

ORDINANCE NUMBER 19-1

AN ORDINANCE PROHIBITING THE USE OF GROUNDWATER AS A POTABLE WATER SUPPLY BY THE INSTALLATION OR USE OF POTABLE WATER SUPPLY WELLS OR BY ANY OTHER METHOD WITHIN CERTAIN AREAS IN THE COUNTY OF SANGAMON

WHEREAS, certain pr.operties in the County of Sangamon, Illinois have been used over a period of time for commercial/industrial purposes; and

WHEREAS, because of said use, concentrations of certain chemical constituents in the groundwater beneath the County of Sangamon may exceed Class I groundwater quality standards for potable resource groundwater as set forth in 35 Illinois Administrative Code 620 or Tier 1 remediation objectives as set forth in 35 Illinois Administrative Code 742; and

WHEREAS, the County of Sangamon desires to limit potential threats to human health from groundwater contamination while facilitating the redevelopment and productive use of properties that are the source of said chemical constituents;

NOW, THEREFORE, BE IT ORDAINED BY THE COUNTY BOARD OF THE COUNTY OF SANGAMON, ILLINOIS:

Section One. Use of groundwater as a potable water supply prohibited.

The use or attempt to use as a potable water supply groundwater from those areas within the County of Sangamon depicted on Figure 1, attached hereto and made a part of this ordinance, by the installation or drilling of wells or by any other method is hereby prohibited. This prohibition expressly includes the County of Sangamon.

Section Two. Penalties.

Any person violating the provisions of this ordinance shall be subject to a fine of up to \$ 500.00 for each violation. Each day constitutes a separate violation.

Section Three. Definitions.

"Person" is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, political subdivision, or any other legal entity, or their legal representatives, agents or assigns.

FILED

MAY 10 2013

Joe Aiello
Sangamon County Clerk

RECEIVED

MAY 10 2013

Paul Palazzolo
SANGAMON COUNTY AUDITOR

"Potable water" is any water used for human or domestic consumption, including, but not limited to, water used for drinking, bathing, swimming, washing dishes, or preparing foods.

Section Four. Repealer.

All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed insofar as they are in conflict with this ordinance.

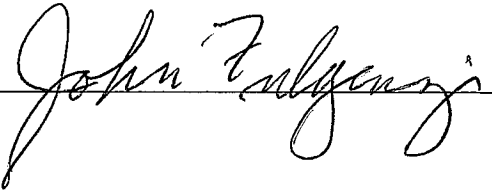
Section Five. Severability.

If any provision of this ordinance or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of the ordinance as a whole or of any portion not adjudged invalid.

Section Six. Effective date.

This ordinance shall be in full force and effect from and after its passage, approval and publication as required by law.

Respectfully Submitted,

A handwritten signature in cursive script, reading "John Fulgenzi", is written over a horizontal line.



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ONE SOUTH DEARBORN STREET
CHICAGO, IL 60603
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SHANGHAI
SINGAPORE
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June 13, 2012

BY FEDERAL EXPRESS

Mr. Tim Zahrn
County Engineer
Sangamon County
3003 Terminal Avenue
Springfield, IL 62707

RECEIVED

JUN 14 2012

Sangamon Co. Hwy.

Re: Request for Limited Groundwater Use Ordinance
BP Service Station #5167
2201 North 31st Street/Dirksen Parkway
Springfield, Illinois
LPC #1671205426-Sangamon County
LUST Incident Nos. 941260 & 960236

Dear Mr. Zahrn

I am assisting my client BP Products North America Inc. ("BP") with remediation efforts relating to a leaking underground storage tank system at a BP service station at 2201 North 31st Street/Dirksen Parkway, Springfield, Illinois. Based on sampling that BP has performed, BP's models indicate that there is potential impact to groundwater at the site, as well as in adjacent off-site areas. BP is required to address the groundwater impacts as part of the process to complete obligatory reporting and to ultimately obtain a No Further Remediation ("NFR") letter from the Illinois Environmental Protection Agency ("IEPA").

BP submitted an Corrective Action Plan Addendum ("CAP") to IEPA on June 10, 2011 (enclosed), which was approved by IEPA on October 12, 2011 (also enclosed). As discussed in the CAP, one method of achieving NFR is to use a limited groundwater ordinance as an institutional control. In this instance, Sangamon County would enact a limited groundwater ordinance that prohibits the use of groundwater in the impacted area as a potable water supply. I am requesting your input on whether the County would consider adopting an ordinance of this type.

A draft version of the limited groundwater ordinance (based on the IEPA model form at 35 Ill. Adm. Code 742, Appendix G) is enclosed. A map of the proposed area to be covered by



Mr. Tim Zahn
County Engineer
June 13, 2012
Page 2

the ordinance is attached to the draft ordinance. For your reference, the IEPA website has a database showing the various groundwater ordinances that IEPA has reviewed. Many municipalities in Illinois (including Springfield) have adopted limited groundwater ordinances, or even complete ordinances covering the entire municipality.
<http://epadata.epa.state.il.us/land/gwordinance/>

I will call you in a day or two to explain this request in more detail. I am also enclosing two extra copies of this letter (and enclosures) in the event you need to forward this request to others at the County for consideration.

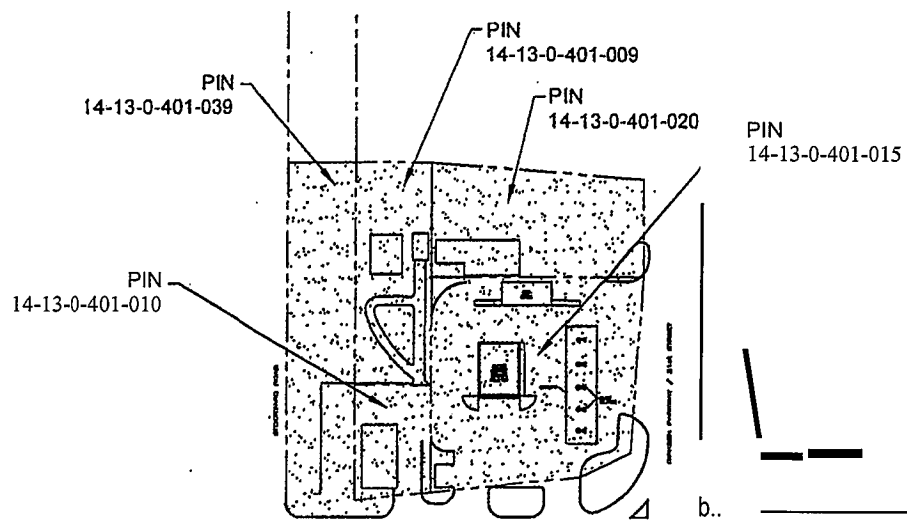
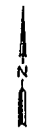
Thank you for your consideration of BP's request to enact a limited groundwater ordinance. I look forward to speaking with you soon.

Very truly yours,

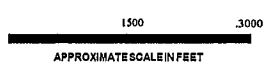
William G. Dickert

Enclosures

n



LEGEND:
 _____ PROPERTY BOUNDARY
 _____ GROUNDWATER ORDINANCE AREA



 Stmtec 446 EISENHOWER I.M.E NORTH LOMBARD, ILLINOIS 60148 PHONE: (630) 782-1680 FAX: (630) 792-2150	FOR: BP PRODUCTS NORTH AMERICA, INC. 28100 TORCH PARKWAY WARRENVILLE, ILLINOIS 60555	GROUNDWATER ORDINANCE MAP BP SERVICE STATION NO. 05167 2201 NORTH 31ST STREET SPRINGFIELD, ILLINOIS	FIGURE: 1
	JOE/ML/JL/SER: 213101020	DRAWN BY: JC	APPROVED BY:

19-6

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AUG 1 2011



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, ILLINOIS 60601 • (312) 814-6026

PAT QUINN, GOVERNOR

LISA SONNENT, INTERIM DIRECTOR

2171782-6762

CERTIFIED MAIL

OCT 12 2011

7009 2820 0001 7489 1916

BP Products North America, Inc.
Attn: Diane Diks
150 West Warrenville Road
Naperville, Illinois 60563

Re: LPC #1671205426 -- Sangamon County
Springfield/BP Service Station #5167
2201 North 31st St/Dirksen Parkway
Leaking UST Incident No. 941260 & 960236
Leaking UST Technical File

Dear Ms. Diks:

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed the Corrective Action Plan Amendment (plan) submitted for the above-referenced incident. This plan, dated June 10, 2011, was received by the Illinois EPA on June 16, 2011. Citations in this letter are from the Environmental Protection Act (Act), as amended by Public Act 92-0554 on June 24, 2002, and Public Act 96-0908 on June 8, 2010, and 35 Illinois Administrative Code (35 Ill. Adm. Code).

Pursuant to Sections 57.7(b)(2) and 57.7(c) of the Act and 35 Ill. Adm. Code 734.505(b) and 734.510(a), the plan is approved. The activities proposed in the plan are appropriate to demonstrate compliance with Title XVI of the Act. Please note that all activities associated with the remediation of this release proposed in the plan must be executed in accordance with all applicable regulatory and statutory requirements, including compliance with the proper permits.

In addition, the budget is rejected for the reason(s) listed below (Sections 57.7(b)(3) and 57.7(c)(4) of the Act and 35 Ill. Adm. Code 734.505(b) and 734.510(b)).

NOTE: The plan proposes activities that are technically acceptable. However, this letter does not constitute Illinois EPA approval of any costs incurred during the completion of such activities. For the purpose of payment from the Underground Storage Tank Fund, some of the activities may exceed those necessary to meet the minimum requirements of the Act and regulations. Owners and operators are advised that they may not be entitled to full payment for this reason. The Illinois EPA will review your complete request for partial or final payment from the Fund after it is submitted to the Illinois EPA.

While it is technically acceptable that these activities be performed, payment from the Fund is not approved for lack of an approved budget. (No budget was submitted.)

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Pursuant to Sections 57.7(b)(5) and 57.12(c) and (d) of the Act and 35 Ill. Adm. Code 734.100 and 734.125, the Illinois EPA requires that a Corrective Action Completion Report that achieves compliance with applicable remediation objectives be submitted within 30 days after completion of the plan to:

Illinois Environmental Protection Agency
Bureau of Land- #24
Leaking Underground Storage Tank Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276

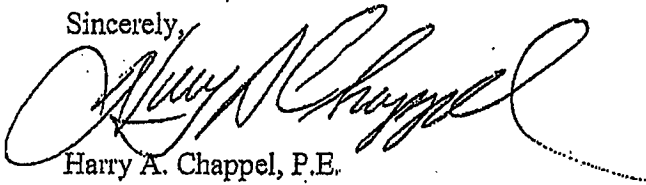
Please submit all correspondence in duplicate and include the Re: block shown at the beginning of this letter.

If within four years after the approval of this plan, compliance with the applicable remediation objectives has not been achieved and a Corrective Action Completion Report has not been submitted, the Illinois EPA requires the submission of a status report pursuant to Section 57.7(b)(6) of the Act.

Please be advised that, pursuant to Public Act 96-0908, effective June 8, 2010, all releases of petroleum from USTs are subject to Title XVI of the Act, as amended by Public Act 92-0554 on June 24, 2002, and Public Act 96-0908 on June 8, 2010, and 35 Ill. Adm. Code 734. The regulations at 35 Ill. Adm. Code 732 no longer exist, and the only releases subject to 35 Ill. Adm. Code 731 are those from hazardous substance USTs.

If you have any questions or need further assistance, please contact Jay F. Gaydosh at 217-785-0231.

Sincerely,



Harry A. Chappel, P.E.
Unit Manager
Leaking Underground Storage Tank Section
Division of Remediation Management
Bureau of Land

HAC:JFG:jab\

cc: Stantec Consulting Corporation
BOL File

Atlantic Richfield Company

160 W. Warrenville Road
Mail Code 200...1E
Naperville, Illinois 60563
Phone: (630) 420-5537
Fax: (630) 420-3738
E-Mail: Diane.Diks@bp.com

June 10, 2011

FEDEX 3 b7b q0q1

Mr. Jay Gaydosh
Project Manager
Leaking Underground Storage Tank Section
Division of Remediation Management
Bureau of Land
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

RE: Corrective Action Plan Addendum
LPC#1671205426- Sangamon County
Springfield / BP Service Station #5167
2201 North 31st St./ Dirksen Parkway
LUST Incident Nos. 941260 & 960236
LUST Technical File

Dear Mr. Gaydosh:

BP Products North America, Inc. (BP) is submitting the Corrective Action Plan Addendum (CAPA) for the above referenced property to the Illinois Environmental Protection Agency. This CAPA was completed by Stantec Consulting Corporation (Stantec) on behalf of BP.

Should you have any questions or require additional information regarding this document, please do not hesitate to contact me at (630) 420-5537.

Sincerely,
*Diane M. Diks, On Behalf of
BP Products North America, Inc.*

Diane Diks
On Behalf of BP Products North America, Inc.

