0355-06 (MW-5 - Ground Water)				Sampled: 05/05/09 09:35			Recvd: 05/07/09 08:50		
UST Volatile Compounds by GC									
Benzene	22300		ug/L	200	100	05/12/09 02:19	fmk	9050445	OA-1 - 8021B
Toluene	365		ug/L	20.0	10	05/08/09 17:38	fmk	9050395	OA-1 - 8021B
Ethylbenzene	2190		ug/L	20.0	10	05/08/09 17:38	fmk	9050395	OA-1 - 8021B
Xylenes, total	6560		ug/L	30.0	10	05/08/09 17:38	fmk	9050395	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	89 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	05/08/09 15:44	fmk	9050365	SW
Sample ID: CSE0355-07 (SB-23 - Ground Water)				Sampled: 05/05/09 10:12			Recvd: 05/07/09 08:50		
UST Volatile Compounds by GC									
Benzene	27300		ug/L	200	100	05/12/09 02:56	fmk	9050445	OA-1 - 8021B
Toluene	30500		ug/L	200	100	05/12/09 02:56	fmk	9050445	OA-1 - 8021B
Ethylbenzene	3570		ug/L	20.0	10	05/08/09 18:15	fmk	9050395	OA-1 - 8021B
Xylenes, total	26600		ug/L	300	100	05/12/09 02:56	fmk	9050445	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	101 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	05/08/09 15:44	fmk	9050365	SW
Sample ID: CSE0355-08 (SB-3 - Ground Water)				Sampled: 05/05/09 11:05			Recvd: 05/07/09 08:50		
UST Volatile Compounds by GC									
Benzene	33.0		ug/L	2.00	1	05/08/09 13:20	fmk	9050395	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	05/08/09 13:20	fmk	9050395	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	05/08/09 13:20	fmk	9050395	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	05/08/09 13:20	fmk	9050395	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	85 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	05/11/09 13:05	eee	9050409	SW

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSE0355
Project: Dubuque Brownfields
Project Number: 07047024

Received: 05/07/09
Reported: 05/12/09 11:11

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	9050395			ug/L	N/A	2.00	<2.00							
Toluene	9050395			ug/L	N/A	2.00	<2.00							
Ethylbenzene	9050395			ug/L	N/A	2.00	<2.00							
Xylenes, total	9050395			ug/L	N/A	3.00	<3.00							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>9050395</i>			ug/L					88		75-135			
Benzene	9050445			ug/L	N/A	2.00	<2.00							
Toluene	9050445			ug/L	N/A	2.00	<2.00							
Ethylbenzene	9050445			ug/L	N/A	2.00	<2.00							
Xylenes, total	9050445			ug/L	N/A	3.00	<3.00							
Methyl tert-Butyl Ether	9050445			ug/L	N/A	5.00	<5.00							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>9050445</i>			ug/L					93		75-135			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSE0355
Project: Dubuque Brownfields
Project Number: 07047024

Received: 05/07/09
Reported: 05/12/09 11:11

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	9050395		48.0	ug/L	N/A	N/A	39.7		83		50-115			
Toluene	9050395		48.0	ug/L	N/A	N/A	39.0		81		65-110			
Ethylbenzene	9050395		48.0	ug/L	N/A	N/A	39.3		82		70-110			
Xylenes, total	9050395		144	ug/L	N/A	N/A	117		81		70-110			
Surrogate: 4-Bromofluorobenzene	9050395			ug/L					88		80-130			
Surrogate: 4-Bromofluorobenzene	9050445			ug/L					92		80-130			
Benzene	9050445		48.0	ug/L	N/A	N/A	39.6		82		50-115			
Toluene	9050445		48.0	ug/L	N/A	N/A	39.9		83		65-110			
Ethylbenzene	9050445		48.0	ug/L	N/A	N/A	40.5		84		70-110			
Xylenes, total	9050445		144	ug/L	N/A	N/A	121		84		70-110			
Methyl tert-Butyl Ether	9050445		48.0	ug/L	N/A	N/A	38.5		80		25-120			
Surrogate: 4-Bromofluorobenzene	9050445			ug/L					91		80-130			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSE0355
Project: Dubuque Brownfields
Project Number: 07047024

Received: 05/07/09
Reported: 05/12/09 11:11

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
QC Source Sample: CSE0355-01														
Benzene	9050395	1.00E9	48.0	ug/L	N/A	N/A	1.00E9	1.00E9	0	0	50-115	0	10	MHA
Toluene	9050395	32.1	48.0	ug/L	N/A	N/A	73.7	73.6	87	87	65-110	0	10	
Ethylbenzene	9050395	227	48.0	ug/L	N/A	N/A	283	283	117	116	65-115	0	10	MHA
Xylenes, total	9050395	331	144	ug/L	N/A	N/A	464	463	92	91	65-115	0	10	
Surrogate: 4-Bromofluorobenzene	9050395			ug/L					87	88	80-135			
QC Source Sample: CSE0465-01														
Benzene	9050445	0.670	48.0	ug/L	N/A	N/A	40.7	39.9	83	82	50-115	2	10	
Toluene	9050445	0.145	48.0	ug/L	N/A	N/A	40.4	39.4	84	82	65-110	3	10	
Ethylbenzene	9050445	0.0950	48.0	ug/L	N/A	N/A	41.2	40.1	86	83	65-115	3	10	
Xylenes, total	9050445	0.378	144	ug/L	N/A	N/A	123	120	85	83	65-115	3	10	
Methyl tert-Butyl Ether	9050445	0.337	48.0	ug/L	N/A	N/A	40.0	36.6	83	76	25-115	9	35	
Surrogate: 4-Bromofluorobenzene	9050445			ug/L					90	89	80-135			

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSE0355
Project: Dubuque Brownfields
Project Number: 07047024

Received: 05/07/09
Reported: 05/12/09 11:11

CERTIFICATION SUMMARY

TestAmerica Cedar Falls

Method	Matrix	Nelac	Iowa
OA-1 - 8021B	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF-FSS-01.

DATA QUALIFIERS AND DEFINITIONS

MHA Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information.

ADDITIONAL COMMENTS

TestAmerica

INCORPORATED

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone: 319-277-2401
Fax: 319-277-2425

Client Name

TERRACON

Client #:

Address:

870 40th Ave

City/State/Zip Code:

Bettendorf, IA 52722

Project Manager:

John Brimeyer

Telephone Number:

563-355-0702 Fax: 563-355-0789

Sampler Name: (Print Name)

Jay Fegley

Sampler Signature:

[Signature]

Project Name:

Dubugue Broken fields

Project #:

07047024

Site/Location ID:

Dubugue State: IA

Report To:

John Brimeyer

Invoice To:

TERRACON John Brimeyer

Quote #:

PO#:

To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?
Compliance Monitoring

TAT Standard
Rush (surcharges may apply)

Date Needed:

Fax Results: ☒ Y ☐ N

SAMPLE ID

MW-2

SB-2A

SB-12

MW-4

MW-7

MW-5

SB-23

SB-3

Date Sampled

5-4-09 16:50

5-4-09 17:30

5-4-09 18:15

5-4-09 19:10

5-5-09 8:12

5-5-09 9:35

5-5-09 10:12

5-5-09 11:09

Time Sampled

Field Filtered

G = Grab, C = Composite

Matrix

SL - Sludge DW - Drinking Water

GW - Groundwater S - Soil/Solid

MW - Wastewater Specify Other

Preservation & # of Containers

HNO₃

HCl

NaOH

H₂SO₄

Methanol

Other (Specify)

None

Analyze For:

QC Deliverables

None

Level 2

(Batch QC)

Level 3

Level 4

Other:

REMARKS

Special Instructions:

NO MTRF

LABORATORY COMMENTS:

Init Lab Temp:

Rec Lab Temp:

Custody Seal:

Bottles Supplied by TestAmerica:

Method of Shipment:

Date: 5/6/09

Time: 10:45

Date: 5/6/09

Time: 8:30

Date:

Time:

Received By:

Received By:

Received By:

Time:

Date:

Time:

Date: 5-3-09

Time: 14:30

Date: 5/6/09

Time: 3:30

Date:

Time:

Relinquished By:

Relinquished By:

Relinquished By:

Time:

Date:

Time:

Sample Receipt and Temperature Log Form

Client: Environmental Management LLC Project: Theisen's Farm AutoCTR

City: Davenport

Date: 5/7/09 Receiver's Initials: JL Time (Delivered): 8:50

Temperature Record:

Cooler ID# (If Applicable)

TA-Davenport

23 °C / On Ice

Thermometer:

☐ IR - 61997670 'A'

☒ IR - 61997671 'B'

☐ IR - 61854108

☐ 22126775

Courier:

☒ UPS

☐ FedEx

☐ FedEx Ground

☐ US Postal Service

☐ Spee-Dee

☐ TA Courier

☐ TA Field Services

☐ Client

☐ Other

☐ Temp Blank None

☐ Temperature out of compliance

Custody seals present?

☒ Yes

Custody seals intact?

☐ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

☐ Sample(s) not received in a cooler.

☐ Samples(s) received same day of sampling.

☐ Evidence of a chilling process

☐ Temperature not taken:

August 06, 2009

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CSG1203
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 07/24/09

The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
MW-2	CSG1203-01	07/22/09 10:57
MW-4	CSG1203-02	07/22/09 11:56
MW-24	CSG1203-03	07/22/09 12:50
SB-12	CSG1203-04	07/22/09 13:30
SB-3	CSG1203-05	07/22/09 14:20
MW-7	CSG1203-06	07/22/09 15:15
SB-23	CSG1203-07	07/22/09 14:05
MW-5	CSG1203-08	07/22/09 17:00

Samples were received into laboratory at a temperature of 0.10 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls

Angela Muehling
Project Coordinator

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSG1203
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/09
Reported: 08/06/09 11:47

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CSG1203-01 (MW-2 - Ground Water)				Sampled: 07/22/09 10:57			Recvd: 07/24/09 08:50		
UST Volatile Compounds by GC									
Benzene	1310		ug/L	20.0	10	08/05/09 16:15	fmk	9080175	OA-1 - 8021B
Toluene	78.5		ug/L	20.0	10	08/05/09 16:15	fmk	9080175	OA-1 - 8021B
Ethylbenzene	1150		ug/L	20.0	10	08/05/09 16:15	fmk	9080175	OA-1 - 8021B
Xylenes, total	1250		ug/L	30.0	10	08/05/09 16:15	fmk	9080175	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	112 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	08/03/09 13:44	eee	9080044	SW
Sample ID: CSG1203-02 (MW-4 - Ground Water)				Sampled: 07/22/09 11:56			Recvd: 07/24/09 08:50		
UST Volatile Compounds by GC									
Benzene	8780	E	ug/L	20.0	10	08/05/09 16:52	fmk	9080175	OA-1 - 8021B
Toluene	80.0		ug/L	20.0	10	08/05/09 16:52	fmk	9080175	OA-1 - 8021B
Ethylbenzene	203		ug/L	20.0	10	08/05/09 16:52	fmk	9080175	OA-1 - 8021B
Xylenes, total	518		ug/L	30.0	10	08/05/09 16:52	fmk	9080175	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	110 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	08/03/09 13:44	eee	9080044	SW
Sample ID: CSG1203-03 (MW-24 - Ground Water)				Sampled: 07/22/09 12:50			Recvd: 07/24/09 08:50		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	08/05/09 13:11	fmk	9080175	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	08/05/09 13:11	fmk	9080175	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	08/05/09 13:11	fmk	9080175	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	08/05/09 13:11	fmk	9080175	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	109 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	08/03/09 13:44	eee	9080044	SW
Sample ID: CSG1203-04 (SB-12 - Ground Water)				Sampled: 07/22/09 13:30			Recvd: 07/24/09 08:50		
UST Volatile Compounds by GC									
Benzene	<2.00		ug/L	2.00	1	08/05/09 13:48	fmk	9080175	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	08/05/09 13:48	fmk	9080175	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	08/05/09 13:48	fmk	9080175	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	08/05/09 13:48	fmk	9080175	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	111 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	08/03/09 13:44	eee	9080044	SW
Sample ID: CSG1203-05 (SB-3 - Ground Water)				Sampled: 07/22/09 14:20			Recvd: 07/24/09 08:50		
UST Volatile Compounds by GC									
Benzene	36.2		ug/L	2.00	1	08/05/09 14:24	fmk	9080175	OA-1 - 8021B
Toluene	<2.00		ug/L	2.00	1	08/05/09 14:24	fmk	9080175	OA-1 - 8021B
Ethylbenzene	<2.00		ug/L	2.00	1	08/05/09 14:24	fmk	9080175	OA-1 - 8021B
Xylenes, total	<3.00		ug/L	3.00	1	08/05/09 14:24	fmk	9080175	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	110 %								
VOC Preservation Check									

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSG1203
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/09
Reported: 08/06/09 11:47