Attachment
cc: Stantec

CORRECTIVE ACTION PLAN ADDENDUM

LPC No. 1671205426
BP Service Station # 5167
2201 North 31st Street (Dirksen Parkway)
Springfield, Sangamon County, Illinois
LUST Incident Nos. 941260 & 960236

Prepared for:

BP Products North America Inc.
28100 Torch Parkway, Mail Code 2S
Warrenville, Illinois 60555

Prepared by:

Stantec Consulting Corporation
446 Eisenhower Lane North
Lombard, Illinois 60148

Prepared By: Christopher
Kocka, P.G. Associate
Geologist

Reviewed By: Luisa
Price Associate
Scientist

Project Contact:
Luisa Price
Associate Scientist

June 15, 2011

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- Appendix I IEPA Input Parameter Sheets

1912

Corrective Action Plan Addendum
BP SS# 5167
LUST Incident Nos. 941260 & 960236

Illinois Environmental Protection Agency Leaking
Underground Storage Tank Program
Corrective Action Plan

A. SITE IDENTIFICATION

IEMA Incident#: 941260 & 960236 IEPA LPC #: ~~137-205-26~~

Site Name: BP Service Station #5167

Site Address (Not a P.O. Box): 2201 North 31st Street (Dirksen Parkway)

City: Springfield County: Sangamon Zip Code: 62702 _ _ _ _

Leaking UST Technical File

B. SITE INFORMATION

- 1. Will the owner/operator seek reimbursement from the Underground Storage Tank Fund? Yes [8J] No O
- 2. If yes, is the budget attached? Yes D No [gJ]
- 3. Is this an amended plan? Yes [g] No D
- 4. Identify the material(s) released: Unleaded Gasoline and Used Oil
- 5. This Corrective Action Plan is being submitted pursuant to

a. 35 Ill. Adm. Code 731.166 D

The material released was:

-petroleum D

-hazardous substance (see Environmental D

Protection Act Section 3.215) D

b. 35 Ill. Adm. Code 732.404

c. 35 Ill. Adm. Code 734.335 D

C. PROPOSED METHODS OF REMEDIATION

Soil: Constituents of Concern (COCs) include benzene, toluene, ethylbenzene, total xylenes (BTEX) and Polynuclear Aromatic Hydrocarbons (PNAs). These COCs were addressed through remediation objectives (ROs) derived from 35 Illinois Administrative Code 742 - Tiered Approach to Corrective Action Objectives (TACO) and implementation of institutional controls, and sulfate application activities.

1. Groundwater: COCs (BTEX & PNAs) were addressed through ROs derived from TACO, the implementation of institutional controls, and application of sulfate solution to the groundwater.

D. SOIL AND GROUNDWATER INVESTIGATION RESULTS

1. Description of investigation activities performed to define the extent of soil and/or groundwater contamination
2. Analytical results, chain of custody forms, and laboratory certifications
3. Tables comparing analytical results to applicable remediation objectives
4. Boring logs
5. Monitoring well logs
6. Site maps meeting the requirements of 35 Ill. Adm. Code 732.110(a) or 734.440 and showing:
 - a. Soil sample locations
 - b. Monitoring well locations
 - c. Plumes of soil and groundwater contamination

For historical soil and groundwater information from February 1996 through April 2004, please refer to the Corrective Action Plans (CAPs) dated October 12, 1998, June 30, 1999, and June 11, 2004. A Status Report dated August 28, 2007 included summaries of sulfate applications.

Groundwater samples were collected on a periodic basis from site monitoring wells from March 1989 through March 2009 (Table 1). Prior to sampling, field personnel gauged the depth to groundwater with an electronic oil/water interface probe. The depth-to-water measurements were measured from the north side of the casing. The interface probe was decontaminated between each monitoring well using alconox with a de-ionized water rinse. After water levels were measured, each well was purged by bailing three to five well volumes from the well. Dedicated disposable high density polyethylene (HOPE) bailers were used to purge the well. Groundwater samples were collected using nitrile gloves and placed in laboratory provided glassware. Samples were then stored in an ice-filled cooler. Groundwater samples were submitted to Pace Analytical Services, Inc. (Pace) for the analysis of BTEX and PNAs via Methods 8021 and 8270, respectively.

On March 18, 2009 groundwater samples were collected from monitoring wells MW-21R; MW-24, MW-25, MW-26, MW-27, MW-28, MW-31, MW-32, MW-33, and MW-35. Laboratory analytical results indicated that benzene was detected above the Tier 1, Class I groundwater remediation objective (GRO) in monitoring wells MW-21R, MW-24, MW-25, MW-26, MW-31, MW-33, and MW-35. Ethylbenzene was detected above the Tier 1, Class I GRO in monitoring wells MW-21R, MW-24, MW-25, MW-26, and MW-35. Naphthalene was detected above the Tier 1, Class I GRO in monitoring wells MW-21R, MW-24, MW-25, and MW-26.

Laboratory results for the groundwater sampling events are summarized in Table 1 and Table 2. Groundwater elevation data are summarized in Table 3. The results of the most recent sampling event are illustrated on Figure 1. The laboratory data for the sampling events are provided in Appendix A.

On July 28, 2009, five soil borings (SB-8, SB-9, SB-10, SB-11, and SB-12) were advanced on the east/northeast side of the site to confirm residual soil concentrations above Tier 1 soil remediation objectives (SROs) located above the groundwater table. Data collected from soil samples ES-01, MW-24, MW-25, SB-03, and SB-04 were replaced with SB-12, SB-10, SB-8, SB-11, and SB-10, respectively, in the exposure pathway evaluations presented in section E.13. Five soil samples were submitted to Pace Analytical Services, Inc. for analysis of BTEX via Method 5035/8260. The soil boring log is included in Appendix B.

Laboratory analytical results indicated that BTEX was not detected above the most stringent SRO. The soil analytical results are illustrated in Figures 2A and 28 and summarized on Table 4 and Table 5. The laboratory analytical reports are included in Appendix C.

E. TECHNICAL INFORMATION

- 1. Executive summary identifying the objectives of the corrective action plan and the technical approach to be utilized to meet such objectives

Service Station No. 5167 is located in Springfield, Sangamon County, Illinois. A release was reported on June 7, 1994 based on elevated groundwater BTEX concentrations in existing monitoring wells. Subsequently, Incident No. 941260 was assigned to the site. In February 1996 one 8,000 gallon and three 6,000 gallon gasoline underground storage tanks (USTs) were removed from the site. A gasoline release was reported on February 9, 2006 due to the presence of residual petroleum hydrocarbons in the UST area. Incident No. 960236 was assigned to the site. After removal of the gasoline USTs, one 550 gallon used oil UST and one 550 gallon fuel oil UST were discovered north of the main UST excavation. The used oil and fuel oil USTs were removed in March 1996 and at the request of the Office of the Illinois State Fire Marshal were included as part of Incident No. 960236. Based on the gasoline and used/fuel oil releases, COCs include BTEX and PNAs.

Site investigation activities have occurred from 1989 through 2009. Soil BTEX and PNA concentrations have been delineated to the site. Groundwater BTEX and PNA concentrations are delineated north, east and west of the site. Groundwater concentrations to the south will be addressed through institutional controls and R26 modeling. Please note that previous releases were reported at service stations located south and southeast of the site (Figure 1).

In order to address increasing/non-stable groundwater BTEX concentrations at the site, a CAP proposing the addition of sulfate to the groundwater was submitted to the IEPA on June 11, 2004. A total of nine application events occurred from July 2005 through February 2008. Results of the applications indicate overall plume stability. In order to address remaining soil and groundwater COCs above the most stringent Tier 1 ROs, an exposure pathway evaluation was conducted in accordance with TACO and is presented in section E.13.

- a. The major components (e.g., treatment, containment, removal) of the corrective action plan

The major components of the CAPA include the use of Tier 1 and Tier 2 evaluations conducted in accordance with TACO, institutional controls and the application of sulfate solution.

- b. The scope of the problems to be addressed by the proposed corrective action

Soil and groundwater BTEX and PNA concentrations above Tier 1, Class I ROs were encountered at the site.

- c. The schedule for implementation and completion of the plan

Nine sulfate applications were completed at the site between July 9, 2005 and February 8, 2008. Based on groundwater analytical results, sulfate applications are complete. Please refer to section E.3 of this report for details. A groundwater ordinance (GWO) will be used to address residual groundwater concentrations above Tier 1 ROs for the site, three properties west of the site, and one property north of the site. A Highway Authority Agreement (HAA) with the Illinois Department of Transportation (IOT) for Dirksen Parkway and Sangamon Avenue was secured on October 30, 2002 to address groundwater concentrations above Tier 1 ROs. A Corrective Action Completion Report (CACR) will be submitted to the IEPA upon execution of the GWO and the Property Owner Summary (POS) Form.

2. Identification of the remediation objectives proposed for the site

The COCs at the site include BTEX and PNAs based on an unleaded gasoline and used/fuel oil release. As a result, soil and groundwater concentrations were compared to the most stringent Tier 1 ROs for BTEX and PNAs. Following remedial activities, TACO guidelines were used to develop Tier 2 ROs as presented in section E.13.

3. A description of the remedial technologies selected

Sulfate solution was used as the remedial technology to address unstable groundwater BTEX concentrations at the site. The sulfate applications are summarized below.

- The initial sulfate application was performed on July 9, 2005. The sulfate application consisted of the following:
 - 1,721 gallons of Epsom salt solution (140,000 mg/l sulfate) were applied to IW-1 through IW-7
- The second sulfate application occurred on October 17 and 18, 2005 and consisted of the following:
 - 2,723 gallons of Epsom salt solution (140,000 mg/l sulfate) were applied to IW-1 through IW-7
- The third sulfate application occurred on July 5, 2007 and consisted of the following:

- o 1,276 gallons of Epsom salt solution (75,000 mg/l sulfate) were applied to IW-1 through IW-7
 - o 300 lbs of Epsom crystals applied to three onsite application wells
- A dry sulfate application was performed on August 22, 2007. In addition, 30-10-10 Miracle-Gro® was applied as a biological nutrient to enhance sulfate reducing conditions. The sulfate application consisted of the following:
 - o 150 lbs of Epsom crystals applied to IW-2, IW-4, IW-5, and IW-7 (15 lbs sulfate per well)
 - o 200 lbs of Epsom crystals applied to IW-1, IW-3, and IW-6 (26 lbs sulfate per well)
 - o 35 lbs of 30-10-10 Miracle-Gro® was applied to IW-1, IW-2, IW-3, IW-4, IW-5, IW-6, and IW-7 (51bs Miracle-Gro® per well)
- A dry sulfate application was performed on September 27, 2007. The sulfate application consisted of the following:
 - o 250 lbs of Epsom crystals applied to IW-4, IW-5, IW-6, and IW-7 (25 lbs sulfate per well)
 - o 225 lbs of Epsom crystals applied to JW-3 (90 lbs sulfate)
 - o 237.5 lbs of Epsom crystals applied to IW-2 (951bs sulfate)
 - o 262.5 lbs of Epsom crystals applied to IW-1 (1051bs sulfate)
- A dry sulfate application was performed on October 31, 2007. The sulfate application consisted of the following:
 - o 50 lbs of Epsom crystals applied to IW-3 (20 lbs sulfate)
 - o 162.5 lbs of Epsom crystals applied to IW-4 (651bs sulfate)
 - o 187.5 lbs of Epsom crystals applied to IW-5 (75 lbs sulfate)
 - o 200 lbs of Epsom crystals applied to JW-2 (80 lbs sulfate)
 - o 225 lbs of Epsom crystals applied to IW-1, IW-6, and IW-7 (30 lbs sulfate per well)
- A dry sulfate application was performed on December 5, 2007. The sulfate application consisted of the following:
 - o 2251bs of Epsom crystals applied to JW-6 and IW-7 (451bs sulfate per well)
 - o 200 lbs of Epsom crystals applied to IW-1, IW-2, IW-4, and IW-5 (20 lbs sulfate per well)
 - o 350 lbs of Epsom crystals applied to IW-3 (140 lbs sulfate)
- A dry sulfate application was performed on January 11, 2008. The sulfate application consisted of the following:
 - o 225 lbs of Epsom crystals applied to IW-4 (90 lbs sulfate)
 - o 250 lbs of Epsom crystals applied to IW-2, IW-3, IW-5, IW-6, and IW-7 (20 lbs sulfate per well)
 - o 275 lbs of Epsom crystals applied to JW-1 (110 lbs sulfate)

- A dry sulfate application was performed on February 8, 2008. In addition, 30-10-10 Miracle-Gro® was applied as a biological nutrient to enhance sulfate reducing conditions. The sulfate application consisted of the following:
 - o 100 lbs of Epsom crystals was applied to IW-1, IW-4, IW-5, and IW-7 (10 lbs sulfate per well)
 - o 200 lbs of Epsom crystals applied to IW-2 and IW-3 (40 lbs sulfate per well)
 - o 250 lbs of Epsom crystals applied to IW-6 (100 lbs sulfate)
 - o 35 lbs of 30-10-10 Miracle-Gro® was applied to IW-1, IW-2, IW-3, IW-4, IW-5, IW-6, and IW-7 (5 lbs Miracle-Gro® per well)

A total of approximately 24,350 lbs of Epsom crystals (9,740 lbs sulfate) were applied to the site over the nine sulfate application events in either a solid or solution form.