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CSG1203-05 (SB-3 - Ground Water) - cont.					Sampled: 07/22/09 14:20		Recvd: 07/24/09 08:50		
VOC Preservation Check - cont.									
pH	<2.00		units	2.00	1	08/03/09 13:44	eee	9080044	SW
Sample ID: CSG1203-06 (MW-7 - Ground Water)					Sampled: 07/22/09 15:15		Recvd: 07/24/09 08:50		
UST Volatile Compounds by GC									
Benzene	18500	E	ug/L	40.0	20	08/05/09 17:29	fmk	9080175	OA-1 - 8021B
Toluene	3910		ug/L	40.0	20	08/05/09 17:29	fmk	9080175	OA-1 - 8021B
Ethylbenzene	1870		ug/L	40.0	20	08/05/09 17:29	fmk	9080175	OA-1 - 8021B
Xylenes, total	6170		ug/L	60.0	20	08/05/09 17:29	fmk	9080175	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	112 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	08/03/09 13:44	eee	9080044	SW
Sample ID: CSG1203-07 (SB-23 - Ground Water)					Sampled: 07/22/09 14:05		Recvd: 07/24/09 08:50		
UST Volatile Compounds by GC									
Benzene	18700	E	ug/L	40.0	20	08/05/09 18:05	fmk	9080175	OA-1 - 8021B
Toluene	18000	E	ug/L	40.0	20	08/05/09 18:05	fmk	9080175	OA-1 - 8021B
Ethylbenzene	5650		ug/L	40.0	20	08/05/09 18:05	fmk	9080175	OA-1 - 8021B
Xylenes, total	20800		ug/L	60.0	20	08/05/09 18:05	fmk	9080175	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	127 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	08/03/09 13:44	eee	9080044	SW
Sample ID: CSG1203-08 (MW-5 - Ground Water)					Sampled: 07/22/09 17:00		Recvd: 07/24/09 08:50		
UST Volatile Compounds by GC									
Benzene	14200		ug/L	40.0	20	08/05/09 18:42	fmk	9080175	OA-1 - 8021B
Toluene	285		ug/L	40.0	20	08/05/09 18:42	fmk	9080175	OA-1 - 8021B
Ethylbenzene	1850		ug/L	40.0	20	08/05/09 18:42	fmk	9080175	OA-1 - 8021B
Xylenes, total	5110		ug/L	60.0	20	08/05/09 18:42	fmk	9080175	OA-1 - 8021B
Surr: 4-Bromofluorobenzene (75-135%)	112 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	08/03/09 13:44	eee	9080044	SW

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSG1203
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/09
Reported: 08/06/09 11:47

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	9080175			ug/L	N/A	2.00	<2.00							
Toluene	9080175			ug/L	N/A	2.00	<2.00							
Ethylbenzene	9080175			ug/L	N/A	2.00	<2.00							
Xylenes, total	9080175			ug/L	N/A	3.00	<3.00							
Surrogate: 4-Bromofluorobenzene	9080175			ug/L					110		75-135			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSG1203
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/09
Reported: 08/06/09 11:47

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
Benzene	9080175		48.0	ug/L	N/A	N/A	42.0		88		50-115			
Toluene	9080175		48.0	ug/L	N/A	N/A	44.1		92		65-110			
Ethylbenzene	9080175		48.0	ug/L	N/A	N/A	46.0		96		70-110			
Xylenes, total	9080175		144	ug/L	N/A	N/A	135		94		70-110			
Surrogate: 4-Bromofluorobenzene	9080175			ug/L					113		80-130			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSG1203
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/09
Reported: 08/06/09 11:47

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC														
QC Source Sample: CSG1259-02														
Benzene	9080175	0.302	48.0	ug/L	N/A	N/A	41.1	40.8	85	84	50-115	1	10	
Toluene	9080175	0.252	48.0	ug/L	N/A	N/A	43.0	42.9	89	89	65-110	0	10	
Ethylbenzene	9080175	0.210	48.0	ug/L	N/A	N/A	44.8	45.0	93	93	65-115	0	10	
Xylenes, total	9080175	0.757	144	ug/L	N/A	N/A	132	132	91	91	65-115	0	10	
Surrogate: 4-Bromofluorobenzene	9080175			ug/L					111	111	80-135			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CSG1203
Project: Dubuque Brownfields
Project Number: 07047024

Received: 07/24/09
Reported: 08/06/09 11:47

CERTIFICATION SUMMARY

TestAmerica Cedar Falls

Method	Matrix	Nelac	Iowa
OA-1 - 8021B	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF-FSS-01.

DATA QUALIFIERS AND DEFINITIONS

E Concentration exceeds the calibration range and therefore result is semi-quantitative.
ZX Due to sample matrix effects, the surrogate recovery was outside the control limits.

ADDITIONAL COMMENTS

Sample Receipt and Temperature Log Form

Client: Terraviva Project: DBQ Brownfields

City: _____

Date: 7-24-09 Receiver's Initials: CH Time (Delivered): 8:50

Temperature Record:

Cooler ID# (If Applicable)

QCCSC

0.1

°C

On Ice

Thermometer:

☒ IR - 90876942 'C'

☐ IR - 61997671 'B'

☐ IR - 61854108

☐ 22126775

Courier:

☒ UPS

☐ FedEx

☐ FedEx Ground

☐ US Postal Service

☐ Spee-Dee

☐ TA Courier

☐ TA Field Services

☐ Client

☐ Other

☒ Temp Blank

☐ Temperature out of compliance

Custody seals present?

☒ Yes

Custody seals intact?

☒ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

☐ Sample(s) not received in a cooler.

☐ Sample(s) received same day of sampling.

☐ Evidence of a chilling process

☐ Temperature not taken:

January 06, 2010

Client:

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722

Work Order: CTA0001
Project Name: Dubuque Brownfields
Project Number: 07047024

Attn: John Brimeyer

Date Received: 01/04/10

The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
MW-3	CTA0001-01	12/30/09 13:40
SB-23	CTA0001-02	12/30/09 14:30

Samples were received into laboratory at a temperature of -6.50 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls
Stefanie Nester
Project Coordinator

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CTA0001
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/04/10
Reported: 01/06/10 12:59

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CTA0001-01 (MW-3 - Ground Water)					Sampled: 12/30/09 13:40		Recvd: 01/04/10 09:26		
Total Metals by SW 846 Series Methods									
Lead	0.0194		mg/L	0.00400	1	01/04/10 17:18	mjh	10A0012	SW 7421
Sample ID: CTA0001-02 (SB-23 - Ground Water)					Sampled: 12/30/09 14:30		Recvd: 01/04/10 09:26		
Total Metals by SW 846 Series Methods									
Lead	0.00643		mg/L	0.00400	1	01/04/10 17:21	mjh	10A0012	SW 7421

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CTA0001
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/04/10
Reported: 01/06/10 12:59

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Extraction Method
Total Metals by SW 846 Series Methods							
SW 7421	10A0012	CTA0001-01	50.00	50.00	01/04/10 09:35	KMD	SW 3020A
SW 7421	10A0012	CTA0001-02	50.00	50.00	01/04/10 09:35	KMD	SW 3020A

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CTA0001
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/04/10
Reported: 01/06/10 12:59

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
Total Metals by SW 846 Series Methods														
Lead	10A0012			mg/L	N/A	0.00400	<0.00400							

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CTA0001
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/04/10
Reported: 01/06/10 12:59

LABORATORY DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
Total Metals by SW 846 Series Methods													
QC Source Sample: CSL1322-03													
Lead	10A0012	0.00397		mg/L	N/A	0.00400	0.00397				0	20	

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CTA0001
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/04/10
Reported: 01/06/10 12:59

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
Total Metals by SW 846 Series Methods														
Lead	10A0012		0.0400	mg/L	N/A	0.00400	0.0428		107		85-115			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CTA0001
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/04/10
Reported: 01/06/10 12:59

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
Total Metals by SW 846 Series Methods														
QC Source Sample: CSL1303-03														
Lead	10A0012	0.00755	0.0400	mg/L	N/A	0.00400	0.0243	0.0215	42	35	75-125	12	20	pH>2,M1
QC Source Sample: CSL1322-02														
Lead	10A0012	0.00465	0.0400	mg/L	N/A	0.00400	0.0461		104		75-125			

DRAFT

TERRACON - BETTENDORF
870 40th Avenue
Bettendorf, IA 52722
John Brimeyer

Work Order: CTA0001
Project: Dubuque Brownfields
Project Number: 07047024

Received: 01/04/10
Reported: 01/06/10 12:59

CERTIFICATION SUMMARY

TestAmerica Cedar Falls

Method	Matrix	Nelac	Iowa
SW 7421	Water - NonPotable	X	X

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF-FSS-01.

DATA QUALIFIERS AND DEFINITIONS

M1 The MS and/or MSD were outside control limits.
pH>2 Sample received at pH>2. It was adjusted correctly prior to analysis.

ADDITIONAL COMMENTS

Sample Receipt and Temperature Log Form

Client: Terracon Project: Dubuque Brownfield

City: Bettendorf

Date: 1-4-10 Receiver's Initials: amc Time (Delivered): 840

Temperature Record:

Cooler ID# (If Applicable)

NJ

-6.8 °C / On Ice

Thermometer:

☒ IR - 90876942 'C'

☐ IR - 61997671 'B'

☐ IR - 61854108

☐ 22126775

Courier:

☒ UPS

☐ FedEx

☐ FedEx Ground

☐ US Postal Service

☐ Spee-Dee

☐ TA Courier

☐ TA Field Services

☐ Client

☐ Other

☐ Temp Blank no temp blk checked sample

* FROZEN *

☒ Temperature out of compliance

Custody seals present?

☒ Yes

Custody seals intact?

☒ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

☐ Sample(s) not received in a cooler.

☐ Samples(s) received same day of sampling.

☐ Evidence of a chilling process

☐ Temperature not taken:

Appendix D – Benzene Concentration Trends

DRAFT

CHART 1
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

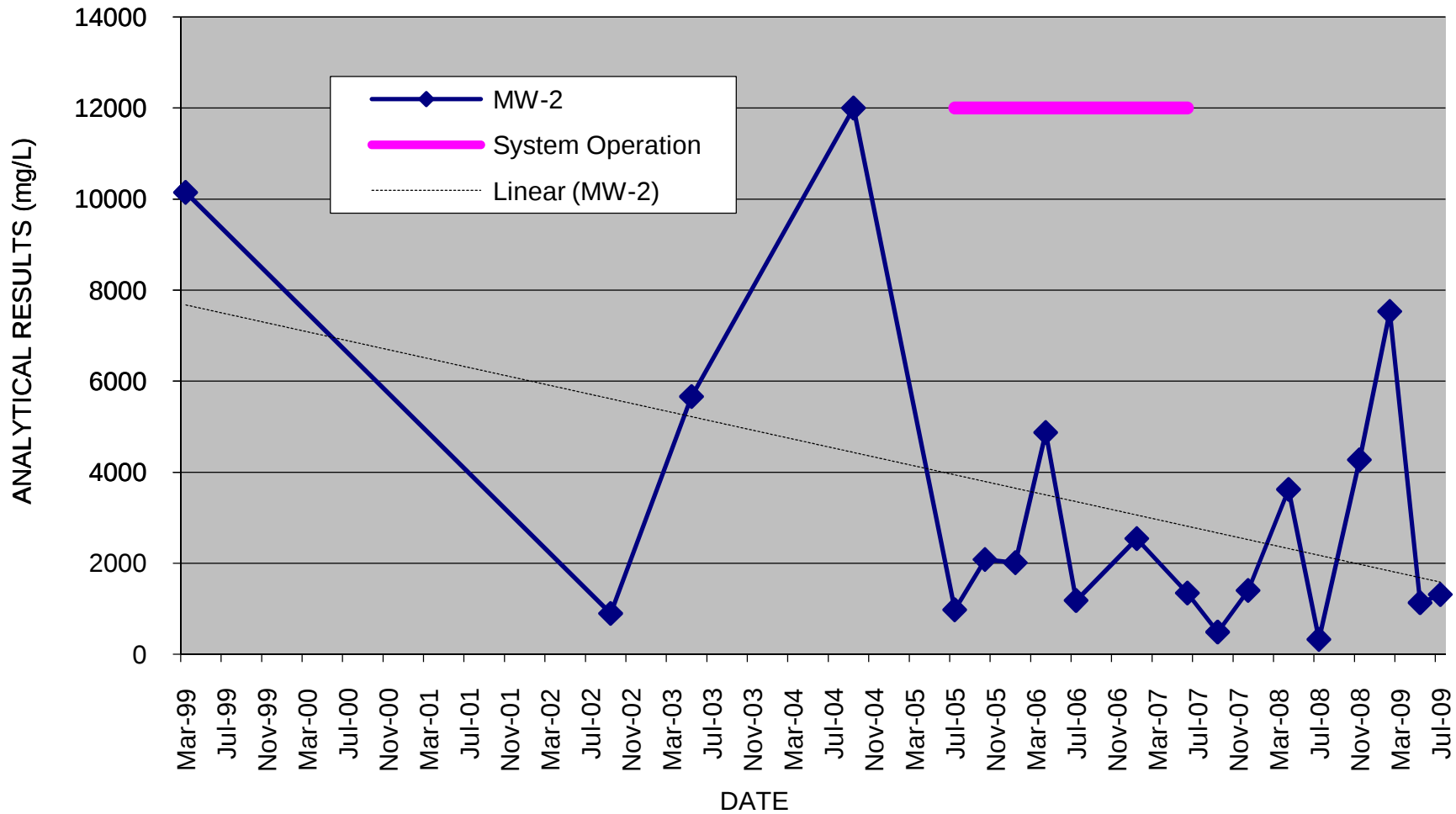


CHART 2
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

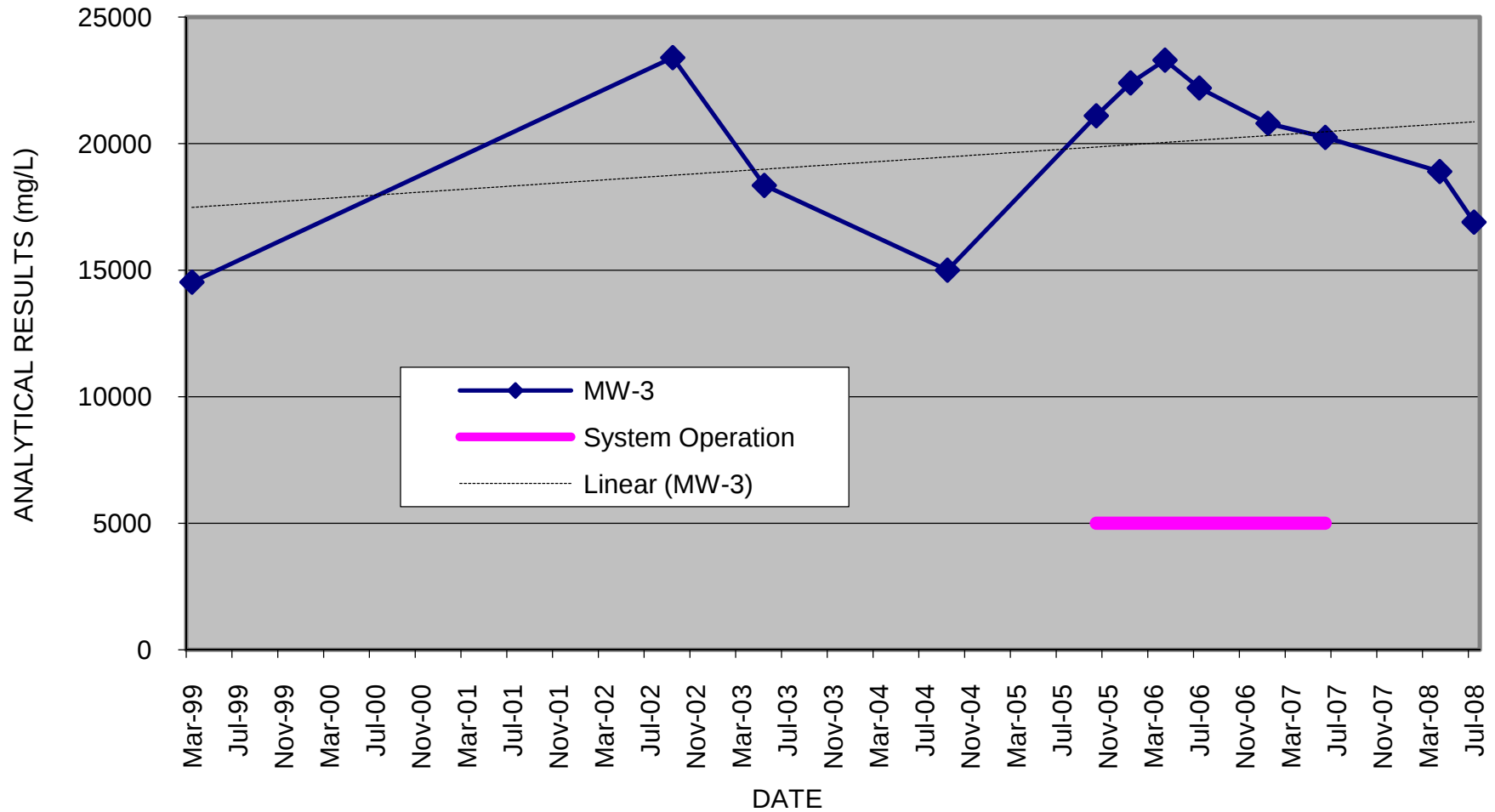


CHART 3
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

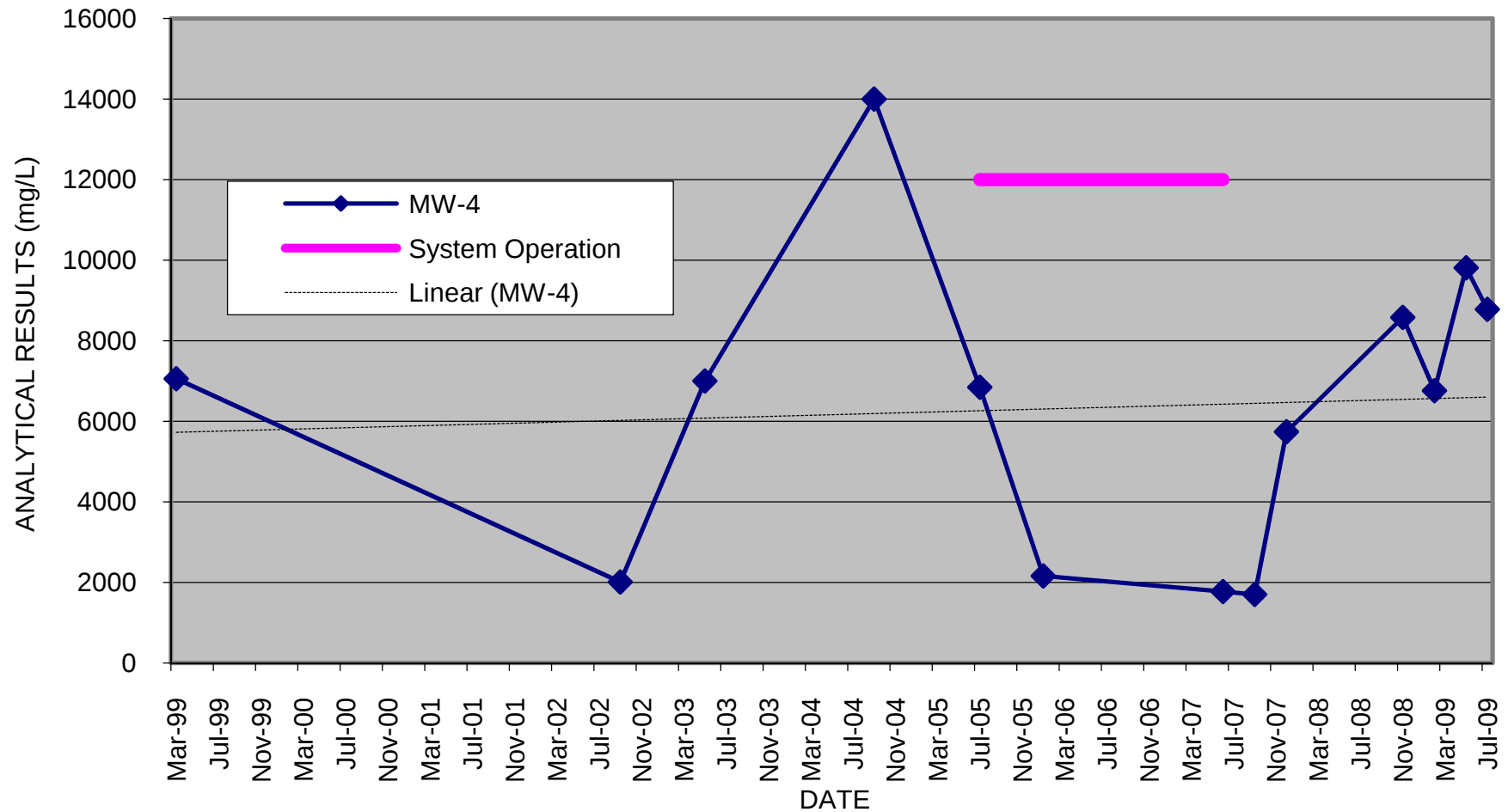


CHART 4
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

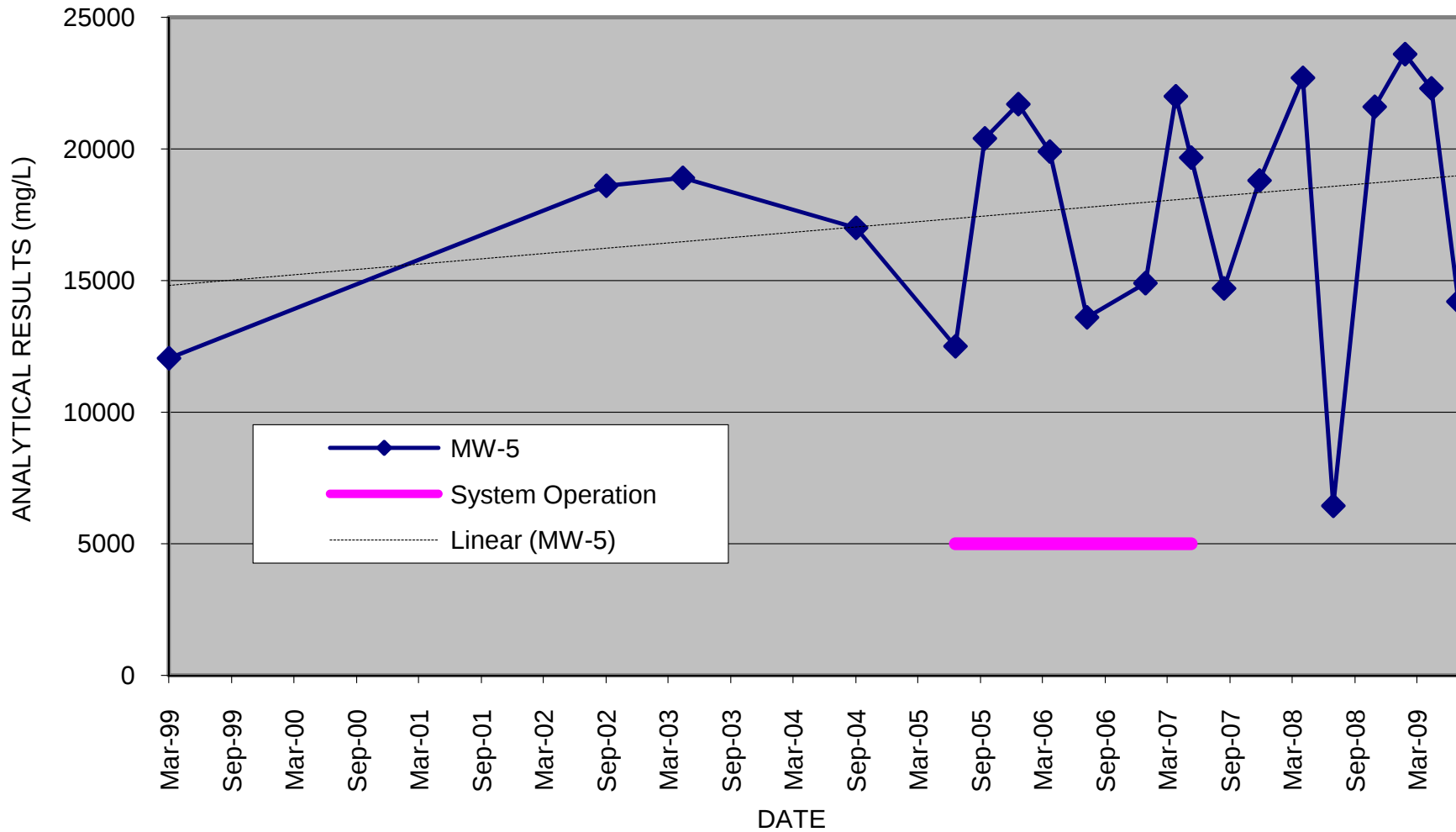


CHART 5
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

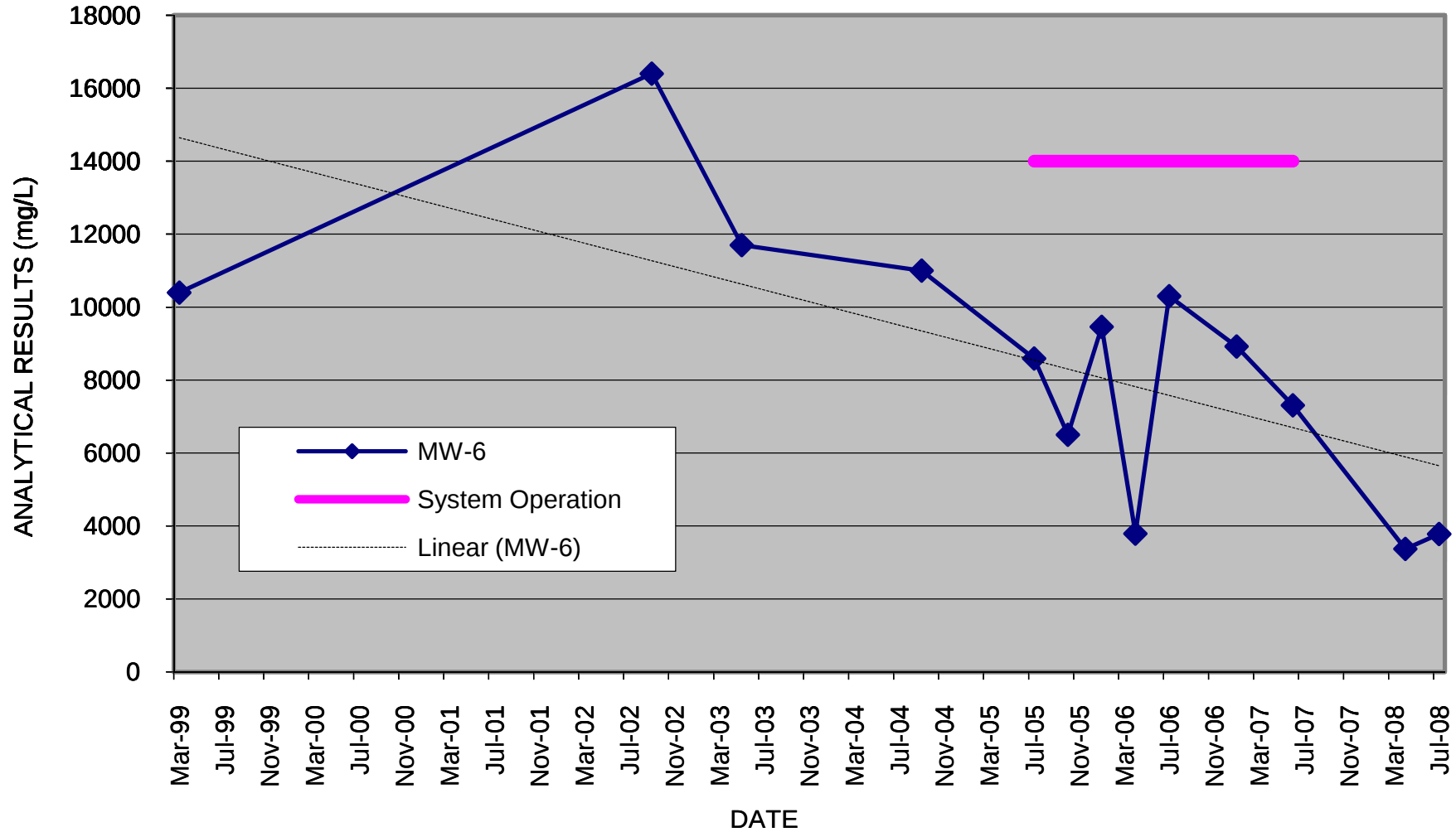


CHART 6
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

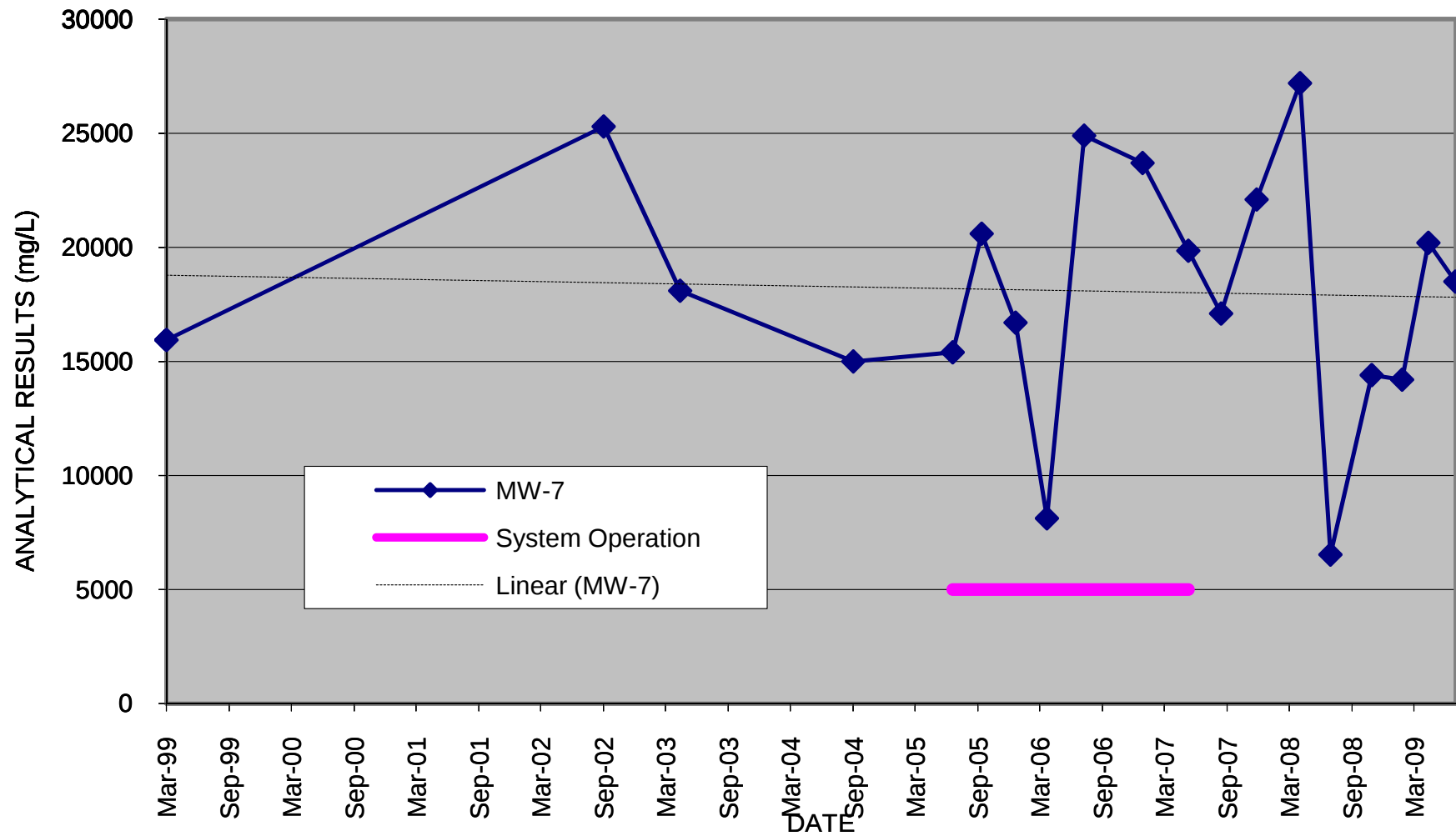


CHART 7
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

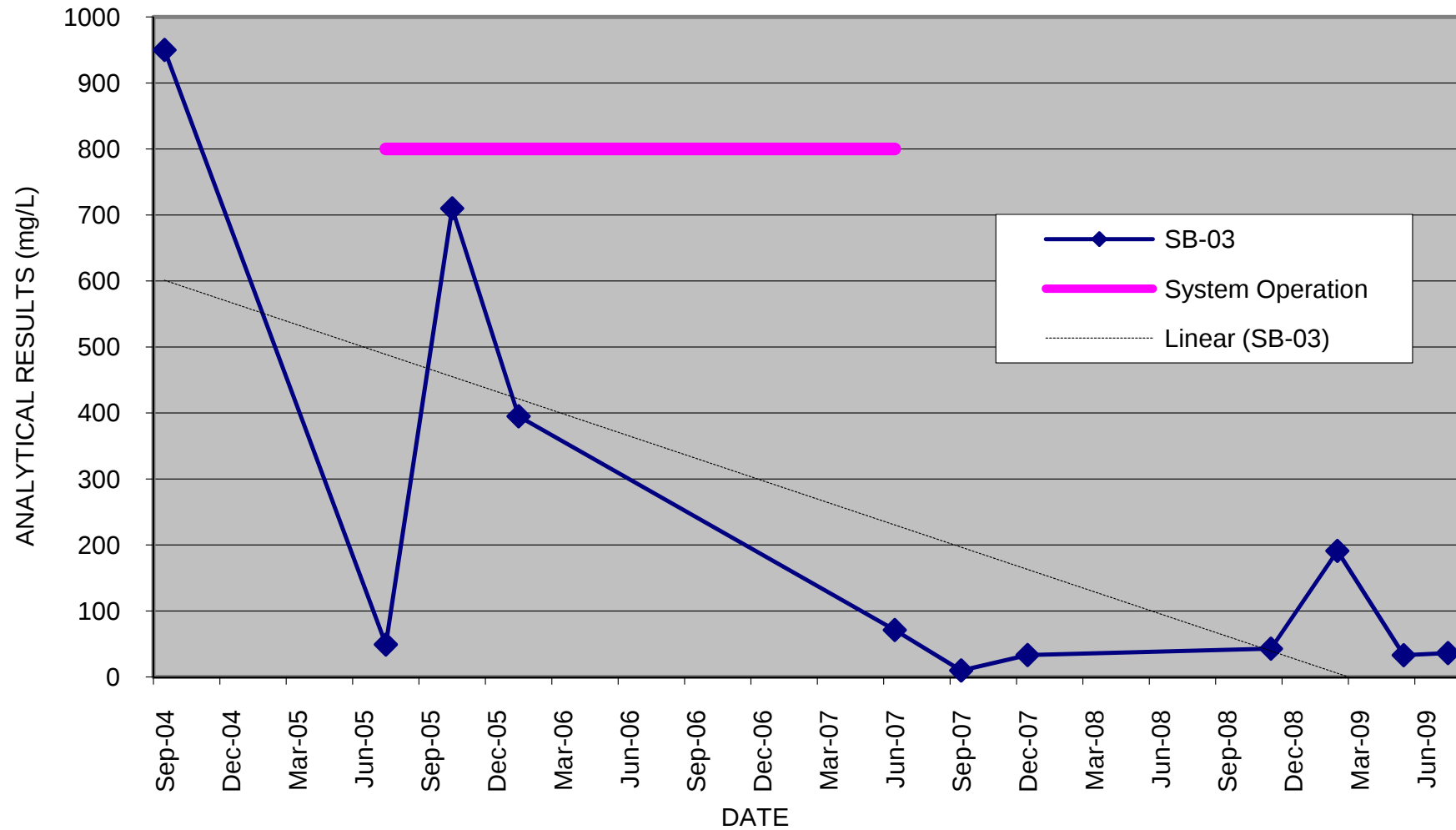


CHART 8
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

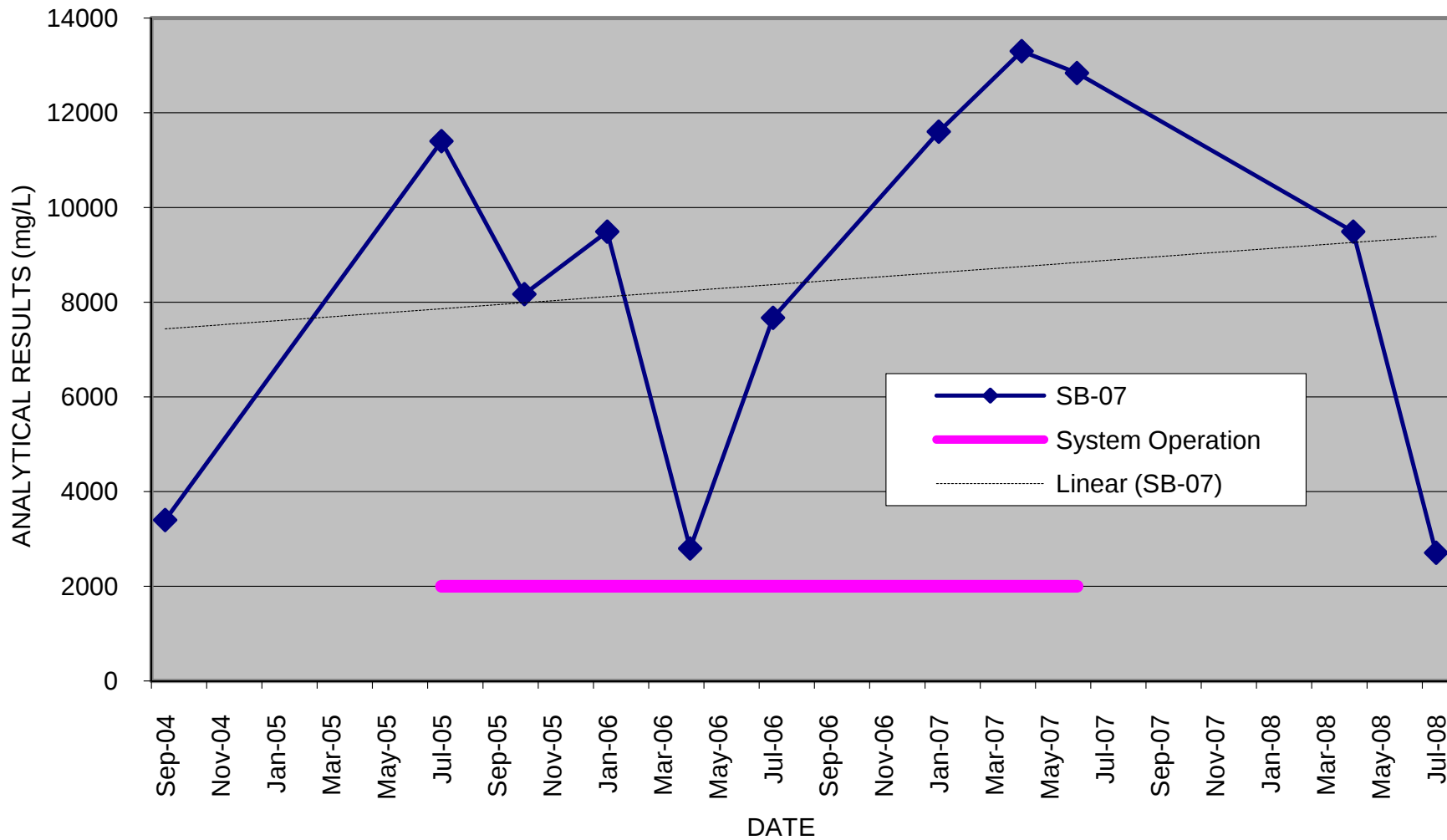


CHART 9
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

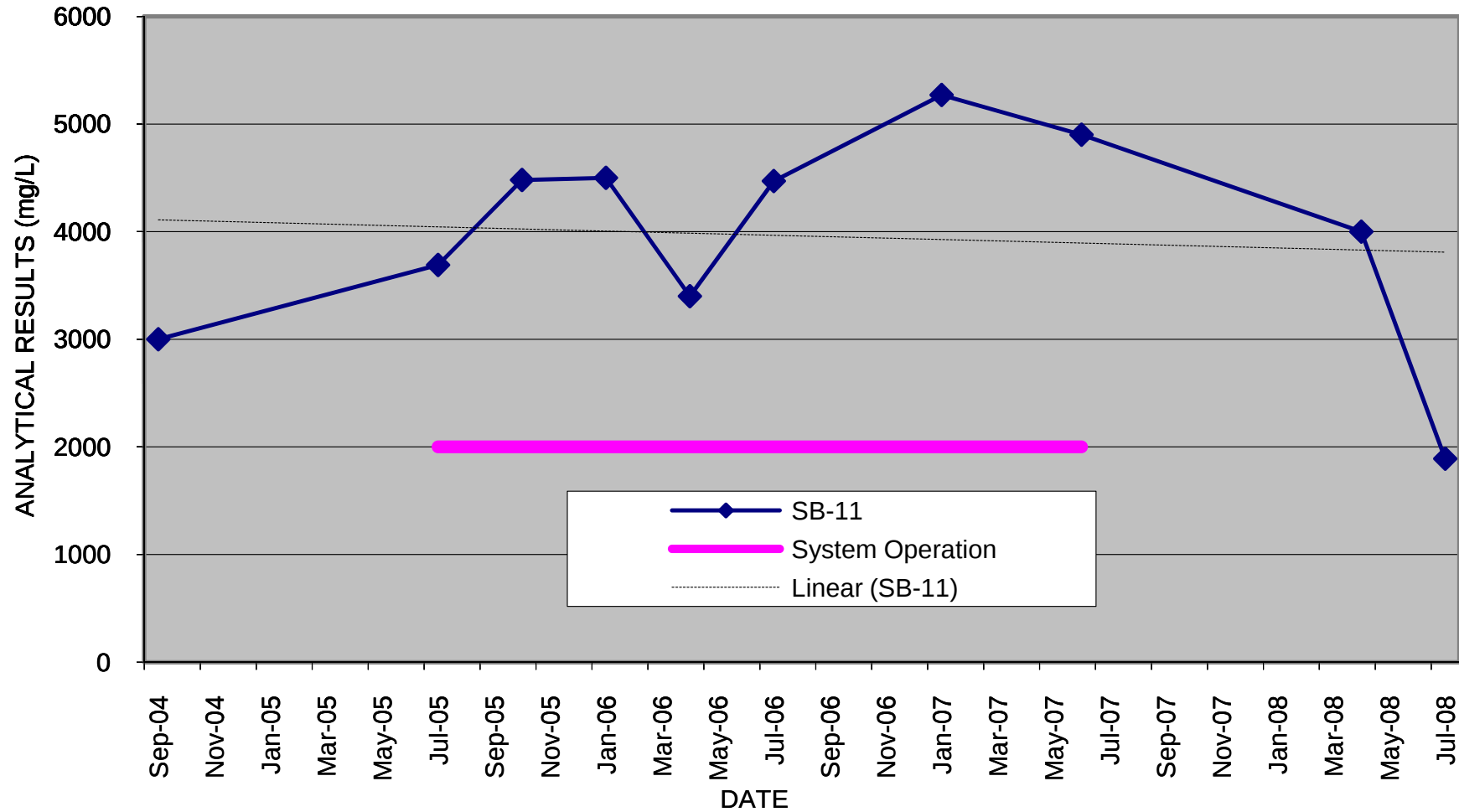


CHART 10
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

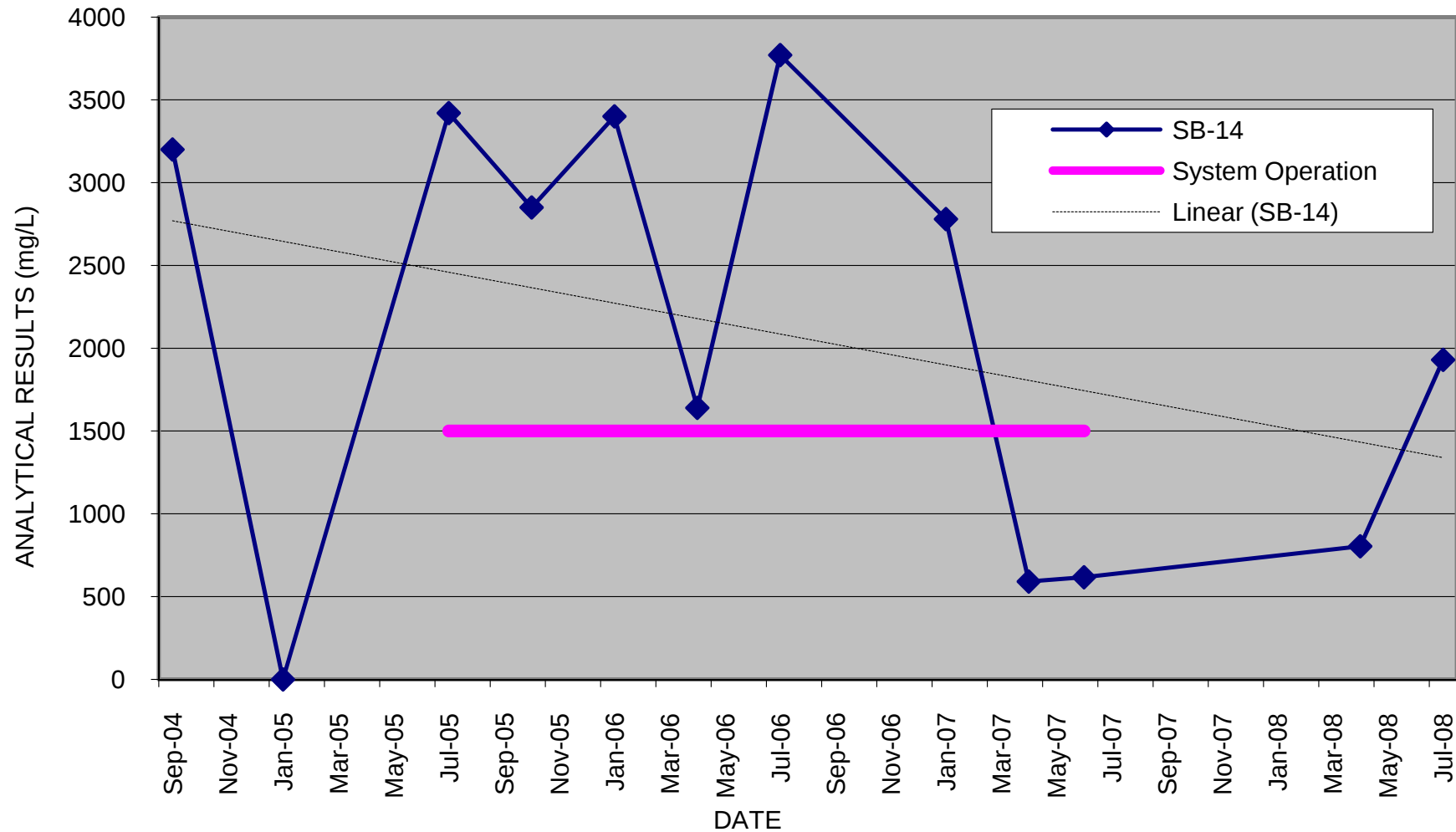


CHART 11
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

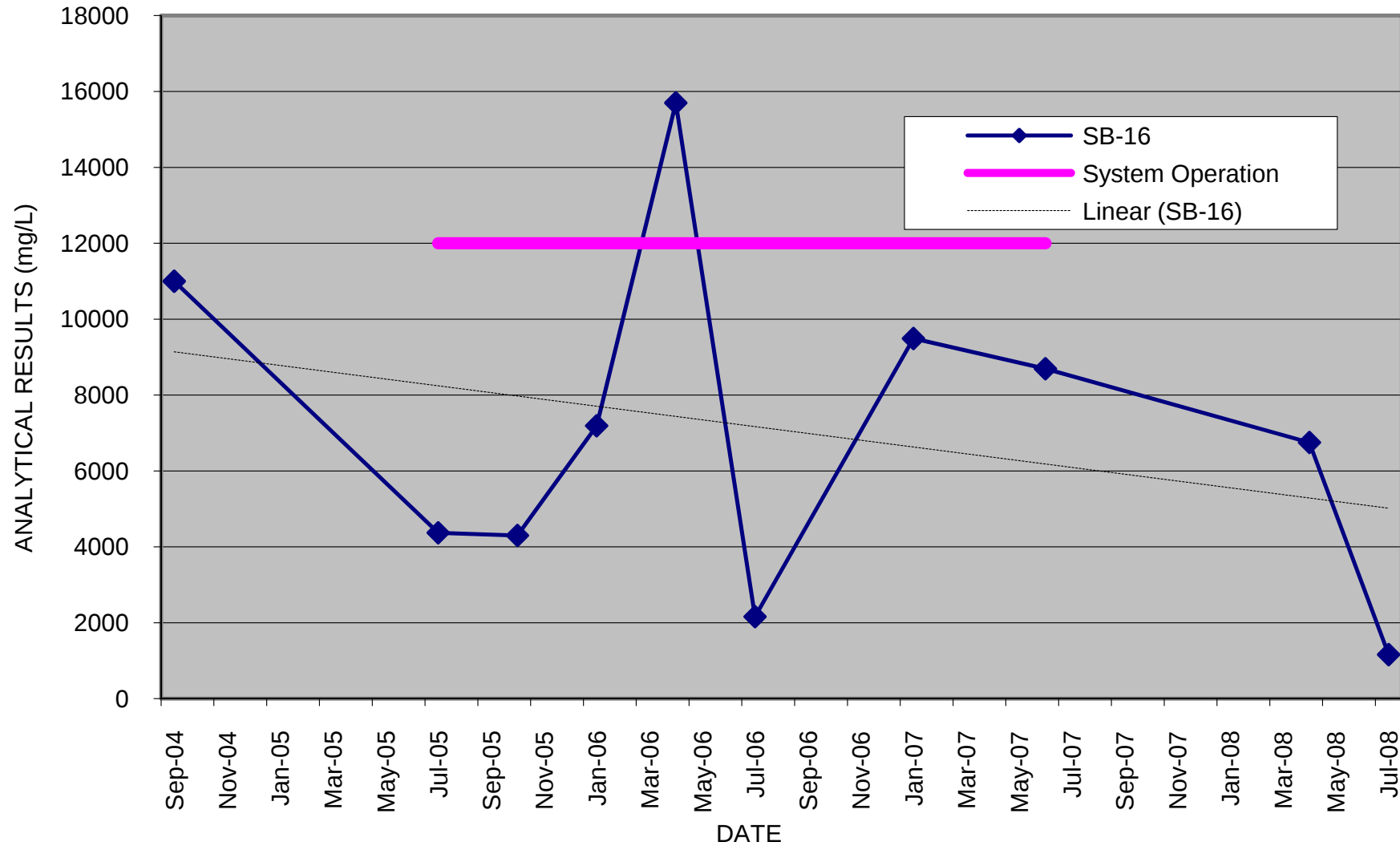


CHART 12
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

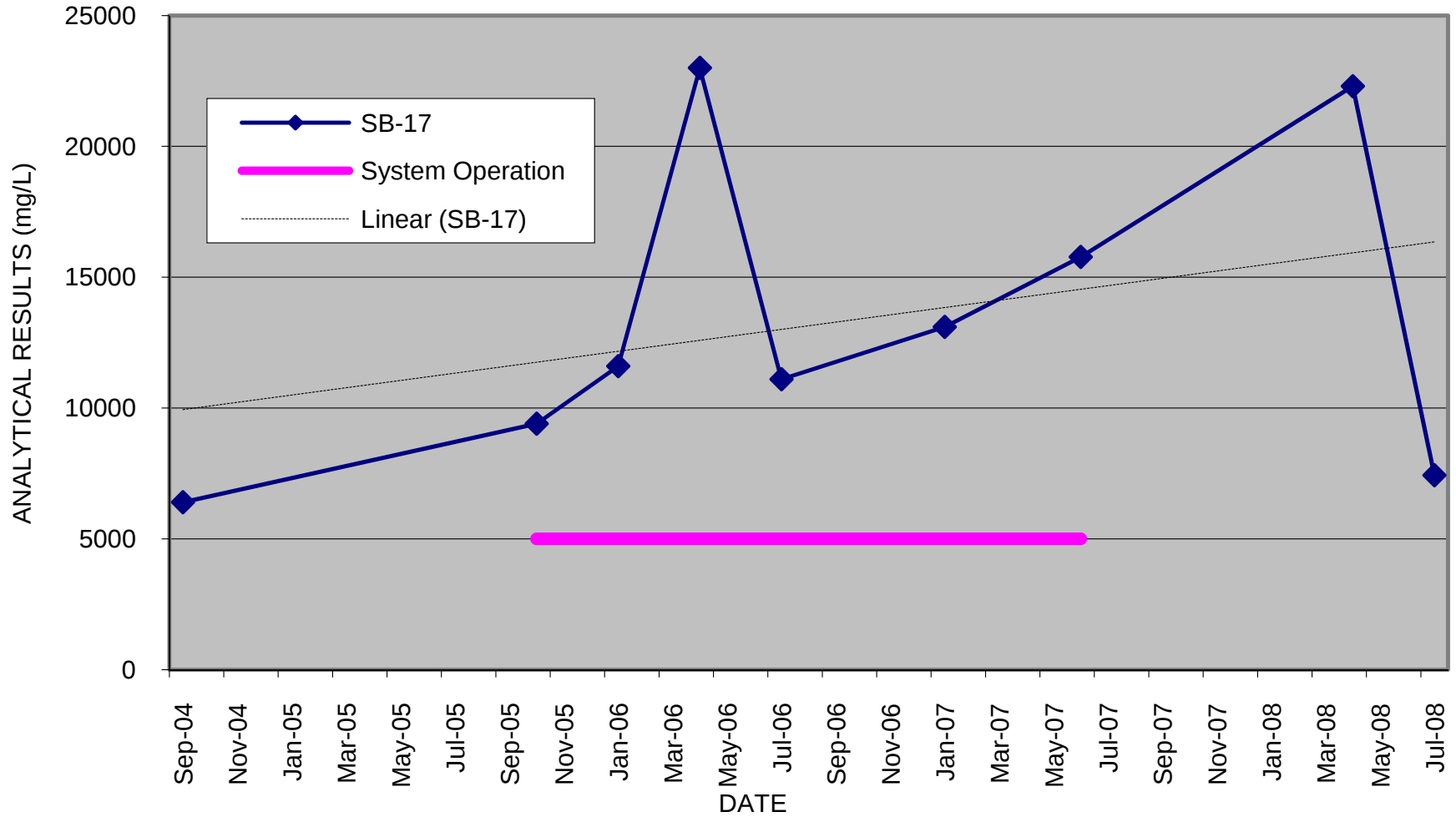


CHART 13
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS

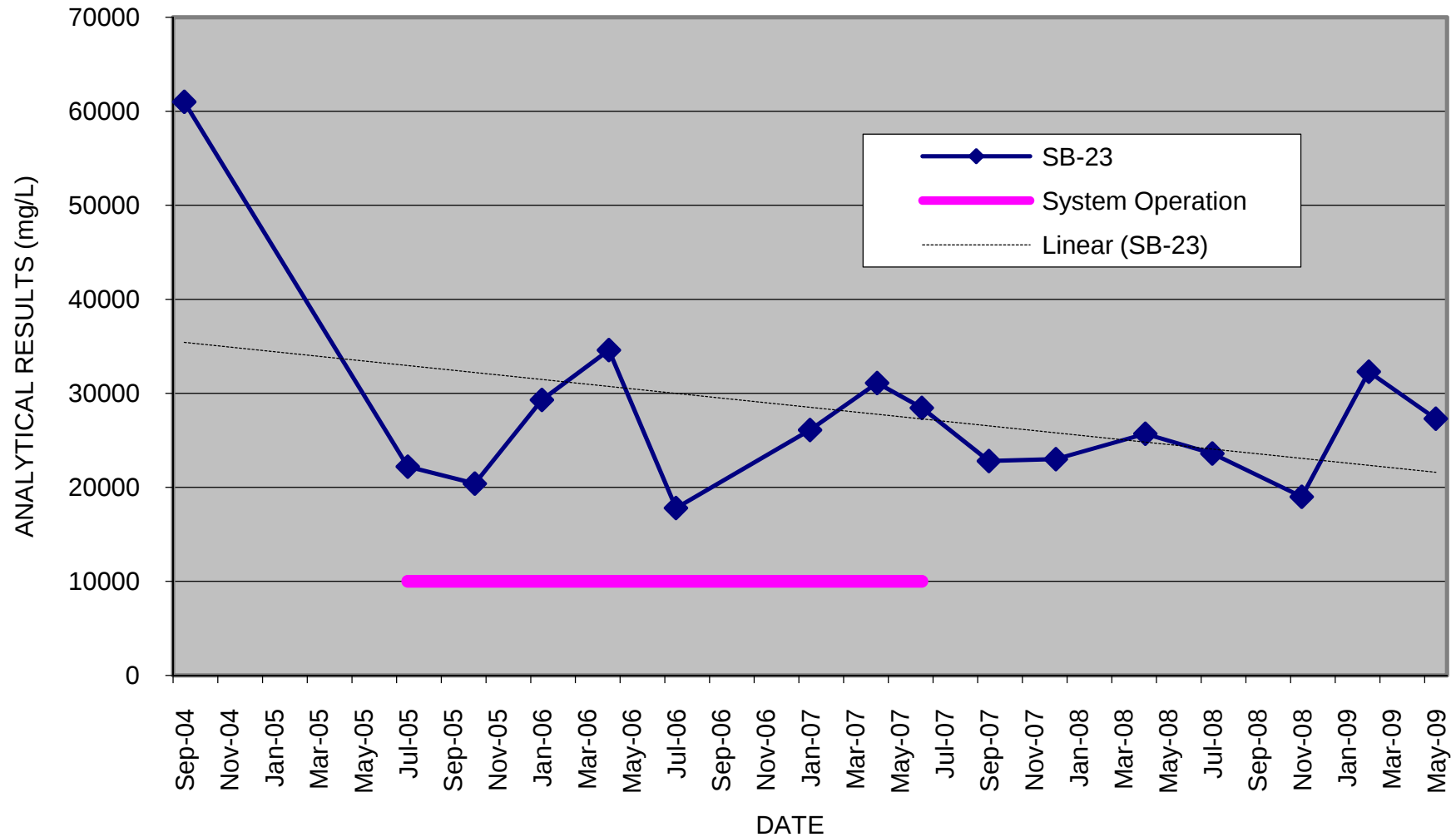
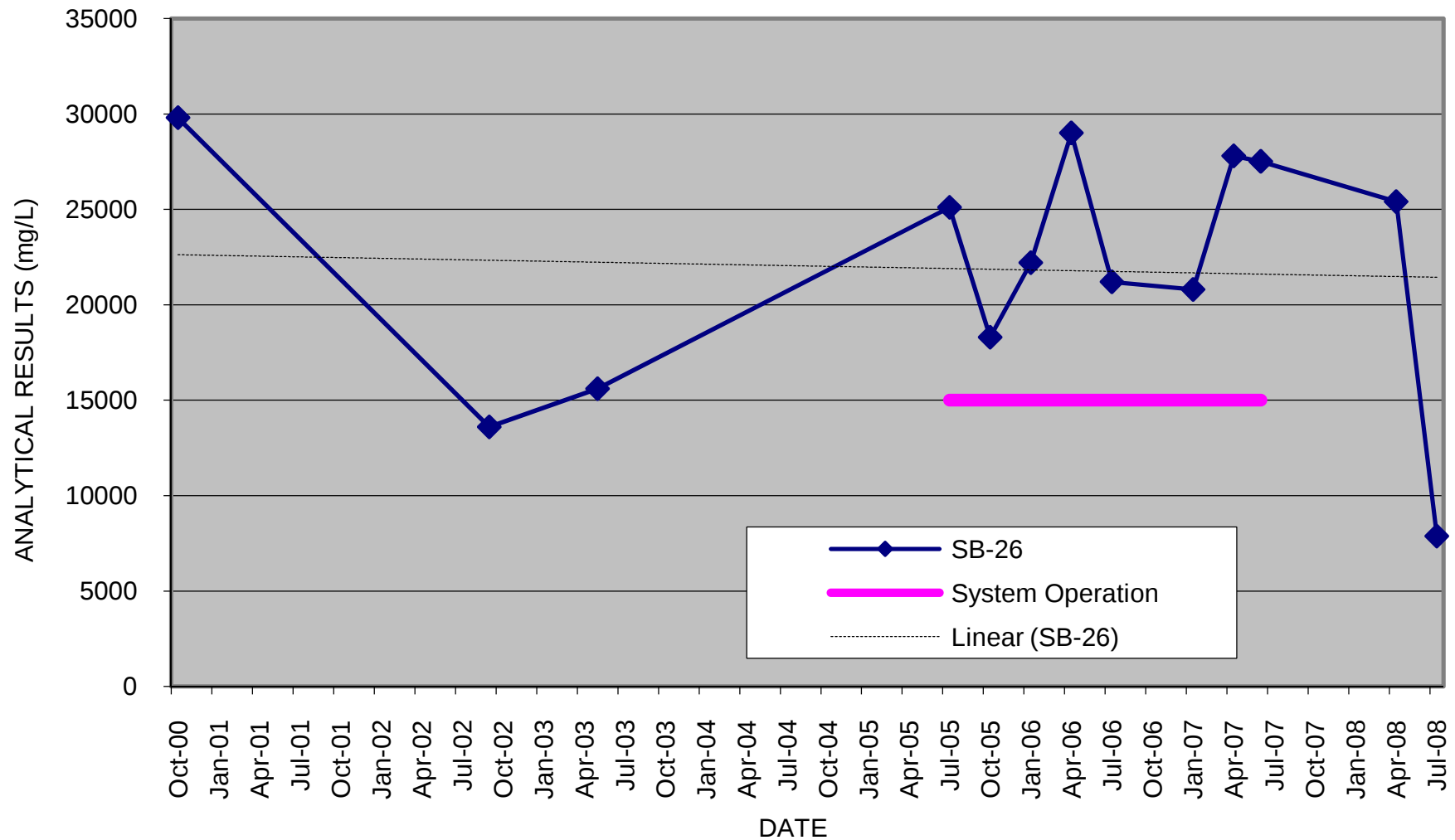


CHART 14
GROUNDWATER ANALYTICAL DATA
SITE MONITORING SUMMARY REPORT
TERRACON PROJECT NO. 07047024

BENZENE CONCENTRATION TRENDS



Appendix E - Free Product Recovery Information