- a. The feasibility of implementing the remedial technologies

Please refer to the CAP dated June 11, 2004.

- b. Whether the remedial technologies will perform satisfactorily and reliably until the remediation objectives are achieved

Results of the sulfate applications indicate overall plume stability. Residual BTEX and PNA concentrations were addressed in the exposure pathway evaluation presented in section E.13.

- c. A schedule of when the technologies are expected to achieve the applicable remediation objectives

The final sulfate application was conducted on February 8, 2008. Residual BTEX and PNA concentrations are addressed through the exposure pathway evaluation presented in section E.13.

- 4. A confirmation sampling plan that describes how the effectiveness of the corrective action activities will be monitored during their implementation and after completion

Quarterly groundwater sampling events were conducted from March 1989 through March 2009. Sulfate applications were conducted from July 2005 through February 2008. The last ten quarterly groundwater monitoring events were used to evaluate the effectiveness of the sulfate applications. Monitoring wells MW-21R, MW-24, MW-25, MW-26, MW-31, MW-33, and MW-35 were selected for this evaluation since BTEX concentrations in these wells were above Tier 1, Class I ROs (Table 1). Benzene concentrations were evaluated and are presented in Appendix D. All monitoring wells except MW-21R and MW-35 indicated stable/decreasing benzene concentration trends. Although MW-21R indicated an increasing trend in the last sampling events, an overall decrease in benzene concentrations occurred from June 12, 2008 (0.646 mg/l) to March 18, 2009 (0.51 mg/l). MW 35 also indicated an increase in benzene concentrations in the last ten sampling events; however, an overall decrease in benzene concentrations occurred from January 30, 2008 (4.86 mg/l) to March 18, 2009 (1.51 mg/l). Based on results of the benzene evaluation, the highest historical concentrations from MW-21R

and MMM35 will be used in the Tier 2 evaluation in conjunction with a GWO. The most recent groundwater concentrations from the monitoring wells indicating decreasing benzene trends (MW-24, MW-25, MW-26, MW-31 and MW-33) will be used in the Tier 2 evaluation in conjunction with a GWO.

5. A description of the current and projected future use of the site

Use of the site property is anticipated to be commercial for the foreseeable future.

6. A description of engineered barriers or institutional controls that will be relied upon to achieve remediation objectives:

Based on the exposure pathway evaluations presented in section E.13, the following institutional controls are proposed for the site (Figure 3).

- Record the No Further Remediation (NFR) letter to the deed of the property specifying that the groundwater beneath the site shall not be used as a potable water supply in accordance with the proposed groundwater ordinance.
- A HM with IDOT for Dirksen Parkway and Sangamon Avenue to address groundwater conditions beneath the roadway was submitted to the IEPA on October 30, 2002 (Figure 3).
- A groundwater ordinance prohibiting the use of groundwater as a potable water supply is proposed for the following properties:
 - o PIN 14-13-401-015, site
 - o PIN 14-13-401-020, 1st property north of site
 - o PIN 14-13-401-009, 1st property northwest of site
 - o PIN14--13-401-010, 1st property southwest of site
 - o PIN14-13-401-039, 2nd property west of site

In addition, any soil and/or groundwater with residual petroleum constituents removed, excavated, or disturbed from the site, will be handled in accordance with all applicable laws and regulations.

a. an assessment of their long-term reliability

The HM and GWO will be associated with the NFR letter, which will be recorded to the deed of the site property to ensure maintenance of these institutional controls.

b. operating and maintenance plans

Not applicable.

c. maps showing area covered by barriers and institutional controls

Refer to Figure 3 for the institutional controls.

7. The water supply well survey:

- a. Map(s) showing locations of community water supply wells and other potable wells and the setback zone for each well

Stantec Consulting Corporation (Stantec) consulted the Illinois State Water Survey (ISWS) and the Illinois State Geological Survey (ISGS) databases to obtain information regarding water wells within 2,500 feet of the site. The ISGS and ISWS water well databases include information about private, community, and industrial/commercial wells that have been registered with the state. According to the ISWS and ISGS databases, fifteen wells are located within 2,500 feet of the site. The closest well is located approximately 460 feet south of the site. One well (Cargill Grain Corp) is shown to be approximately 130 feet southwest of the site. However, this well was only a test hole and never completed as a water supply well. In addition, three of the wells are listed as either monitoring wells or dry. As a result, no active private or public water supply wells are located within the minimum designated setback zones of 200 and 400 feet, respectively. Copies of the database searches are included in Appendix E. Additional water well information is provided in the CAP dated October 12, 1998.

Stantec also consulted the IEPA Source Water Assessment Program (SWAP) database to identify water supply wells, as well as any wellhead protection areas, within a 2,500 foot radius of the site. The SWAP water well database includes information about private, community, and industrial water wells that have been registered with the state. According to the SWAP records, fifteen water supply wells are located within 2,500 feet of the site. These results are consistent with the ISGS and ISWS database searches above. In addition, the subject site is not located within any wellhead protection areas, wellhead maximum setback zones, or regulated recharge areas. The SWAP database output sheets are provided in Appendix E.

Mr. Jerry Dalsin, Private Water Program Manager for the Illinois Department of Public Health, was contacted regarding water wells located within 2,500 feet of the site. Mr. Dalsin stated that all information regarding water wells registered with the state is available through the ISWS and IEPA SWAP databases (see above).

The Sangamon County Health Department was contacted regarding water wells located within 2,500 feet of the site. The Health Department stated that information regarding water wells registered with Sangamon County is available through the ISWS database (see above).

The City of Springfield Public Works Department was contacted for information regarding water wells located within 2,500 feet of the site. The City confirmed that properties within this area are supplied with municipal water. The City obtains water from Springfield Lake; which is approximately 5 miles south of the site.

- b. Map(s) showing the regulated recharge areas and wellhead protection areas

Please refer to Appendix E.

- c. Map(s) showing the current extent of the groundwater contamination exceeding the most stringent Tier 1 remediation objectives

Please refer to Figure 1 -Groundwater Assessment Map.

- d. Map(s) showing the modeled extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives

Please refer to Figure 4.

- e. Tables listing the setback zone for each community water supply well and other potable water supply wells

Please refer to the Appendix E.

- f. A narrative identifying each entity contacted to identify potable water supply wells, the name and title of each person contacted, and any field observations associated with any wells identified

Please refer to the section E.7.a of this report.

- g. A certification from a licensed Professional Engineer or Licensed Professional Geologist that states the survey was conducted in accordance with the requirements and that the documentation submitted includes information obtained as a result of the survey (certification of this plan satisfies this requirement)

Please refer to the Professional Geologist Certification in the Signatures section of this report.

8. Appendices

- a. References and data sources report that are organized

- 45-Day Report dated July 14, 1994
- UST Closure Report dated May 14, 1996
- Site Classification Completion Report February 27, 1997
- CAP dated October 12, 1998
- Response letter dated June 30, 1999
- Corrective Action Completion Report (CACR) dated July 6, 1999
- CAP dated June 11, 2004
- Sulfate Status Report dated August 28, 2007

- b. Field logs, well logs, and reports of laboratory analysis

Please refer to E.8.a and Appendix B of this report.

- 9. Site inap(s) meeting the requirements of 35 Ill. Adm. Code 732.110(a) or 734.440

Please refer to the references listed above and the Figures section of this CAPA.

- 10. Engineering design specifications, diagrams, schematics, calculations, manufacturer's specifications, etc.

Not applicable.

- 11. A description of bench/pilot studies

Please refer to the CAP dated June 11, 2004.

- 12. Cost comparison between proposed method of remediation and other methods of remediation

Not applicable.

- 13. For the proposed Tier 2 or Tier 3 remediation objectives, provide the following:

- a. The equations used

Where soil and/or groundwater BTEX concentrations did not meet the applicable Tier 1, Class I RO(s), a Tier 2 evaluation was conducted to develop site-specific ROs at the site. A Tier 2 evaluation of the soil inhalation exposure pathway and the soil and groundwater components of the groundwater ingestion exposure pathways were conducted through the use of the following equations:

- Soil Inhalation: Equations S6, S6, and S7
- Groundwater Component of Groundwater Ingestion: Equation R26
- Soil Component of Groundwater Ingestion: Equations S28 and R26

Since soil concentrations were below Tier 1 soil ingestion ROs, no further evaluation of the soil ingestion exposure pathway is necessary.

- b. A discussion of how input variables were determined

Input parameters were selected based on site-specific soil and groundwater characteristics as well as the nature and extent of their conditions. TACO values were also used in the Tier 2 equations. Refer to section E.13.d for a detailed discussion.

Hydraulic Conductivity.

Stantec proposes to use the geometric mean of hydraulic conductivity values calculated at the site for S28 and R26 modeling purposes. Slug tests were

performed on June 23, 2005 at monitoring wells MW-24 (2.446×10^{-4} centimeters per second; cm/s); MW-26 (5.104×10^{-4} cm/s); and MW-32 (3.877×10^{-4} cm/s). The geometric mean of the hydraulic conductivities is 3.644×10^{-4} cm/s. Copies of the hydraulic conductivity tests are included in Appendix F.

Monitoring wells MW-24 and MW-26 are located along the perimeters of the site; around the former source area. Monitoring well MW-32 is located offsite, to the west. Monitoring wells MW-24 and MW-26 were installed at 13.5 feet bgs and MW-32 was installed at 13 feet bgs. The three wells were constructed with 10 foot screens from approximately 3 to 13.5 feet bgs in MW-24 and MW-26; and from approximately 3 to 13 feet in MW-32. Silty clay and sandy clay were encountered onsite and offsite.

The Domenico model, i.e. Equation R26, calls for a geometric mean of hydraulic conductivities from data gathered on the site under consideration.. Using only one of the available data points, the so-called "most conservative value" is not likely to give a correct picture of the dispersion of the contaminant plume. The "most conservative value" would be the fastest hydraulic conductivity on site. As groundwater travels through the formation, it seeks the most porous and permeable route, however the rate of travel will be limited by the least permeable and porous media that is between the source and receptor. Therefore, the actual conductivity of the media is neither the fastest nor the slowest rate, but somewhere between the extremes. After confirming that the test method and conditions were uniform, taking the geometric mean of the test results gives equal weight to each data point, ensuring that all tests are equally represented in the final result. In the present case the wells have similar construction. They were all tested using the same method, one at a time, on the same day. Based on this information it is appropriate to apply all three slug tests in calculating the geometric mean hydraulic conductivity value of 3.644×10^{-4} cm/s for the site. Please refer to Appendix F for slug test data and Appendix B well boring logs/construction details. A Geologic Cross Section was included in the SCCR dated February 27, 1997.

Dry Bulk Density

A soil sample (SB-6 10-12') was collected on April 1, 2004 and sent to Schleede Hampton Associates Inc for laboratory analysis of moisture, specific gravity, and bulk density via ASTM 2216, ASTM 854 and ASTM 2937, respectively. A copy of the analytical report is included in Appendix G. Data from the laboratory report was used to calculate dry bulk density using the following equation.

$$Pb \text{ (dry)} = Pb \text{ (wet)} / 1 + (\% \text{moisture})$$

The site specific dry bulk density is calculated to be 1.54 kilogram per liter (Kg/L).

- c. Map(s) depicting distances used in the equations

Please refer to Figure 2B for the measured source length parallel to groundwater flow used in Equation S28. Please refer to Figure 1 for the source width perpendicular to groundwater flow used in Equation R26.

d. Calculations

Soil Inhalation Exposure Pathway Evaluation and Calculations

Tier 1 Evaluation

Soil samples collected at the site were compared to Tier 1 soil inhalation ROs for BTEX and naphthalene. Note that soil samples ESM01, MMM24, MMM25, SB-03, and SB-04 were replaced with SB-12, SBM10, SB-8, SB-11, and SB-10, respectively. Soil samples ES-01, MW-24, MW-25, SB-03, and SB-04 will not be evaluated further. The following samples had constituent concentrations above the Tier 1 soil inhalation ROs.

- Benzene Residential: Gas UST Area#1 South Well (6), Gas UST Area#1 West Well North Half (6), Gas UST Area#2 North Well (6), Gas UST Area#2 South Well (6), Gas UST Area#2 East Well (6), FH01 (46), FH02(46), FH05 (2-4), SB06 (2-4)
- Benzene Commercial: Gas UST Area#1 South Well (6), Gas UST Area#2 North Well (6), Gas UST Area#2 South Well (6), FH01 (46), FH02 (46), FH05 (2-4)
- Benzene Construction Worker: Gas UST Area#1 South Well (6), Gas UST Area #2 North Well (6), Gas UST Area#2 South Well (6), FH02 (46), FH05 (2-4)
- Toluene Construction Worker: Gas UST Area#2 South Well (6)
- Total Xylenes Construction Worker: Gas UST Area#1 North Well East Half (6), Gas UST Area#1 South Well (6), Gas UST Area#1 West Well North Half (6), Gas UST Area#1 East Well (6), Gas UST Area#1 West Well South Half (6), Gas UST Area#2 North Well (6), Gas UST Area#2 South Well (6), Gas UST Area#2 East Well (6), Gas UST Area#2 West Well (6), FH01 (46), FH02 (4-6), FH05 (2-4), SB06 (2-4)

Tier 2 Evaluation

In order to address the soil concentrations above Tier 1 ROs, Equations S5, S6, and S-7 from 35 IAC 742 were used to calculate site-specific Tier 2 ROs for the soil inhalation exposure pathway for benzene, toluene, and total xylenes. The site-specific Tier 2 ROs are listed below.