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: MW-2		Ground Elevation: 604.87		Top of Casing Elevation: 604.87
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
1/26/2004	592.16	0.00	0.00	0.00
9/22/2004	593.89	0.00	0.00	0.00
1/27/2005	593.04	0.00	0.00	0.00
3/1/2005	592.92	0.00	0.00	0.00
5/15/2005	595.14	0.00	0.00	0.00
7/11/2005	595.02	0.00	0.00	0.00
7/13/2005	595.02	0.00	0.00	0.00
10/4/2005	593.75	0.00	0.00	0.00
1/11/2006	593.87	0.00	0.00	0.00
4/13/2006	597.97	0.00	0.00	0.00
7/31/2006	592.17	0.00	0.00	0.00
9/5/2007	594.60	0.00	0.00	0.00
12/17/2007	593.45	0.00	0.00	0.00
4/23/2008	597.89	Sheen	0.00	0.00
7/22/2008	595.42	Trace	0.00	0.00
11/19/2008	592.84	Sheen	0.00	0.00

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: MW-3		Ground Elevation: 605.52		Top of Casing Elevation: 605.52
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
1/26/2004	592.15	0.00	0.00	0.00
9/22/2004	593.78	0.00	0.00	0.00
1/27/2005	593.03	0.00	0.00	0.00
3/1/2005	593.12	0.00	0.00	0.00
5/15/2005	594.72	0.00	0.00	0.00
10/4/2005	593.63	0.00	0.00	0.00
1/11/2006	593.97	0.00	0.00	0.00
4/13/2006	598.18	0.00	0.00	0.00
7/31/2006	591.77	0.00	0.00	0.00
1/16/2007	591.98	0.00	0.00	0.00
9/5/2007	593.16	0.00	0.00	0.00
4/23/2008	598.53	Sheen	0.00	0.00
7/22/2008	594.28	Sheen*	0.00	0.00
11/19/2008	592.34	0.00	0.00	0.00
2/17/2009	593.81	0.00*	0.00	0.00
7/23/2009	592.08	0.00	0.00	0.00

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: MW-4		Ground Elevation: 604.80		Top of Casing Elevation: 604.80	
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)	
1/11/2006	594.29	0.00	0.00	0.00	
1/16/2007	592.70	0.00	0.00	0.00	
9/5/2007	593.05	0.00	0.00	0.00	
12/17/2007	593.78	0.00	0.00	0.00	
11/19/2008	593.29	Sheen	0.00	0.00	
* Absorbent sock in Well					

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: MW-5		Ground Elevation: 604.80		Top of Casing Elevation: 604.80
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
1/26/2004	592.25	0.00	0.00	0.00
9/22/2004	593.14	0.00	0.00	0.00
1/27/2005	593.07	0.00	0.00	0.00
3/1/2005	592.90	0.00	0.00	0.00
5/15/2005	594.65	0.00	0.00	0.00
7/11/2005	594.07	0.00	0.00	0.00
7/13/2005	594.07	0.00	0.00	0.00
10/4/2005	593.78	0.00	0.00	0.00
1/11/2006	593.89	0.00	0.00	0.00
4/13/2006	599.03	0.00	0.00	0.00
7/31/2006	591.72	0.00	0.00	0.00
1/16/2007	591.94	0.9	0.00	0.00
2/9/2007	591.89	0.7	0.1	0.3
2/20/2007	592.01	0.26	0.05	0.25
3/21/2007	596.05	0.00	0.00	0.00
4/17/2007	597.35	0.00	0.00	0.00
9/5/2007	592.72	0.00	0.00	0.00
11/5/2007	595.22	0.00	0.00	0.00
12/17/2007	593.28	0.00	0.00	0.00
2/14/2008	592.92	0.00	0.00	0.00
3/24/2008	594.11	0.00	0.00	0.00
4/23/2008	597.49	Sheen	0.00	0.00
5/12/2008	600.65	0.00	0.00	0.00
6/23/2008	597.90	0.00	0.00	0.00
7/22/2008	594.34	Sheen	0.00	0.00
8/11/2008	592.66	0.00	0.00	0.00
9/5/2008	597.76	0.00	0.00	0.00
10/17/2008	592.72	0.00	0.00	0.00
11/19/2008	592.69	Sheen	0.00	0.00
12/12/2008	592.23	0.00	0.00	0.00

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

1/23/2009	592.43	0.00	0.00	0.00
2/17/2009	594.16	Sheen*	0.00	0.00
3/11/2009	593.99	0.00	0.00	0.00
4/6/2009	596.79	0.00	0.00	0.00
5/5/2009	596.03	Sheen*	0.00	0.00
6/16/2009	593.43	Sheen*	0.00	<0.01

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: MW-6		Ground Elevation: 605.53		Top of Casing Elevation: 605.53
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
1/26/2004	592.02	1.07	0.00	0.00
9/22/2004	593.18	0.00	0.00	0.00
1/27/2005	593.07	0.00	0.00	0.00
3/1/2005	592.88	0.00	0.00	0.00
5/15/2005	594.65	0.00	0.00	0.00
7/11/2005	594.11	0.00	0.00	0.00
7/13/2005	594.11	0.00	0.00	0.00
10/4/2005	593.74	0.00	0.00	0.00
1/11/2006	593.87	0.00	0.00	0.00
4/13/2006	598.78	0.00	0.00	0.00
7/31/2006	590.40	0.00	0.00	0.00
1/17/2007	590.94	0.02	0.00	0.00
1/30/2007	591.47	0.09	0.5	0.5
2/9/2007	592.57	0.4	0.05	0.3
2/20/2007	590.58	0.5	0.12	0.38
2/28/2007	591.28	0.33	0.25	0.13
3/21/2007	595.18	0.00	0.00	0.00
9/5/2007	591.67	0.00	0.00	0.00
11/5/2007	594.13	0.00	0.00	0.00
2/14/2008	592.03	0.00	0.00	0.00
3/24/2008	593.40	0.00	0.00	0.00
4/23/2008	595.97	Sheen	0.00	0.00
5/12/2008	599.33	0.00	0.00	0.00
6/23/2008	596.28	0.00	0.00	0.00
7/22/2008	593.52	Sheen	0.00	0.00
8/11/2008	591.53	0.01*	0.00	0.00
9/5/2008	590.98	Trace*	<0.01	0.03
10/17/2008	591.56	Sheen*	0.00	0.01
11/19/2008	592.03	0.00	0.00	0.00
12/12/2008	591.10	0.00*	0.00	<0.01

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

1/23/2009	591.38	Sheen*	0.00	0.01
2/17/2009	592.98	Trace*	<0.01	0.01
3/11/2009	592.76	Sheen	0.00	<0.01
4/6/2009	595.45	Sheen*	0.00	<0.01
5/5/2009	594.87	Trace*	<0.01	<0.01
6/16/2009	592.30	Sheen*	0.00	<0.01
7/23/2009	591.03	Sheen*	0.00	<0.01

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: MW-7		Ground Elevation: 604.89		Top of Casing Elevation: 604.89
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
1/26/2004	592.44	0.00	0.00	0.00
9/22/2004	593.94	0.00	0.00	0.00
1/27/2005	593.24	0.00	0.00	0.00
3/1/2005	593.21	0.00	0.00	0.00
7/11/2005	594.46	0.00	0.00	0.00
7/13/2005	594.46	0.00	0.00	0.00
10/4/2005	593.93	0.00	0.00	0.00
1/11/2006	594.16	0.00	0.00	0.00
4/13/2006	596.92	0.00	0.00	0.00
7/31/2006	592.19	0.00	0.00	0.00
1/16/2007	592.39	0.00	0.00	0.00
4/24/2007	595.19	0.00	<0.01	0.00
9/5/2007	593.29	0.00	0.00	0.00
12/17/2007	593.52	0.00	0.00	0.00
4/23/2008	598.62	Sheen*	0.00	0.00
7/22/2008	594.70	Sheen	0.00	0.00
11/19/2008	592.85	Sheen	0.00	0.00
2/17/2009	594.28	Sheen*	0.00	0.00
5/5/2009	596.18	Sheen*	0.00	0.00

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-1		Ground Elevation Elevation:		Top of Casing Elevation: 606.90	
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)	
9/22/2004	594.00	0.00	0.00	0.00	
3/1/2005	592.98	0.00	0.00	0.00	
5/15/2005	594.90	0.00	0.00	0.00	
7/11/2005	594.80	0.00	0.00	0.00	
7/13/2005	594.80	0.00	0.00	0.00	
10/4/2005	593.51	0.00	0.00	0.00	
1/11/2006	593.90	0.00	0.00	0.00	
4/13/2006	599.10	0.00	0.00	0.00	
7/31/2006	592.02	0.00	0.00	0.00	
1/15/2007	592.32	0.00	0.00	0.00	

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-2		Ground Elevation Elevation:		Top of Casing Elevation: 607.41	
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)	
9/22/2004	593.52	0.00	0.00	0.00	
3/1/2005	593.63	0.00	0.00	0.00	
5/15/2005	595.39	0.00	0.00	0.00	
7/11/2005	595.28	0.00	0.00	0.00	
7/13/2005	595.28	0.00	0.00	0.00	
10/4/2005	593.24	0.00	0.00	0.00	
1/11/2006	593.94	0.00	0.00	0.00	
4/13/2006	596.27	0.00	0.00	0.00	
7/31/2006	593.31	0.00	0.00	0.00	
1/15/2007	592.72	0.00	0.00	0.00	

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-3		Ground Elevation Elevation:		Top of Casing Elevation: 605.39
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
9/22/2004	593.57	0.00	0.00	0.00
3/1/2005	593.82	0.00	0.00	0.00
5/15/2005	595.77	0.00	0.00	0.00
7/11/2005	595.44	0.00	0.00	0.00
7/13/2005	595.44	0.00	0.00	0.00
10/4/2005	593.30	0.00	0.00	0.00
1/11/2006	594.06	0.00	0.00	0.00
4/13/2006	595.44	0.00	0.00	0.00
7/31/2006	593.74	0.00	0.00	0.00
1/15/2007	592.97	0.00	0.00	0.00
9/5/2007	595.28	0.00	0.00	0.00
12/17/2007	593.99	0.00	0.00	0.00
11/19/2008	593.19	Sheen	0.00	0.00
2/17/2009	593.35	0.00*	0.00	0.00
5/5/2009	596.06	0.00	0.00	0.00

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-4		Ground Elevation Elevation:		Top of Casing Elevation: 605.63	
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)	
9/22/2004	593.68	0.00	0.00	0.00	
3/1/2005	593.41	0.00	0.00	0.00	
5/15/2005	595.02	0.00	0.00	0.00	
7/11/2005	593.74	0.00	0.00	0.00	
7/13/2005	593.74	0.00	0.00	0.00	
10/4/2005	593.32	0.00	0.00	0.00	
4/13/2006	599.30	0.00	0.00	0.00	
7/31/2006	592.78	0.00	0.00	0.00	
1/15/2007	592.63	0.00	0.00	0.00	
* Absorbent sock in Well					

IDNR Form 542-1424

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-5		Ground Elevation: 604.62		Top of Casing Elevation: 604.62
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
9/22/2004	593.51	0.00	0.00	0.00
3/1/2005	593.78	0.00	0.00	0.00
5/15/2005	595.64	0.00	0.00	0.00
7/11/2005	594.14	0.00	0.00	0.00
7/13/2005	594.14	0.00	0.00	0.00
10/4/2005	593.24	0.00	0.00	0.00
1/11/2006	594.02	0.00	0.00	0.00
4/13/2006	596.00	0.00	0.00	0.00
7/31/2006	593.69	0.00	0.00	0.00
1/15/2007	592.92	0.00	0.00	0.00

* Absorbent sock in Well

IDNR Form 542-1424

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-7		Ground Elevation: 606.45		Top of Casing Elevation: 606.45
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
9/22/2004	593.93	0.00	0.00	0.00
3/1/2005	593.04	0.00	0.00	0.00
5/15/2005	594.87	0.00	0.00	0.00
7/11/2005	594.74	0.00	0.00	0.00
7/13/2005	594.74	0.00	0.00	0.00
10/4/2005	593.47	0.00	0.00	0.00
1/11/2006	593.92	0.00	0.00	0.00
4/13/2006	597.57	0.00	0.00	0.00
7/31/2006	592.15	0.00	0.00	0.00
1/15/2007	592.24	0.00	0.04	0.33
1/30/2007	592.49	Trace	0.00	0.00
2/9/2007	592.02	1.07	0.15	0.1
2/20/2007	591.90	1.33	0.6	0.5
2/28/2007	592.57	0.61	0.4	0.1
3/21/2007	595.34	0.00	0.00	0.00
4/17/2007	597.57	Sheen	0.00	0.00
5/17/2007	595.25	0.00	0.00	0.00
9/5/2007	593.79	0.00	0.00	0.00
11/5/2007	595.48	0.00	0.00	0.00
12/17/2007	593.65	0.01	0.00	0.00
2/14/2008	593.34	0.00	0.00	0.00
3/24/2008	594.39	Sheen*	0.00	0.02
4/23/2008	597.85	Sheen*	0.00	0.02
5/12/2008	600.56	Sheen*	0.00	<0.01
6/23/2008	599.69	0.00*	0.00	0.00
7/22/2008	595.77	0.00	0.00	<0.01
8/11/2008	593.55	Trace*	<0.01	<0.01
9/5/2008	592.48	Trace*	0.02	0.00
10/17/2008	592.79	Sheen*	0.00	0.06
11/19/2008	592.70	Trace*	<0.01	0.02

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

12/12/2008	592.43	Trace*	0.02	0.00
1/23/2009	592.65	Sheen*	0.00	0.03
2/17/2009	594.07	Sheen*	0.00	0.04
3/11/2009	593.96	Trace*	<0.01	0.01
4/6/2009	596.03	Trace*	<0.01	0.03
5/5/2009	596.04	Trace*	<0.01	0.07
6/16/2009	593.82	Sheen*	0.00	0.01
7/23/2009	592.45	Trace*	<0.01	0.04

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-8		Ground Elevation Elevation:		Top of Casing Elevation: 605.38
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
9/22/2004	593.75	0.00	0.00	0.00
3/1/2005	593.13	0.00	0.00	0.00
5/15/2005	594.67	0.00	0.00	0.00
7/11/2005	594.66	0.00	0.00	0.00
7/13/2005	594.66	0.00	0.00	0.00
10/4/2005	593.32	0.00	0.00	0.00
1/11/2006	593.83	0.00	0.00	0.00
4/13/2006	597.69	0.00	0.00	0.00
7/31/2006	592.16	0.00	0.00	0.00
1/15/2007	592.35	0.00	0.00	0.00

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-9		Ground Elevation Elevation:		Top of Casing Elevation: 605.73
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
9/22/2004	593.71	0.00	0.00	0.00
3/1/2005	593.32	0.00	0.00	0.00
5/15/2005	594.83	0.00	0.00	0.00
7/11/2005	595.00	0.00	0.00	0.00
7/13/2005	595.00	0.00	0.00	0.00
10/4/2005	593.37	0.00	0.00	0.00
1/11/2006	593.93	0.00	0.00	0.00
4/13/2006	597.45	0.00	0.00	0.00
7/31/2006	591.40	0.00	0.00	0.00
1/15/2007	592.10	0.00	0.00	0.00