PARAMETERS USED IN THE SOLUTION OF EQUATIONS S5, S6 and S7		
Parameter	Value	Description
Averaging Time for Carcinogens (ATe)	70yr	TACO value
Depth of Source (ds)	1.52 meters (5 feet)	Vertical thickness of soil conditions based on average depth to groundwater

19-24

PARAMETERS USED IN THE SOLUTION OF EQUATIONS 85, S6 and S7		
Parameter	Value	Description
Exposure Duration for Inhalation (ED)	residential = 30 yr commercial = 25 yr canst. worker = 1 Y ^S	TACO value
Exposure Frequency (EF)	residential = 350 d/yr commercial = 250 dy/yr canst. worker = 30 dy/yr	TACO value
Dry Soil Bulk Density (Pb)	1.54 kg/L	Site specific (Appendix G)
Q/C	97.78 g/mL-s per kg/m ³	TACO value for 0.5 acre source
Exposure Interval for Mass Limit Volatilization Factor (TM-d)	30 yr	TACO value
Target Cancer Risk (TR)	10 ⁻⁶	TACO value
Inhalation Unit Risk Factor (URF)	benzene = 7.8x10 ⁻⁶ (mg/m ³) ⁻¹	IEPA (IRIS/HEAST)
Averaging Time for Noncarcinogens (AT)	constr. worker = 0.115 yr	TACO Value
Inhalation Reference Concentration (RfC)	xylenes = 1x10 ⁻¹ mg/m ³ toluene = 4x10 ⁻¹ mg/m ³	IEPA (IRJS/HEAST)
Target Hazard Quotient (THQ)	1	TACO value

Result	Value
Residential Inhalation RO for benzene	12.31 mg/l _s g
Commercial Inhalation RO for benzene	20.69 mg/kg
Construction Worker Inhalation RO for benzene	431.02 mg/kg
Construction Worker Inhalation RO for toluene	650 m _g /kg*
Construction Worker Inhalation RO for total xylenes	320 mg/kg*

*The calculated RO for the constituent exceeded the constituent's soil saturation limit (C_{sat}). Therefore, C_{sat} was given as the RO.

Based on the results of the calculations, no soil samples were above the calculated Tier 2 ROs for benzene, toluene, or total xylenes. Further evaluation of the soil inhalation pathway is not required. Calculation spreadsheets are included in Appendix H, and IEPA input parameter forms are provided in Appendix I.

Groundwater Component of the Groundwater Ingestion Exposure Pathway Evaluation and Calculations

Tier 1 Evaluation:

The most recent groundwater samples collected at the site on March 18, 2009 (MW-21R, MW-24, MW-25, MW-26, MW-27, MW-28, MW-31, MW-32, MW-33, MW-35), Mary 24, 2006 (MW-19 and MW-20), and December 18, 2008 (MW-30) were compared to Tier 1, Class I GROs for BTEX and naphthalene. The following samples indicated concentrations above the Tier 1, Class I groundwater RO for the listed constituent.

- Benzene: MW-21R, MW-24, MW-25, MW-26, MW-31, MW-33, MW-35
- Ethylbenzene: MW-21R, MW-24, MW-25, MW-26, MW-35
- Naphthalene: MW-21R, MW-24, MW-25, MW-26, MW-35

Tier 2 Evaluation

Using Equation R26, the extent of groundwater conditions was predicted for groundwater concentrations above Tier 1, Class I groundwater ROs.

The following parameters were used in calculating Equation R26:

PARAMETERS FOR EQUATION R26		
Source Area Concentration (Cs)	Benzene MW-21R - 1.1 mg/L* MW-24 - 1.65 mg/L MW-25 - 0.2 mg/L MW-26 - 5.65 mg/L MW-31 - 0.0091 mg/L MW-33 - 0.062 mg/L MW-35 - 4.86 mg/L* Ethylbenzene: MW-21R - 1.2 mg/L* MW-24 - 1.35 mg/L MW-25 - 0.842 mg/L MW-26 - 2.23 mg/L MW-35 - 2 mg/L* Naphthalene: MW-21R - 0.179 mg/L* MW-24 - 0.364 mg/L MW-25 - 0.226 mg/L MW-26 - 0.295 mg/L MW-35 - 0.548 mg/L*	Concentrations above Tier I, Class I ROs
First Order Degradation Constant (A)	Benzene 0.0009/day Ethylbenzene 0.003/day Naphthalene 0.0027/day	TACO default value
Aquifer Hydraulic Conductivity (K)	31.484 em/day 3.644 x 10 ⁻⁴ em/sec)	Geometric Mean conductivity of MW-24, MW-26, and MW-32

Hydraulic Gradient (i)	0.0062 em/em	Based on groundwater elevation measurements from MW-21R, MW-24, and MW-26 gauged on March 18, 2009
Total Soil Porosity (8r)	0.44 cm ³ /cm ³	Site specific via laboratory analysis
Source Width (Horizontal) (Sw)	3511.3 em {378 feet}	The distance across the estimated extent of groundwater conditions perpendicular to groundwater flow measured between two clean points (MW-20 and MW-23)
Source Width (Vertical) (Sd)	199.95 em (6.56 feet)	Default value for the mixing zone thickness

• Highest historical concentration was evaluated (refer to Section E.4)

The solution of Equation R26 produced the following results:

Predicted distance from source points at which groundwater concentrations will meet Tier 1, Class I groundwater ROs	Benzene
	MW-21R - 107.75 feet MW-24 - 117.45 feet MW-25 - 69.9 feet MW-26 - 148.6 feet MW-31 - 10.25 feet MW-33 - 46.75 feet MW-35 - 144.65 feet
	Ethylbenzene
	MW-21R - 2.759 feet MW-24 - 3.399 feet MW-25 - 0.91 feet MW-26 - 6.27 feet MW-35 - 6.63 feet
	Naphthalene:
	MW-21R - 1.34 feet MW-24 - 5.65 feet MW-25 - 2.7 feet MW-26 - 4.3 feet MW-35 - 8.38 feet

Based on the results of the R26 calculation and a predominant southeasterly groundwater flow, the modeled extent of groundwater conditions extends off-site beneath the first property north of the site, the first two properties northwest and southwest of the site, Dirksen Parkway and Sangamon Avenue (Figure 4).

Groundwater conditions have been physically delineated to the north by MW-23 and MW-30; to the east by MW-29 and MW-22; to the west by MW-19, MW-20, MW-27, MW-28, and MW-32. Groundwater to the south has been delineated through R26 modeling in conjunction with the proposed GWO and HAA for Sangamon Avenue and Dirksen Parkway. Note that the historic high benzene concentrations from MW-21R and MW-35 were used as conservative values in the R26 calculations. Calculation spreadsheets are provided in **Appendix** Hand IEPA input parameter sheets are located in **Appendix I**.

In order to address groundwater conditions beneath the site, the first property north of the site, and the first two properties northwest and southwest of the site and second property west of the site, a GWO prohibiting the use of groundwater as a potable water supply is prohibited. A HM with IDOT for Dirksen Parkway and Sangamon Avenue was secured on October 30, 2002 to address groundwater conditions to the east and south of the site. Based on approval and implementation of the GWO, further evaluation of the groundwater component of the groundwater ingestion exposure pathway is not required.

Soil Component of the Groundwater Ingestion Exposure Pathway Evaluation and Calculations

Tier 1 Evaluation

Soil samples collected at the site were compared to Tier 1, Class I Soil Component SROs. The following samples had constituent concentrations above the Tier 1, Class I soil RO:

- Benzene: Gas UST #1 Floor (12), Gas UST #2 Floor (12), Gas UST #3 Floor (12), Gas UST Area #1 North Wall East Half (6'), Gas UST Area #1 North Wall West Half (6'), Gas UST Area #1 South Wall (6'), Gas UST Area #1 East Wall (6'), Gas UST Area #1 West Wall South Half (6'), Gas UST Area #1 West Wall North Half (6'), Gas UST #4 Floor (12'), Gas UST Area #2 North Wall (6'), Gas UST Area #2 South Wall (6'), Gas UST Area #2 East Wall (6'), Gas UST Area #2 West Wall (6'), Pump Island #2 (3'), Old Pump Island #1 (6'), Old Product Line #1 (3'), PH-01 (4-6'), PH-02 (4-6'), PH-05 (2-4'), SB-05 (2-4'), SB-06 (2-4'), SB-07 (0-2'), MW-35 (2-4')
- Toluene: Gas UST Area #2 North Wall (6'), Gas UST Area #2 South Wall (6'), Gas UST Area #2 East Wall (6'), PH-05 (2-4')
- Ethylbenzene: Gas UST Area #2 South Wall (6'), PH-02 (4-6'), PH-05 (2-4'), SB-06 (2-4')
- Total Xylenes: Gas UST Area #2 South Wall (6'), PH-05 (2-4')

Tier 2 Evaluation

In order to address soil concentrations above Tier 1, Class I ROs, equation S28 from 35 IAC 742 was used to calculate site-specific Tier 2 ROs for the soil component of the groundwater ingestion exposure pathway for BTEX. The site-specific Tier 2 ROs are listed below.

PARAMETERS USED IN THE SOLUTION OF EQUATION S28		
Parameter	Value	Description
Tier 1, Class I groundwater RO	Benzene 0.005 mg/L Toluene 1 mg/L Ethylbenzene 0.7 mg/L Total es 10	TACO value
Source Length Parallel to Groundwater Flow (L)	123.1 meters (404 feet)	The distance across the estimated extent of soil conditions parallel to groundwater flow measured between two clean points (MW-22 and MW-27)
Infiltration Rate for Equation S28	0.18 m/yr	TACO default
Infiltration Rate	0.3 m/yr	TACO default
Aquifer Thickness (da)	3 meters	Approximate thickness of the portion of aquifer evaluated at the site
Depth of Source (ds)	1.52 meters (5 feet)	Vertical thickness of soil conditions above the groundwater table
Exposure Duration	70 years	TACO default
Mixing Zone Depth	2 meters	TACO value
<u>Dry Soil</u>		<u>(Appendix G)</u>
Benzene	mg/kg	
Gas UST #1 Floor	0.29	
Gas UST #2 Floor	0.14	
Gas UST #3 Floor	0.18	
Gas UST Area #1 North Wall East Half	<0.5	
Gas UST Area #1 North Wall West Half	0.15	
Gas UST Area #1 South Wall	<2.5	
Gas UST Area #1 East Wall	<0.5	Concentrations above Tier I, Class I ROs
Gas UST Area #1 West Wall South Half	0.5	
Gas UST Area #1 West Wall North Half	1.2	
Gas UST #4 Floor	0.57	
Gas UST Area #2 North Wall	3.3	
Gas UST Area #2 South Wall	10	
Gas UST Area #2 East Wall	1.4	
Gas UST Area #2 West Wall	<0.5	

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Pump Island #2	<0.05
Old Pump Island #1	<0.5
Old Product Line #1	<0.05
PH-01	1.84
PH-02	7.01
PH-05	2.64
SB-05	<0.13
SB-06	1.5
SB-07	<0.13
MW-35	<0.13
Toluene	
Gas UST Area #2 North Wall	31
Gas UST Area #2 South Wall	100
Gas UST Area #2 East Wall	13
PH-05	18.5
Ethylbenzene	
Gas UST Area #2 South Wall	30
PH-02	24.8
PH-05	36.3
SB-0.6	14
Total Xylenes	
Gas UST Area #2 South Wall	180
PH-05	154

The solution of Equation S28 using the above parameters achieved the following results:

RESULTS OF EQUATION S28	
Sample Location	Result (mg/L)
Benzene	
Gas UST #1 Floor	0.00269
Gas UST #2 Floor	0.0013
Gas UST #3 Floor	0.00167
Gas UST Area #1 North Wall East Half	0.00464
Gas UST Area #1 North Wall West Half	0.00139
Gas UST Area #1 South Wall	0.02322
Gas UST Area #1 East Wall	0.00464
Gas UST Area #1 West Wall South Half	0.00464
Gas UST Area #1 West Wall North Half	0.01115
Gas UST #4 Floor	0.00529
Gas UST Area #2 North Wall	0.03065
Gas UST Area #2 South Wall	0.09289
Gas UST Area #2 East Wall	0.013
Gas UST Area #2 West Wall	0.00464
Pump Island #2	0.00046
Old Pump Island #1	0.00464

RESULTS OF EQUATION S28	
Sample Location	Result (mg/L)
Old Product Line #1	0.00046
PH-01	0.01709
PH-02	0.06512
PH-05	0.02452
SB-05	0.00121
SB-06	0.01393
SB-07	0.00121
MW-35	0.00121
Toluene	
Gas UST Area #2 North Wall	0.28796
Gas UST Area #2 South Wall	0.92889
Gas UST Area #2 East Wall	0.12076
PH-05	0.17184
Ethybenzene	
Gas UST Area #2 South Wall	0.27867
PH-02	0.23036
PH-05	0.33719
SB-06	0.13004
Total Xylenes	
Gas UST Area #2 South Wall	1.672
PH-05	1.43049

Values in **BOLD** were determined to be above the IEPA Tier 1, Class I ROs

Calculated groundwater concentrations above the Tier 1, Class I ROs were then used as source concentrations in Equation R26 to estimate the extent of groundwater conditions from these source concentrations. Equation R26 was solved using the parameters given in the groundwater component of the groundwater ingestion exposure pathway presented previously.