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-11		Ground Elevation: 608.17		Top of Casing Elevation: 608.17	
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)	
9/22/2004	593.25	0.00	0.00	0.00	
3/1/2005	593.80	0.00	0.00	0.00	
5/15/2005	595.06	0.00	0.00	0.00	
7/11/2005	594.97	0.00	0.00	0.00	
7/13/2005	594.97	0.00	0.00	0.00	
10/4/2005	593.17	0.00	0.00	0.00	
1/11/2006	594.06	0.00	0.00	0.00	
4/13/2006	597.12	0.00	0.00	0.00	
7/31/2006	592.92	0.00	0.00	0.00	
1/16/2007	592.73	0.00	0.00	0.00	
4/23/2008	599.37	Sheen	0.00	0.00	
7/22/2008	595.46	Sheen	0.00	0.00	
* Absorbent sock in Well					

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-12		Ground Elevation: 605.52		Top of Casing Elevation: 605.52	
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)	
9/22/2004	593.95	0.00	0.00	0.00	
3/1/2005	592.92	0.00	0.00	0.00	
5/15/2005	594.92	0.00	0.00	0.00	
7/11/2005	594.88	0.00	0.00	0.00	
7/13/2005	594.88	0.00	0.00	0.00	
10/4/2005	593.54	0.00	0.00	0.00	
4/13/2006	598.08	0.00	0.00	0.00	
7/31/2006	591.90	0.00	0.00	0.00	
1/15/2007	592.32	0.00	0.00	0.00	
9/5/2007	594.82	0.00	0.00	0.00	
12/17/2007	593.46	0.00	0.00	0.00	
11/19/2008	592.91	0.00	0.00	0.00	
* Absorbent sock in Well					

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-14		Ground Elevation: 605.58		Top of Casing Elevation: 605.58
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
9/22/2004	593.51	0.00	0.00	0.00
1/27/2005	593.06	0.13	0.00	0.00
3/1/2005	593.75	0.00	0.00	0.00
5/15/2005	595.58	0.00	0.00	0.00
7/11/2005	595.30	0.00	0.00	0.00
7/13/2005	595.30	0.00	0.00	0.00
10/4/2005	593.19	0.00	0.00	0.00
1/11/2006	594.03	0.00	0.00	0.00
4/13/2006	595.63	0.00	0.00	0.00
7/31/2006	593.53	0.00	0.00	0.00
1/15/2007	592.74	0.3	0.05	1
1/16/2007	592.72	0.23	0.04	0.25
1/30/2007	592.80	0.34	0.5	0.5
2/9/2007	592.55	0.2	0.05	0.2
2/20/2007	592.93	0.33	0.25	0.3
2/28/2007	592.50	0.23	0.1	0.15
3/21/2007	594.81	0.00	0.00	0.00
9/5/2007	595.14	0.00	0.00	0.00
11/5/2007	595.81	0.01	0.00	0.00
12/17/2007	593.85	0.00	0.00	0.00
2/14/2008	593.73	0.00	0.00	0.00
3/24/2008	594.41	0.00	0.00	0.00
4/23/2008	597.66	Sheen	0.00	0.00
5/12/2008	599.93	0.00	0.00	0.00
6/23/2008	598.58	0.00	0.00	0.00
7/22/2008	596.30	Sheen	0.00	0.00
8/11/2008	592.73	0.00*	0.00	<0.01
9/5/2008	593.56	0.00*	0.00	<0.01
10/17/2008	593.09	Sheen*	0.00	<0.01
11/19/2008	593.02	Sheen*	0.00	<0.01

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

12/12/2008	592.79	Trace*	<0.01	0.00
1/23/2009	592.89	0.01*	0.03	<0.01
2/17/2009	593.36	Trace*	<0.01	0.03
3/11/2009	593.58	Sheen*	0.00	0.02
4/6/2009	594.92	Sheen*	0.00	<0.01
5/5/2009	596.06	0.00*	0.00	<0.01
6/16/2009	594.45	0.00*	0.00	<0.01
7/23/2009	593.36	Sheen*	0.00	<0.01

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-16		Ground Elevation: 604.88		Top of Casing Elevation: 604.88	
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)	
9/22/2004	594.28	0.00	0.00	0.00	
1/27/2005	592.98	0.00	0.00	0.00	
3/1/2005	593.28	0.00	0.00	0.00	
7/11/2005	594.81	0.00	0.00	0.00	
7/13/2005	594.81	0.00	0.00	0.00	
7/25/2005	593.33	0.00	0.00	0.00	
10/4/2005	593.78	0.00	0.00	0.00	
1/11/2006	594.15	0.00	0.00	0.00	
4/13/2006	595.89	0.00	0.00	0.00	
7/31/2006	591.79	0.00	0.00	0.00	
1/16/2007	591.91	0.00	0.00	0.00	
4/23/2008	596.03	Sheen	0.00	0.00	
7/22/2008	596.25	Sheen	0.00	0.00	
* Absorbent sock in Well					

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-17		Ground Elevation: 604.51		Top of Casing Elevation: 604.51
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
9/22/2004	593.84	0.05	0.00	0.00
1/27/2005	592.32	3.51	0.00	0.00
3/1/2005	592.90	0.65	0.00	0.00
5/15/2005	594.86	0.00	0.00	0.00
7/11/2005	591.95	5.4	0.00	0.00
7/13/2005	591.95	5.4	0.00	0.00
10/4/2005	593.62	0.23	0.00	0.00
4/13/2006	598.42	0.00	0.00	0.00
7/31/2006	591.33	0.2	0.00	0.00
1/17/2007	591.34	0.3	0.12	0.02
2/9/2007	591.05	Trace	0.00	0.00
2/20/2007	591.78	0.02	0.01	0.05
2/28/2007	592.11	0.00*	0.02	0.00
3/21/2007	595.00	0.00	<0.01	0.00
4/24/2007	594.36	0.00	<0.01	0.00
9/5/2007	592.20	0.03	<0.01	0.00
11/6/2007	594.29	0.00*	0.03	0.00
12/17/2007	592.17	1.84	1	0.33
2/14/2008	592.11	0.75	0.37	0.18
3/24/2008	593.41	Trace*	0.02	<0.01
4/23/2008	596.68	Trace*	0.01	0.01
5/12/2008	599.21	Sheen*	0.00	<0.01
6/23/2008	597.44	Trace*	0.05	0.06
7/22/2008	593.70	1.1*	0.57	0.96
8/11/2008	592.11	Trace*	0.08	0.05
9/5/2008	591.39	Trace*	0.04	0.06
10/17/2008	591.97	Sheen*	0.00	0.06
11/19/2008	591.73	Trace*	<0.01	0.05
12/12/2008	591.52	Sheen*	0.00	0.03
1/23/2009	591.71	Sheen*	0.00	0.04

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

2/17/2009	593.36	Trace*	<0.01	0.04
3/11/2009	593.07	0.00*	0.00	0.01
4/6/2009	595.57	0.00*	0.00	0.03
5/5/2009	595.14	Sheen*	0.00	0.02
6/16/2009	592.86	Sheen*	0.00	<0.01
7/23/2009	591.53	Trace*	<0.01	<0.01

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-20		Ground Elevation Elevation:		Top of Casing Elevation: 604.82	
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)	
9/22/2004	593.61	0.00	0.00	0.00	
3/1/2005	593.47	0.00	0.00	0.00	
5/15/2005	594.93	0.00	0.00	0.00	
7/11/2005	594.53	0.00	0.00	0.00	
7/13/2005	594.53	0.00	0.00	0.00	
4/13/2006	598.20	0.00	0.00	0.00	
7/31/2006	592.52	0.00	0.00	0.00	
1/15/2007	592.44	0.00	0.00	0.00	
9/5/2007	591.94	0.00	0.00	0.00	
* Absorbent sock in Well					

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-23		Ground Elevation: 605.30		Top of Casing Elevation: 605.30
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
9/22/2004	593.53	0.00	0.00	0.00
1/27/2005	593.10	0.00	0.00	0.00
3/1/2005	593.05	0.00	0.00	0.00
5/15/2005	594.80	0.00	0.00	0.00
7/11/2005	594.32	0.00	0.00	0.00
7/13/2005	594.32	0.00	0.00	0.00
10/4/2005	593.80	0.00	0.00	0.00
1/11/2006	593.97	0.00	0.00	0.00
4/13/2006	598.08	0.00	0.00	0.00
7/31/2006	590.60	0.00	0.00	0.00
1/16/2007	590.30	1.5	0.75	0.75
1/17/2007	590.77	0.45	0.2	0.05
1/30/2007	592.06	0.59	0.1	0.00
2/9/2007	591.35	0.48	0.25	0.00
2/20/2007	590.99	0.03	0.01	0.1
2/28/2007	591.48	0.67	0.5	0.05
3/21/2007	594.23	0.00	<0.01	0.00
4/17/2007	596.32	0.00	0.00	0.00
4/24/2007	595.25	0.00	0.00	0.00
9/5/2007	591.81	0.02	<0.01	0.00
11/6/2007	593.80	Trace*	<0.01	<0.01
12/17/2007	591.97	0.00	0.00	0.00
2/14/2008	591.74	0.00	0.00	0.00
3/24/2008	592.90	0.00	0.00	0.00
4/23/2008	596.68	Sheen	0.00	0.00
5/12/2008	598.91	0.00	0.00	0.00
6/23/2008	597.02	0.00	0.00	0.00
7/22/2008	593.30	0.04*	<0.01	0.18
8/11/2008	591.99	0.00*	0.00	0.00
9/5/2008	591.36	0.00*	0.00	0.00

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

10/17/2008	591.87	Trace*	<0.01	0.02
11/19/2008	591.88	Trace*	<0.01	0.01
12/12/2008	591.45	0.00*	0.00	<0.01
1/23/2009	591.67	Sheen*	0.00	0.01
2/17/2009	593.24	Sheen*	0.00	0.02
3/11/2009	593.03	Sheen*	0.00	0.02
4/6/2009	595.34	0.00*	0.00	0.03
5/5/2009	595.18	Sheen*	0.00	0.02
6/16/2009	592.68	Sheen*	0.00	0.02

* Absorbent sock in Well

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-24		Ground Elevation: 605.16		Top of Casing Elevation: 605.16	
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)	
9/22/2004	594.13	0.00	0.00	0.00	
1/27/2005	593.10	0.00	0.00	0.00	
3/1/2005	593.11	0.00	0.00	0.00	
5/15/2005	594.81	0.00	0.00	0.00	
7/11/2005	594.87	0.00	0.00	0.00	
7/13/2005	594.34	0.00	0.00	0.00	
10/4/2005	594.03	0.00	0.00	0.00	
1/11/2006	594.02	0.00	0.00	0.00	
4/13/2006	599.27	0.00	0.00	0.00	
7/31/2006	592.71	0.00	0.00	0.00	
1/16/2007	592.28	0.00	0.00	0.00	
9/5/2007	593.75	0.00	0.00	0.00	
12/17/2007	593.44	0.00	0.00	0.00	
11/19/2008	592.86	Sheen	0.00	0.00	
* Absorbent sock in Well					

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: SB-26		Ground Elevation: 606.31		Top of Casing Elevation: 606.31
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
7/11/2005	594.20	0.00	0.00	0.00
7/13/2005	594.20	0.00	0.00	0.00
10/4/2005	593.61	0.00	0.00	0.00
1/11/2006	593.91	0.00	0.00	0.00
4/13/2006	598.17	0.06	0.00	0.00
7/31/2006	591.61	0.00	0.00	0.00
1/16/2007	592.37	0.00	0.00	0.00
1/30/2007	593.02	0.00	0.00	0.00
2/9/2007	592.46	0.00	0.00	0.00
2/20/2007	592.30	0.00	0.00	0.00
2/28/2007	592.84	0.00	0.00	0.00
3/21/2007	595.89	0.00	0.00	0.00
4/17/2007	597.66	Sheen	0.00	0.00
4/24/2007	597.31	0.00	0.00	0.00
5/17/2007	595.74	0.00	0.00	0.00
11/5/2007	595.71	0.00	0.00	0.00
12/17/2007	593.53	0.00	0.00	0.00
2/14/2008	593.28	0.00	0.00	0.00
3/24/2008	594.47	0.00	0.00	0.00
4/23/2008	598.30	Sheen	0.00	0.00
5/12/2008	600.74	0.00	0.00	0.00
6/23/2008	599.38	0.02	<0.01	0.03
7/22/2008	594.93	0.49*	0.03	0.22
8/11/2008	593.07	Trace*	<0.01	0.05
9/5/2008	592.41	Trace*	<0.01	0.03
10/17/2008	592.93	Sheen*	0.00	0.03
11/19/2008	592.77	Sheen*	0.00	<0.01
12/12/2008	592.51	0.00*	0.00	<0.01
1/23/2009	592.73	Sheen*	0.00	0.01
2/17/2009	594.27	Sheen*	0.00	0.03

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

3/11/2009	594.07	Trace*	0.00	<0.01
4/6/2009	596.50	Sheen*	0.00	0.03
5/5/2009	596.22	Sheen*	0.00	0.01
6/16/2009	593.72	Sheen*	0.00	<0.01
7/23/2009	592.47	Sheen*	0.00	<0.01

* Absorbent sock in Well

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