The predicted extent of groundwater conditions was calculated as follows.

Benzene	
Predicted distance from source at which groundwater concentrations will meet Tier 1, Class I groundwater ROs	Gas UST Area #1 South Wall (28.2')
	Gas UST Area #1 West Wall North Half (14')
	Gas UST #4 Floor (0.93')
	Gas UST Area #2 North Wall (33.5')
	Gas UST Area #2 South Wall (54.5')
	Gas UST Area #2 East Wall (61.15')
	PH-01 (22.25')
	PH-02 (47.7')
PH-05 (29.25')	
SB-06 (18.25')	

Based on the results of Equations S28 and R26 and the Tier 1, Class I ROs for BTEX, the modeled extent of soil to groundwater migration, assuming a predominant

southeasterly groundwater flow, extends off-site beneath the site, but remains in the rights of way of Dirksen Parkway and Sangamon Avenue (Figure 4). Physical delineation of soil conditions has been completed to the north by SB-8, SB-9 and MW-23; to the east by MW-26, PH-3, and PH-4; to the south by SB-1, OSB-2, MW-21, and MW-22; and to the west by SP-10, PH-6, and SB-11. Soil analytical data are presented in Table 4 and Table 5, calculation spreadsheets are provided in Appendix Hand IEPA input parameter forms are included in Appendix I.

In order to address soil and groundwater conditions beneath the site, a GWO prohibiting the use of groundwater as a potable water supply is proposed. A HAA with IOOT for Dirksen Parkway and Sangamon Avenue was secured to address soil and groundwater conditions beneath the roadway to the east and south of the site (Figure 3). Based on approval and implementation of these institutional controls, further evaluation of the soil component of the groundwater ingestion exposure pathway is not required.

14. Provide documentation to demonstrate the following for alternative technologies:

Not applicable.

- a. The proposed alternative technology has a significant likelihood of successfully achieving compliance with all applicable regulations and remediation objectives
- b. The proposed alternative technology will not adversely affect human health and safety of the environment
- c. The owner or operator will obtain all Illinois EPA permits necessary to legally authorize use of alternative technology
- d. The owner operator will implement a program to monitor whether the requirements of subsection 14(a) have been met
- e. Within one year from the date of the Illinois EPA approval, the owner or operator will provide to the Illinois EPA monitoring program results establishing whether the proposed alternative technology will successfully achieve compliance with the requirements of subsection 14(a)
- f. Demonstration that the cost of alternative technology will not exceed the cost of conventional technology as is not substantially higher than at least two other alternative technologies, if available and technically feasible

F. EXPOSURE PATHWAY EXCLUSION

1. A description of the tests to be performed in determining whether the following requirement will be met:

The soil samples collected at the site meet the requirements listed below.

- a. Attenuation capacity of the soil will not be exceeded for any of the organic contaminants
- b. Soil saturation limit will not be exceeded for any of the organic contaminants
- c. Contaminated soils do not exhibit any of the reactivity characteristics of hazardous waste per 35 Ill. Adm. Code 721.123
- d. Contaminated soils do not exhibit a pH ≤ 2.0 or ≥ 12.5

- e. Contaminated soils which contain arsenic, barium, cadmium, chromium, lead, mercury, or selenium (or their associated salts) do not exhibit any of the toxicity characteristics of hazardous waste per 35111. Adm. Code 721.124
2. A discussion of how many exposure pathways are to be excluded .

Soil Ingestion Exposure Pathway

Since soil concentrations were below Tier 1 soil ingestion ROs, no further evaluation of the soil ingestion exposure pathway is necessary.

Soil Inhalation Exposure Pathway

Refer to section E.13.d for the Tier 1 and Tier 2 evaluations of the soil inhalation exposure pathway. Based on the results of the calculations, no soil samples were above the calculated Tier 2 ROs for benzene, toluene, or total xylenes. Further evaluation of the soil inhalation pathway is not required.

Groundwater Component of the Groundwater Ingestion Exposure Pathway

Refer to section E.13.d for the Tier 1 and Tier 2 evaluations of the groundwater component of the groundwater ingestion exposure pathway. Based on the results of the R26 calculation and a predominant southeasterly groundwater flow, the modeled extent of groundwater conditions extends off-site beneath the first property north of the site, the first two properties northwest and southwest of the site, the second property west of the site, Dirksen Parkway and Sangamon Avenue (Figure 4). In order to address groundwater conditions beneath the site and adjacent properties, a GWO is proposed. A HAA for Dirksen Parkway and Sangamon Avenue was secured on October 30, 2002 to address groundwater conditions beneath the roadways east and south of the site (Figure 3). Based on approval and implementation of these institutional controls, further evaluation of the groundwater component of the groundwater ingestion exposure pathway is not required.

Soil Component of the Groundwater Ingestion Exposure Pathway

Refer to section E.13.d for the Tier 1 and Tier 2 evaluations of the soil component of the groundwater ingestion exposure pathway. Based on the results of Equations 828 and R26, the modeled extent of soil to groundwater migration extends off-site beneath Dirksen Parkway and Sangamon Avenue (Figure 4). In order to address groundwater conditions beneath the site, a GWO is proposed. A HAA with IOOT for Dirksen Parkway and Sangamon Parkway was secured on October 30, 2002 to address groundwater conditions beneath the roadways east and south of the site (Figure 3). Based on approval and implementation of these institutional controls, further evaluation of the soil component of the groundwater ingestion exposure pathway is not required.

CONCLUSION

In accordance with the procedures outlined in 35 IAC 742, BP has completed a soil and groundwater evaluation of the site. Following IEPA approval of this CAPA and execution of the GWO and the POS Form, BP will request that LUST Incident Nos. 941260 and 960236 be closed and that a NFR status be issued for BP Service Station No. 5167. Institutional controls associated with Incident Nos. 941260 and 960236 are listed below.

- Record the NFR letter to the deed of the property specifying that the groundwater beneath the site shall not be used as a potable water supply in accordance with the proposed groundwater ordinance
- A HAA with IDOT for Dirksen Parkway and Sarigamon Avenue to address groundwater conditions beneath the roadway was submitted to the IEPA on October 30, 2002 (Figure 3).
- A GWO prohibiting the use of groundwater as a potable water supply is proposed for the following properties:
 - o PIN 14-13-401-015, site
 - o PIN 14-13-401-020, 1st property north of site
 - o PIN 14-13-401-009, 1st property northwest of site
 - o PIN 14-13-401-010, 1st property southwest of site
 - o PIN 14-13-401-039, 2nd property west of site

In addition, any soil and/or groundwater with residual petroleum constituents removed, excavated, or disturbed from the site, will be handled in accordance with all applicable laws and regulations.

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G. SIGNATURES

UST Owner or Operator

Consultant

Name: BP Products North America, Inc.
Contact: Diane Diks
Address: 150 West Warrenville Road, Mail Code 200-1E
City: Naperville
State: Illinois
ZIP Code: 60563
Phone: 630-720-5537
Signature: [Handwritten Signature]
Date: 6/15/11

Company: Stantec Consulting Corporation
Contact: Luisa Price
Address: 446 Eisenhower Lane North
City: Lombard
State: Illinois
Zip Code: 60148
Phone: 630-792-1680
Signature: [Handwritten Signature]
Date: 6/15/11

I certify under penalty of perjury that all activities that are the subject of this plan were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologists and reviewed by me; that this plan and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in this plan has been completed in accordance to the Environmental Protection Act [415 ILCS 5], 35 Ill Adm. Code 731, 732, or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Section 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

Licensed Professional Engineer or Geologist

(...P.E. or LP.G. Seal

Name: Christopher B. Kocka, P.G.
Company: Stantec Consulting Corporation
Title: Associate Geologist
Address: 446 Eisenhower Lane North
Lombard, Illinois 60148
Phone: (630) 792-1680
IL Registration No. 196-001216
License Exp. Date 3/31/13



Signature: [Handwritten Signature]

TABLES

Corrective Action Plan Addendum
IEMA Incident Nos. 941260 & 960236

BP Service Station #5167
2201 North 31st Street (Dirksen Parkway)
Springfield, Sangamon County, Illinois

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TABLE I
GROUNDWATER BTEX ANALYTICAL RESULTS
BP SERVICE STATION NO.05167
2201 NORTH 31ST STREET
SPRINGFIELD, ILLINOIS

SAMPLE ID	DATE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	SO ₄	ME	DE
GROUNDWATER REMEDIATION OBJECTIVES	CLASS I	0.005	1	0.7	10	NR	NR	NR
	CLASS II	0.025	2.5	1	10	NR	NR	NR
OW-01	12/02/93	> 60 ^{1,2}	> 60 ^{1,2}	> 60 ^{1,2}	> 60 ^{1,2}	NA	NA	NA
	05/12/94	17.3 ^{1,2}	22.8 ^{1,2}	1.95 ^{1,2}	12.7 ^{1,2}	NA	NA	NA
	09/10/96	20.5 ^{1,2}	28.7 ^{1,2}	3.74 ^{1,2}	18.3 ^{1,2}	NA	NA	NA
	Destroyed					NA	NA	NA
OW-02	03/28/89	46 ^{1,2}	122 ^{1,2}	30 ^{1,2}	143 ^{1,2}	NA	NA	NA
	08/16/89	12 ^{1,2}	17 ^{1,2}	7.8 ^{1,2}	24 ^{1,2}	NA	NA	NA
	12/02/93	27.9 ^{1,2}	39.7 ^{1,2}	1 ¹	20.4 ^{1,2}	NA	NA	NA
	05/12/94	19.7 ^{1,2}	30 ^{1,2}	2.02 ^{1,2}	13.1 ^{1,2}	NA	NA	NA
	09/10/96	19.7 ^{1,2}	14.1 ^{1,2}	2.66 ^{1,2}	11.7 ^{1,2}	NA	NA	NA
	Destroyed					NA	NA	NA
OW-03	03/28/89	18 ^{1,2}	24 ^{1,2}	8.4 ^{1,2}	29 ^{1,2}	NA	NA	NA
	08/16/89	12 ^{1,2}	9.1 ^{1,2}	1.9 ^{1,2}	8.9 ^{1,2}	NA	NA	NA
	12/02/93	25.4 ^{1,2}	26.4 ^{1,2}	2.73 ^{1,2}	14.3 ^{1,2}	NA	NA	NA
	05/12/94	25.1 ^{1,2}	24.8 ^{1,2}	2.14 ^{1,2}	11.2 ^{1,2}	NA	NA	NA
	09/10/96	22.7 ^{1,2}	25.2 ^{1,2}	3.5 ^{1,2}	17.2 ^{1,2}	NA	NA	NA
	Destroyed					NA	NA	NA
MW-04	03/28/89	9.3 ^{1,2}	13 ^{1,2}	3.9 ^{1,2}	18 ^{1,2}	NA	NA	NA
	08/16/89	8.7 ^{1,2}	7.7 ^{1,2}	4.5 ^{1,2}	16 ^{1,2}	NA	NA	NA
	12/02/93	13 ^{1,2}	0.859 ¹	< 0.5	1.16	NA	NA	NA
	05/12/94	13.3 ^{1,2}	2.14 ¹	0.285	1.19	NA	NA	NA
	09/10/96	11.6 ^{1,2}	0.23	1.06 ^{1,2}	1.22	NA	NA	NA
	Destroyed					NA	NA	NA
MW-05	12/02/93	1.54 ^{1,2}	< 0.126	< 0.2	3.64	NA	NA	NA
	05/12/94	1.74 ^{1,2}	< 0.5	0.479	2.87	NA	NA	NA
	09/10/96	2.49 ^{1,2}	0.11	2.05 ^{1,2}	6.39	NA	NA	NA
	Destroyed					NA	NA	NA
MW-06	03/28/89	6 ^{1,2}	8.6 ^{1,2}	2.7 ^{1,2}	12 ^{1,2}	NA	NA	NA
	08/16/89	4.6 ^{1,2}	3.1 ^{1,2}	1.3 ^{1,2}	6.5	NA	NA	NA
	12/02/93	5.57 ^{1,2}	0.61	2.12 ^{1,2}	6.99	NA	NA	NA
	05/12/94	2.77 ^{1,2}	0.388	0.661	5.25	NA	NA	NA
	09/10/96	3.16 ^{1,2}	0.24	2.58 ^{1,2}	5.31	NA	NA	NA
	Destroyed					NA	NA	NA
MW-07	12/02/93	9.36 ^{1,2}	1.07	1.23 ^{1,2}	9.26	NA	NA	NA
	05/12/94	4.99 ^{1,2}	1.07	0.417	7.11	NA	NA	NA
	Destroyed					NA	NA	NA
MW-08	08/16/89	2.6 ^{1,2}	6.7 ^{1,2}	4.7 ^{1,2}	9	NA	NA	NA
	12/02/93	0.748 ^{1,2}	0.202	2.03 ^{1,2}	5.38	NA	NA	NA
	05/12/94	0.794 ^{1,2}	0.238	2.18 ^{1,2}	7.64	NA	NA	NA
	Destroyed					NA	NA	NA
OW-15	05/03/89	11 ^{1,2}	21 ^{1,2}	6.5 ^{1,2}	45 ^{1,2}	NA	NA	NA
	08/16/89	1.6 ^{1,2}	0.31	1.1 ^{1,2}	4.5	NA	NA	NA
	12/02/93	1.82 ^{1,2}	0.298	0.643	4.7	NA	NA	NA
	05/12/94	1.65 ^{1,2}	0.247	0.611	6.68	NA	NA	NA
	Destroyed					NA	NA	NA
OW-16	05/03/89	11 ^{1,2}	20 ^{1,2}	13 ^{1,2}	42 ^{1,2}	NA	NA	NA
	12/02/93	2.49 ^{1,2}	1.53 ¹	1.54 ^{1,2}	10.5 ^{1,2}	NA	NA	NA
	05/12/94	2.67 ^{1,2}	1.78 ¹	1.42 ^{1,2}	10.7 ^{1,2}	NA	NA	NA
	09/10/96	1.05 ^{1,2}	0.512	2.3 ^{1,2}	7.7	NA	NA	NA
Destroyed					NA	NA	NA	
OW-17	12/02/93	7.12 ^{1,2}	0.897	0.232	7.29	NA	NA	NA
	05/12/94	3.82 ^{1,2}	0.634	1.21 ^{1,2}	5.17	NA	NA	NA
	09/10/96	9.91 ^{1,2}	1.9 ¹	3.31 ^{1,2}	12.2 ^{1,2}	NA	NA	NA
	Destroyed					NA	NA	NA
OW-18	05/03/89	22 ^{1,2}	65 ^{1,2}	NA ^{1,2}	21 ^{1,2}	NA	NA	NA
	12/02/93	7.58 ^{1,2}	1.91 ¹	0.367	10.1 ^{1,2}	NA	NA	NA
	09/10/96	6.08 ^{1,1}	1.6 ¹	3 ^{1,1}	13.4 ^{1,2}	NA	NA	NA
	Destroyed					NA	NA	NA

1 = Above Class I Remediation Objective
2 = Above Class II Remediation Objective
= below laboratory detection limit

Results in milligrams per liter (mg/l)
• This site has been evaluated based on Class I Remediation Objectives
NA = Not Analyzed
NR = No Remediation Objective

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TABLE I
GROUNDWATER DTEX ANALYTICAL RESULTS
DP SERVICE STATION NO. 05167
2201 NORTH Jth STREET
SPRINGFIELD, ILLINOIS

SAMPLE ID	DATE	BENZENE		TOLUENE		ETHYL BENZENE		TOTAL XYLENES	SO ₂	Mg	Br
GROUNDWATER REMEDIATION OBJECTIVES	CLASS I	0.005		1		0.7		10	NR	NR	NR
	CLASS II	0.025		2.5		1		10	NR	NR	NR
MW-19	11/20/97	0.0012		0.001				< 0.002	NA	NA	NA
	03/30/99	< 0.002		< 0.002		< 0.002		< 0.005	NA	NA	NA
	10/04/01	< 0.001		< 0.001		< 0.001		< 0.003	NA	NA	NA
	05/16/02	< 0.001		< 0.001		< 0.001		< 0.003	NA	NA	NA
	08/07/02	< 0.001		< 0.001		< 0.001		< 0.003	NA	NA	NA
	11/05/02	< 0.001		< 0.001		< 0.001		< 0.003	NA	NA	NA
	07/09/03	< 0.001		< 0.001		< 0.001		< 0.003	NA	NA	NA
	10/16/03	< 0.001		< 0.001		< 0.001		< 0.003	NA	NA	NA
	01/15/04	< 0.001		< 0.001		< 0.001		< 0.003	NA	NA	NA
	04/07/04	< 0.005		< 0.005		< 0.005		< 0.005	NA	NA	NA
	08/04/04	< 0.001		< 0.001		< 0.001		< 0.003	NA	NA	NA
	11/04/04	< 0.001		< 0.001		< 0.001		< 0.003	NA	NA	NA
	03/16/05	< 0.001		< 0.001		0.001		< 0.003	46	NA	NA
	06/23/05	< 0.001		< 0.001		0.001		0.003	77.4	44	NA
	09/22/05	< 0.001		< 0.001		0.001		0.003	69.9	31.6	NA
	12/20/05	< 0.001		< 0.001		0.001		0.003	95	42.4	NA
05/24/06							0.003		68	NA	
MW-20	03/30/99	<		<				< 0.005	NA	NA	NA
	10/04/01	<		<				< 0.003	NA	NA	NA
	05/16/02	<		<				< 0.003	NA	NA	NA
	08/07/02	<		<				< 0.003	NA	NA	NA
	01/15/04	<		<				< 0.003	NA	NA	NA
	04/07/04	<		<				< 0.005	NA	NA	NA
	08/04/04	<		<				< 0.003	NA	NA	NA
	03/16/05							< 0.003	71.1	NA	NA
	06/23/05							< 0.003	88.4	115	NA
	09/22/05							< 0.003	89.3	57	NA
	12/20/05							< 0.003	91.1	37.1	NA
	05/24/06	< 0.001		< 0.001		< 0.001		< 0.003	104	254	NA
MW-21R	08/07/02	0.64	1.2	0.095		0.62		1	NA	NA	NA
	11/04/02	1.1	1.2	0.16		0.43		1.9	NA	NA	NA
	04/07/03	0.69	1.2	0.13		1.1	I	1.8	NA	NA	NA
	07/09/03	1.1	1.2	0.24		1.2	I	2.4	NA	NA	NA
	10/16/03	0.45	1.2	0.11		0.53		0.75	NA	NA	NA
	01/16/04	0.86	1.2	0.12		0.94	1.2	1.3	NA	NA	NA
	04/07/04	0.81	1.2	0.18		1.3		2	NA	NA	NA
	08/04/04	0.66	1.2	0.11		0.977		1.37	NA	NA	NA
	11/04/04	0.31	1.2	0.047		0.3		0.28	NA	NA	NA
	03/16/05	0.322	I	0.0587		0.546		0.461	NA	NA	NA
	06/23/05	0.843	1.1	0.146		1.28	1.1	1.8	87.4	NA	NA
	09/22/05	0.353	1.2	0.0635		0.382		0.388	< 2.5	NA	NA
	12/20/05	0.389	1.2	0.0577		0.577		0.484	< 2.5	NA	NA
	05/24/06	0.454	1.2	0.0934		0.647		0.804	< 2.5	NA	NA
	02/28/07	0.326	1.1	0.0599		0.496		0.455	< 2.5	NA	NA
	06/01/07	0.485	I	0.0778		0.615		0.736	1.8	NA	NA
	08/09/07	0.321	1.2	0.0589		0.385		0.367	11.1	2	2.1
	10/17/07	0.456		0.0806		0.674		0.514	< 2.5	165	< 0.25
	01/30/08	0.381	1.2	0.0574		0.563		0.523	484	141	NA
06/12/08	0.388	1.2	0.0686		0.586		0.536	12.1	141	NA	
09/16/08	0.646	1.2	0.116		1.02	I	0.979	12.1	141	NA	
12/18/08	0.575	I	0.0958		0.989		0.864	0.0138	88.8	0.83	
03/18/09	0.413	1.2	0.0644		0.606		0.423	47.9	102	0.68	
		0.51	1.2	0.085		0.721	I	0.594	NA	NA	NA

I = Above Class I Remediation Objective
 2 = Above Class II Remediation Objective
 < = below (laboratory) detection limit

Results in milligrams per liter (mg/l)
 * This site has been evaluated based on Class I Remediation Objectives
 NA = Not Analyzed NR = No Remediation Objective

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TARLE I
 GROUNDWATER DTEX ANALYTICAL RESULTS
 BP SERVICE STATION NO. 05167
 2201 NOR'FH31st STREET
 SPIUNGFIELD, ILLINOIS

SAMPLE ID	DATE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	SO4	Mg	B	
GROUNDWATER REMEDIATION OBJECTIVES	CLASS I	0.005	1	0.7	10	NR	NR	NR	
	CLASS II	0.025	2.5	1	10	NR	NR	NR	
MW-22	11/20/97	< 0.001	< 0.001	< 0.001	< 0.002	NA	NA	NA	
	03/30/99		<	<				NA	
	10/04/01		<	<				NA	
	05/16/02		<	<				NA	
	08/07/02		<	<				NA	
	11/05/02		<	<				NA	
	04/07/03		<	<				NA	
	07/09/03		<	<				NA	
	01/16/04						NA	NA	
	04/07/04	< 0.005	< 0.005	< 0.005	< 0.005	NA	NA	NA	
MW-23	11/20/97	< 0.001	< 0.001	< 0.001	< 0.002	NA	NA	NA	
	03/30/99	< 0.002	< 0.002	<	< 0.005		NA	NA	
	10/04/01	< 0.001	< 0.001	<	< 0.003		NA	NA	
	05/16/02	< 0.001	< 0.001	<	< 0.003		NA	NA	
	08/07/02	<	<	<	< 0.003		NA	NA	
	11/04/02	<	<	<	< 0.003		NA	NA	
	04/07/03	<	<	<	< 0.003		NA	NA	
	07/09/03	<	<	<	< 0.003		NA	NA	
	10/16/03	<	<	<	< 0.003		NA	NA	
	01/15/04	< 0.001	< 0.001	< 0.001	< 0.003		NA	NA	
	04/07/04	< 0.005	< 0.005	< 0.005	< 0.005		NA	NA	
	MW-24	03/30/99	1.1	0.082				NA	NA
		10/04/01	1.4	0.071	2.1	1.4		NA	NA
05/16/02		0.43	1.2 0.02	0.4	0.61		NA	NA	
08/07/02		1.2	1.2 0.084	1.5	1.6		NA	NA	
12/18/02		1.6	1.2 0.11	1.9	2.1		NA	NA	
04/07/03		1.6	1.2 0.082	1.4	2		NA	NA	
07/09/03		1.4	1.2 0.1	1.5	1.8		NA	NA	
10/16/03		1.6	1.2 0.066	1.7	1.5	NA	NA	NA	
01/16/04		1.9	1.2 0.067	1.7	1.9	NA	NA	NA	
04/07/04		0.843	1.2 0.0258	0.657	0.662	< 15	NA	NA	
08/04/04		2.1	1.2 0.083	1.8	1.7	< 2.2	NA	NA	
11/04/04		1.85	1.2 0.0618	1.93	1.62	< 2.5	NA	NA	
03/16/05		2.22	1.2 0.0667	1.79	1.55	< 2.5	77.7	NA	
06/23/05		1.92	1.2 0.0825	1.82	1.65	2.5	70	NA	
09/22/05		1.54	1.2 0.0536	1.88	0.872	438	149	NA	
12/20/05		1.97	1.2 0.0462	1.63	1.02	30	84.4	NA	
05/24/06		1.7	1.2 0.325	1.76	0.674	138	125	NA	
02/28/07		1.69	1.2 0.0379	1.61	0.917	< 2.5	77.6	NA	
06/01/07		1.47	1.1 0.0366	1.52	0.487	47.4	113	1.2	
08/09/07		1.37	1.2 0.0288	1.62	0.265	591	179	4.4	
10/17/07	0.592	1.1 0.0126	0.976	0.288	7430	NA	0.43		
01/30/08	1.38	1.1 0.0323	1.36	0.461	1340	392	NA		
06/12/08	1.52	1.1 0.0275	1.52	0.346	1340	392	NA		
09/16/08	1.56	1.2 0.0307	1.35	OAI4	179	90.9	0.9		
12/18/08	1.24	1.2 0.0182	1.48	0.15	588	377	0.76		
		1.65	1.2			NA	NA	NA	

1 = Above Class I Remediation Objective
 2 = Above Class II Remediation Objective
 < = below laboratory detection limit

Results in milligrams per liter (mg/l)
 • This site has been evaluated based on Class I Remediation Objectives
 NA = Not Analyzed NR = No Remediation Objective

TABLE I
 GROUNDWATER BTEX ANALYTICAL RESULTS
 BP SERVICE STATION NO.05167
 2201NORTH31ST STREET
 SPIUNGFIELD, IL INOIS

SAMPLE ID	DATE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	SO4	Mg	Dr
GROUNDWATER REMEDIATION OBJECTIVES	CLASS I	0.005	1	0.7	10	NR	NR	NR
	CLASS II	0.025	2.5	1	10	NR	NR	NR
MW-25	03/30/99	2.3 ^{1,2}	0.23	1.7		NA	NA	NA
	10/04/01	1.4 ^{1,2}	0.2	1.7 ^{1,2}		NA	NA	NA
	05/16/02	1.7 ^{1,2}	0.29	1.7 ^{1,2}		NA	NA	NA
	08/07/02	1.8 ^{1,2}	0.36	2.3 ^{1,1}		NA	NA	NA
	11/04/02	1.3 ^{1,2}	0.16	1.9 ^{1,1}		NA	NA	NA
	04/07/03	1.7 ^{1,2}	0.24	1.7 ^{1,2}		NA	NA	NA
	07/09/03	1.1 ^{1,2}	0.22	1.6 ^{1,2}		NA	NA	NA
	10/16/03	1.6 ^{1,2}	0.15	1.9 ^{1,2}	3.8	NA	NA	NA
	01/16/04	1.2 ^{1,2}	0.13	1	3.9	NA	NA	NA
	04/07/04	1.16 ^{1,2}	0.18	1.91 ^{1,1}	4.24	< IS	NA	NA
	08/04/04	1.1 ^{1,2}	0.22	1.9 ^{1,2}	4.5	NA	NA	NA
	11/04/04	1.18 ^{1,2}	0.14	2.27 ^{1,2}	5.01	13	NA	NA
	03/16/05	1.16 ^{1,2}	0.195	1.78 ^{1,2}	4.08	< 2.5	NA	NA
	06/13/05	1.08 ^{1,1}	0.129	1.75 ^{1,2}	3.78	< 2.5	146	NA
	09/22/05	0.79 ^{1,2}	0.142	2.3 ^{1,2}	4.1	4.3	47.9	NA
	12/20/05	0.51 ^{1,2}	0.0515	1.01 ^{1,2}	1.42	471	72.7	NA
	05/24/06	0.595 ^{1,1}	0.0377	1.32 ^{1,2}	0.896	229	132	NA
	02/28/07	0.291 ^{1,1}	0.0426	0.791	1.07	77.3	45.7	NA
	06/01/07	0.254 ^{1,2}	0.0161	0.563	0.229	193	77	< 0.25
	08/09/07	0.318 ^{1,2}	0.0078	0.671	0.058	156	78.6	< 0.25
	10/17/07	0.435 ^{1,1}	0.0097	1.06 ^{1,1}	0.621	24.8	75	< 0.25
01/30/08	0.223 ^{1,1}	0.0288	0.849	0.963	195	61.8	NA	
06/12/08	0.103 ^{1,1}	0.0151	0.452	0.656	195	NA	NA	
12/18/08	0.174 ^{1,2}	0.0287	0.719	0.752	11.3	801	< 0.25	
	03/18/09	0.2 ^{1,2}	0.0154	0.842		NA	NA	NA
MW-26				2		NA	NA	NA
	10/04/01	13 ^{1,1}	6 ^{1,1}	2.8 ^{1,2}	10	NA	NA	NA
	05/16/02	12 ^{1,1}	5.4 ^{1,1}	1.6 ^{1,1}	6	NA	NA	NA
	08/07/02	16 ^{1,1}	2.6 ^{1,1}	2.6 ^{1,1}	12	NA	NA	NA
	11/05/02	8.5 ^{1,1}	4.2 ^{1,2}	1.7 ^{1,2}	6.2	NA	NA	NA
	04/07/03	10 ^{1,1}	4.1 ^{1,2}	1.5 ^{1,2}	6.4	NA	NA	NA
	07/09/03	7 ^{1,1}	2.3 ¹	1.3 ^{1,2}	4.9	NA	NA	NA
	10/16/03	5.2 ^{1,1}	1.1	1.3 ^{1,1}	3.9	NA	NA	NA
	01/16/04	2.6 ^{1,2}	0.15	0.29	0.66	NA	NA	NA
	04/07/04	6.66 ^{1,2}	1.27	1.4 ^{1,2}	4.82	< 15	NA	NA
	08/04/04	8.1 ^{1,2}	0.94	1.8 ^{1,2}	5.6	< 2.5	NA	NA
	11/04/04	3.76 ^{1,2}	0.362	0.998	2.75	< 2.5	NA	NA
	03/16/05	9.1 ^{1,2}	0.982	2.1 ^{1,2}	6.51	< 2.5	NA	NA
	06/12/05	7.04 ^{1,2}	1.01	1.81 ^{1,2}	6.56	3.1	105	NA
	09/22/05	8 ^{1,2}	0.677	2.19 ^{1,1}	3.77	1040	221	NA
	12/20/05	8.55 ^{1,2}	0.376	1.71 ^{1,2}	1.55	187	142	NA
	05/12/06	7.65 ^{1,2}	0.0507	1.85 ^{1,2}	0.63	2770	463	NA
	02/28/07	8.5 ^{1,2}	0.416	2.89 ^{1,2}	1.63	180	228	NA
	06/01/07	6.89 ^{1,2}	0.429	2.23 ^{1,1}	1.46	415	360	4.2
	08/09/07	5.42 ^{1,2}	0.18	1.58 ^{1,2}	0.599	30600	2420	< 0.25
	10/12/07	6.35 ^{1,2}	0.2	2.06 ^{1,2}	1.33	3230	1230	8.2
01/30/08	1.74 ^{1,2}	0.0817	1.08 ^{1,1}	1.38	6.6	210	NA	
06/12/08	6.57 ^{1,2}	0.111	2.78 ^{1,2}	0.459	6.6	210	NA	
09/16/08	6.99 ^{1,2}	0.45	2.53 ^{1,1}	2.7	328	248	4.9	
12/18/08	3.7 ^{1,2}	0.0326	1.94 ^{1,1}	0.0765	16.2	631	4.3	
	03/1			2.23 ^{1,2}	0.206	NA	NA	NA

1 = Above Class I Remediation Objective
 2 = Above Class II Remediation Objective
 <a = below laboratory detection limit

Results in milligrams per liter (mg/l)
 • This site has been evaluated based on Class I Remediation Objectives
 NA = Not Analyzed
 NR = No Remediation Objective

TABLE I
GROUNDWATER BTEX ANALYTICAL RESULTS
BP SERVICE STATTON NO. 05167
2201 NORTH 31ST STREET
SPRINGFIELD, ILLINOIS

SAMPLE ID	DATE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	SO ₄	Mg	Br
GROUNDWATER REMEDIATION OBJECTIVES	CLASS II	0.005	1	0.7	10	NR	NR	NR
	CLASS II	0.025	2.5	1	10	NR	NR	NR
MW-27	03/30/99	< 0.002	< 0.002	0.002	0.005			NA
	10/04/01		0.001	0.001	0.003			NA
	05/16/02		0.001	< 0.001	< 0.003			NA
	08/07/02		0.001	< 0.001	0.003		NA	NA
	11/05/02		0.001	< 0.001	0.003		-NA	NA
	07/09/03		0.001	< 0.001	0.003	NA	NA	NA
	10/16/03		0.001	< 0.001	0.003	NA	NA	NA
	01/15/04		< 0.001	< 0.001	< 0.003	NA	NA	NA
	04/07/04		< 0.005	< 0.005	< 0.005	490	NA	NA
	08/04/04		< 0.0001	< 0.001	< 0.003	277	NA	NA
	11/04/04		< 0.0001	< 0.001	< 0.003	278	NA	NA
	03/16/05		< 0.0001	< 0.001	< 0.003	425	84.7	NA
	06123105		< 0.0001	< 0.001	< 0.003	296	79.8	NA
	09/22/05		0.0001	< 0.001	< 0.003	205	59.9	NA
	12/20/05		0.0001	< 0.001	< 0.003	387	15.6	NA
	05/24/06		0.001	< 0.001	< 0.003	387	134	NA
	02/28/07		0.001	< 0.001	< 0.003	426	76.8	NA
	06/01107		< 0.001	< 0.001	< 0.003	290	123	< 0.25
	08/09/07		< 0.001	< 0.001	< 0.003	331	160	5.5
	10/12/07	<	< 0.001	< 0.001	< 0.003	190	65.3	< 0.25
01/30/08	<	< 0.001	< 0.001	< 0.003	394	113	NA	
06/12/08	<	< 0.001	< 0.001	< 0.003	394	113	NA	
09/16/08		< 0.001	< 0.001	< 0.003	224	46.2	< 0.25	
12/18/08		< 0.001	< 0.001	< 0.003	266	63.8	< 0.25	
03/18/09		< 0.001	< 0.001				NA	
MW-28	03/30/99	0.013	< 0.002	0.	0.015		NA	NA
	10/04/01	0.001	0.005	0.035	0.048		NA	NA
	05/16/02	< 0.001	0.0038	0.025	0.02		NA	NA
	08/07/02	< 0.001	< 0.001	< 0.001	< 0.003	NA	NA	NA
	11/05/02	< 0.001	0.0021	0.013	0.016	NA	NA	NA
	07/09/03	< 0.001	0.0011	0.0023	< 0.003	NA	NA	NA
	10/16/03	< 0.001	0.003	0.0026	< 0.003	NA	NA	NA
	01/15/04	< 0.001	< 0.001	< 0.001	< 0.003	NA	NA	NA
	04/07/04	< 0.005	< 0.005	< 0.005	0.005	NA	NA	NA
	08/04/04	< 0.001	0.0019	0.016	0.021	113	NA	NA
	11/04/04	< 0.001	< 0.001	0.0051	0.0058	112	NA	NA
	03/16/05	< 0.001	< 0.001	< 0.001	0.003	187	69.9	NA
	06123105	< 0.001	0.0018	0.0137	0.0156	141	66.5	NA
	09/22/05	< 0.001	0.001	0.0012	0.003	110	67.4	NA
	12/20/05	< 0.001	< 0.001	< 0.001	< 0.003	164	58.2	NA
	05/24/06	< 0.001	< 0.001	0.0018	0.0043	240	156	NA
	02/28/07	< 0.001	< 0.001	0.0065	0.0075	198	64.9	NA
	06/01/07	< 0.001	0.0014	0.0037	0.0044	199	164	0.39
	08/09/07	< 0.001	< 0.001	< 0.001	0.003	175	179	0.39
	10/12/07	< 0.001	< 0.001	< 0.001	0.003	169	176	< 0.25
01/30/08	< 0.001	< 0.001	0.0031	0.0033	189	79.8	NA	
06/12/08	< 0.001	< 0.001	0.0064	0.0064	189	79.8	NA	
09/16/08	< 0.001	< 0.001	0.0106	0.0271	212	62.8	0.26	
12/18/08	0.001	0.001	0.001	< 0.003	204	167	0.26	
03/1	0.00	< 0.001	< 0.001	< 0.003	NA	NA	NA	

2 • Above Class II Remediation Objective
< low laboratory detection limit

Results in milligrams per liter (mg/l)
• This site has been evaluated based on Class I Remediation Objectives
NA Not Analyzed NR=No Remediation Objective

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TABLE 1
GROUNDWATER BTEX ANALYTICAL RESULTS
BP SERVICE STATION NO. 05167
2201 NORTH JIST STREET
SPRINGFIELD, ILLINOIS

SAMPLE ID	DATE	BENZENE		TOLUENE		ETHYL BENZENE		TOTAL XYLENES	SO4	MR	DR	
GROUNDWATER REMEDIATION OBJECTIVES	CLASS I	0.005		1		0.7		10	NR	NR	NR	
	CLASS II	0.025		2.5		1		10	NR	NR	NR	
MW-29	05/16/02	<	0.001	<	0.001	<	0.001	<	0.003	NA	NA	NA
	08/07/02	<	0.001	<	0.001	<	0.001	<	0.003	NA	NA	NA
	11/05/02	<		<		<	0.001	<	0.003	NA	NA	NA
	04/07/03	<		<		<	0.001	<	0.003	NA	NA	NA
	07/09/03	<		<		<	0.001	<	0.003			NA
	10/16/03	<		<		<	0.001	<	0.003	NA		NA
	Destroyed											NA
MW-300	05/16/02	<	0.001	<	0.001	<		<	0.003			NA
	08/07/02	<	0.001	<	0.001	<		<	0.003	NA		NA
	11/05/02	<	0.001	<	0.001	<				NA	NA	NA
	04/07/03	<	0.001	<	0.001	<				NA	NA	NA
	07/09/03	<	0.001	<	0.001	<				NA	NA	NA
	10/16/03	<	0.001	<	0.0012	<				NA	NA	NA
	01/15/04	<	0.001	<	0.001	<				NA	NA	NA
	04/07/04	<	0.005	<	0.005	<				NA	NA	NA
	08/04/04	<	0.001	<	0.0011	<				107	NA	NA
	11/04/04	<	0.001	<	0.001	<				122	NA	NA
	03/16/05	<	0.001	<	0.001	<				83.9	78.4	NA
	06/23/05	<	0.001	<	0.001	<				109	125	NA
	09/22/05	<	0.001	<	0.001	<				III	79.3	NA
	09/16/08	<	0.001	<	0.001	<				89.1	104	0.51
12/18/08	<		<		<				108	102	0.54	
MW-381	04/08/03					1.4			NA	NA	NA	
	07/09/03		0.12	1,2		0.62		1.2	NA	NA	NA	
	10/16/03		0.052	1,2		0.087		0.063	NA	NA	NA	
	01/15/04		0.071	1,1		0.19		0.14	NA	NA	NA	
	04/07/04		0.0571	1,2		0.221		0.109	135	NA	NA	
	08/04/04		0.02		0.0092	0.099		0.029	62.9	NA	NA	
	11/04/04		0.0328	1,2	0.0049	0.106		0.0368	65.5	NA	NA	
	03/16/05		0.0736	1,2	0.0103	0.431		0.0228	216	89.5	NA	
	06/23/05		0.0147		0.0106	0.0967		0.0398	96.7	74.4	NA	
	09/22/05		0.0551	1,2	0.0024	0.0367		0.0039	58	57.5	NA	
	12/20/05		0.0305	1,1	0.0028	0.0273		0.0131	288	79	NA	
	05/24/06		0.0236		0.007	0.128		0.0637	120	93.3	NA	
	02/28/07		0.0246		0.0078	0.0904		0.0559	179	65.1	NA	
	06/01/07		0.0131		0.007	0.0823		0.0242	106	85.1	0.37	
	08/09/07		0.0189		0.0102	0.142		0.0147	86.4	108	0.34	
	10/12/07		0.0386	1,2	0.0105	0.0726		0.0291	55.3	114	< 0.25	
	01/30/08		0.0392	1,2	0.005	0.0798		0.0458	135	102	NA	
	06/12/08		0.0283	1,2	0.0055	0.0773		0.0224	135	102	NA	
09/11/08		0.0101		0.0038	0.052		0.0288	109	51.4	0.27		
12/18/08		0.0146		0.002	0.0734		0.0181	105	81	0.3		
			0.0091		0.0017		0.0656		0.0052	NA	NA	NA

I Above Class I Remediation Objective
2 Above Class II Remediation Objective
<na below laboratory detection limit

Results in milligrams per liter (mg/l)
• This site has been evaluated based on Class I Remediation Objectives
NA = Not Analyzed NR = No Remediation Objective

19-42

TABLE 1
 GROUNDWATER BTEX ANALYTICAL RESULTS
 BP SERVICE STATION NO.05167
 2201 NORTH 31ST STREET
 SPRINGFIELD, ILLINOIS

SAMPLE ID	DATE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	SO ₂	Mg	B ₁
GROUNDWATER REMEDIATION OBJECTIVES	CLASS I	0.005	1	0.7	10	NR	NR	NR
	CLASS II	0.025	2.5	1	10	NR	NR	NR
MW-32	04/08/03	0.039 ^{1,2}	0.08	0.66	1.1	NA	NA	NA
	07/09/03	< 0.005		0.035	0.044			NA
	10/16/03	0.0042		0.042	0.043			NA
	01/15/04	< 0.001		0.0033	0.0045		NA	NA
	04/07/04	< 0.005	< 0.005	< 0.005	< 0.005	33	NA	NA
	08/04/04	< 0.001	0.0041	0.02	0.0087	17.3	NA	NA
	11/04/04	< 0.001	< 0.001	0.0134	0.0064	30.4	NA	NA
	03/16/05	< 0.001	0.001	0.0058	< 0.003	30.3	94.2	NA
	06/23/05	0.0015	0.001	0.017	0.0113	21.7	88.8	NA
	09/22/05	< 0.001	0.001	0.0051	< 0.003	30.3	44.4	NA
	12/20/05	< 0.001	0.001	0.0021	< 0.003	16.7	80.2	NA
	05/24/06	0.0029	0.0011	0.0183	0.01	23.1	131	NA
	02/28/07	< 0.001	0.001	0.0049	0.003	26.2	78.3	NA
	06/01/07	< 0.001	0.001	0.001	< 0.003	19.1	198	1.4
	08/09/07	< 0.005	0.005	0.0099	< 0.015	8.5	368	1.3
	10/12/07	< 0.001	0.001	0.001	0.003	6.7	95.6	< 0.25
	01/30/08	< 0.001	0.001	0.001	0.003	31.8	89.1	NA
	06/12/08	0.0129	0.005	0.0137	< 0.015	31.8	89.1	NA
	09/16/08	< 0.001	0.005	0.0013	0.003	46.8	125	0.46
	12/18/08	< 0.001	0.005	0.0018	< 0.003	37.9	136	0.74
03/18/09	< 0.001	0.001	0.0014	< 0.003	NA	NA	NA	
MW-33	04/08/03	0.081	0.0077	0.027	0.031	NA	NA	NA
	07/09/03	0.022	0.001	< 0.001	< 0.003	NA	NA	NA
	10/16/03	0.061	0.0057				NA	NA
	01/15/04	0.03	0.0017	<		NA	NA	NA
	04/07/04	0.026	0.005	<		NA	NA	NA
	08/04/04	0.039 ^{1,1}	0.0033	0.0024	< 0.003	NA	NA	NA
	11/04/04	0.0382 ^{1,2}	< 0.001	0.0019	< 0.003	NA	NA	NA
	03/16/05	0.143 ^{1,1}	0.0031	0.0034	0.003	NA	NA	NA
	06/23/05	0.162 ^{1,1}	< 0.001	0.0027	0.007	2.5	138	NA
	09/22/05	0.262 ^{1,1}	0.0036	0.0015	0.0116	2.5	74.5	NA
	12/20/05	0.198 ^{1,2}	0.0031	0.0013	0.0106		71.2	NA
	05/23/06	0.155 ^{1,2}	0.0018		0.0105		220	NA
	02/28/07	0.163 ^{1,1}	0.004		0.011	2.9	79.2	NA
	06/01/07	0.16 ^{1,2}	0.0048		0.0116	2.5	147	0.91
	08/09/07	0.264 ^{1,2}	0.0063		0.0243	< 2.5	165	0.92
	10/12/07	0.317 ^{1,1}	0.0079		0.032	2.5	98.1	< 0.25
	01/03/08	0.22 ^{1,2}	0.005			2.6	146	NA
12/18/08		0.0025 ^{1,1}	0.0011	0.0043	< 2.5	157	0.41	
			0.0027	< 0.001	0.0039	NA	NA	NA

1 = Above Class I Remediation Objective
 2 = Above Class II Remediation Objective
 < = below laboratory detection limit

Res: Illinois
 milligrams per liter (mg/l)
 * If this site has been evaluated based on Class I Remediation Objectives
 NA = Not Analyzed NR = No Remediation Objective

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TABLE I
 GROUNDWATER BTEX ANALYTICAL RESULTS
 BPSERVICE STATION NO. 05167
 2201 NORTH 31ST STREET
 SPRINGFIELD, ILLINOIS

SAMPLE ID	DATE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	SO4	Mg	Br
GROUNDWATER REMEDIAION OBJECTIVES	CLASS I	0.005	1	0.7	10	NR	NR	NR
	CLASS II	0.025	2.5	1	10	NR	NR	NR
MW-34	04/08/03 Destroyed	0.031 ^{1,2}	0.0024	0.012	0.019	NA	NA	NA
MW-35	04/07/04		0.	2.48	6.58	NA	NA	NA
	03/16/05	1.72 ^{1,2}	0.129	0.922	1.69	93.6	NA	NA
	06/23/05	0.115 ^{1,2}	0.13	1.36	2.49	3.1	134	NA
	09/22/05	2.99 ^{1,2}	0.163	1.96	4.19	< 2.5	192	NA
	12/20/05	1.87 ^{1,2}	0.106	0.923	2.17	2.7	132	NA
	05/24/06	1.85 ^{1,2}	0.101	1.43	2.59	< 2.5	231	NA
	02/28/07	2.03 ^{1,2}	0.13	1.46	2.47	10.5	201	NA
	06/01/07	1.71 ^{1,2}	0.11	1.21	1.79	< 2.5	186	1.6
	09/27/07	1.55 ^{1,2}	0.111	1.61	1.93	14.9		< 0.25
	10/12/07	1.57 ^{1,2}	0.084	0.958	1.32	19.3	60.6	< 0.25
	01/30/08	4.86 ^{1,2}	0.289	2	1.09	953	677	NA
	06/12/08	1.93 ^{1,2}	0.0853	1.18	1.3	953	677	NA
	09/16/08	2.13 ^{1,2}	0.081	1.27	1.12	3.2	213	0.64
	03/18/09	1.51 ^{1,2}	0.0559	702	0.707	NA	NA	NA

1 = Above Class I Remediation Objective
 2 = Above Class II Remediation Objective
 < = below laboratory detection limit

Results in milligrams per liter (mg/l)
 * This site has been evaluated based on Class I Remediation Objectives
 NA=Not Analyzed NR=No Remediation Objective

TABLE 2
GROUNDWATER PNA ANALYTICAL RESULTS
BP SERVICE STATION NO.05167

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TABLE 2
GROUNDWATER PNA ANALYTICAL RESULTS
BP SERVICE STATION NO.05167
2201 NORTH 31ST STREET
SPRINGFIELD, ILLINOIS

SAMPLE ID	Date Sampled	Concentrations in air (list ^m per filter (ms/l))											
		Acenaphthene	Anthracene	Benz(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Naphthalene	Pyrene
GROUNDWATER REMEDIATION OBJECTIVES	CLASS I	0.42	2.3	0.00013	0.00018	0.00017	0.0002	0.0015	0.0003	0.28	0.00043	0.14	0.21
	CLASS II	2.1	10.5	0.00065	0.00095	0.00085	0.002	0.0075	0.0015	1.4	0.00215	0.22	1.05
MW-34 MW-35	04/08/03	< 0.00053	< 0.00053	< 0.00053	< 0.00011	< 0.00053	< 0.00053	< 0.00053	< 0.00011	< 0.00011	< 0.00053	< 0.00013	< 0.00053
	04/07/04	< 0.01	< 0.005	< 0.00053	< 0.00018	< 0.00017	< 0.0002	< 0.0015	< 0.0003	< 0.004	< 0.00053	< 0.00053	< 0.00053
	08/04/04	< 0.0053	< 0.00053	< 0.00053	< 0.00011	< 0.00053	< 0.00053	< 0.00053	< 0.00011	< 6.00011	< 0.00053	2.3	< 0.00053
	11/04/04	< 0.0305	0.0038	< 0.0003	0.00061	0.0003	0.0003	0.0003	0.00061	< 0.00061	< 0.0003	1.1	< 0.00053
	05/16/05	< 0.00051	< 0.00051	< 0.0023	< 0.0001	< 0.00051	< 0.00051	< 0.00051	< 0.0001	0.0122	< 0.00051	1.49	< 0.00051
	06/23/05	0.0411	< 0.00053	< 0.00053	< 0.00011	< 0.00053	< 0.00053	< 0.00053	< 0.00011	0.018	< 0.00053	0.524	< 0.00053
	09/22/05	< 0.0105	< 0.00019	< 0.00053	< 0.00011	< 0.00053	< 0.00053	< 0.00053	< 0.00011	0.0226	< 0.00053	0.477	< 0.00053
	12/20/05	< 0.00053	< 0.000053	< 0.00053	< 0.00011	< 0.00053	< 0.00053	< 0.00015	< 0.00011	0.0095	< 0.00053	0.501	< 0.00053
	02/28/07	< 0.00052	< 0.000053	< 0.00052	< 0.0001	< 0.00052	< 0.00052	< 0.00018	< 0.00011	0.0095	< 0.00052	0.548	< 0.00053
	03/30/99	< 0.00052	< 0.000052	< 0.00052	< 0.0001	< 0.00052	< 0.00052	0.00056	< 0.0001	< 0.00013	< 0.00052	< 0.00052	< 0.00014
Abandoned													

Concentrations in air (list^m per filter (ms/l))
 - Above Class I Groundwater Remediation Objective
 - Above Class II Groundwater Remediation Objective
 - Not Analyzed

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TADLE3
 GROUP WATER ELEVATION DATA
 BP SERVICE STATION NO. 05167
 2201 NORTH 31st STREET
 SPRINGFIELD, ILLINOIS

Well ID	DATE	TOP OF CASING ELEVATION (FEET)	DEPTH TO GROUNDWATER (FEET-BTOC)	DEPTH TO PRODUCT (FEET-BTOC)	DEPTH TO BOTTOM (FEET-BTOC)	PRODUCT THICKNESS (FEET)	GROUNDWATER ELEVATION (FEET)
OW-01	03/28/89	100.00	3.55	3.49		0.06	96.45
	05/03/89	100.00	3.41				96.59
	12/02/93	100.00	3.56				96.44
	05/12/94	100.00	3.21				96.79
	09/10/96	100.00	5.71				94.29
	Destroyed						
OW-02	03/28/89	100.48	4.06				96.42
	05/03/89	100.48	3.95				96.53
	12/02/93	100.48	4.06				96.42
	05/12/94	100.48	3.69				96.79
	09/10/96	100.48	6.32				94.16
	Destroyed						
OW-03	03/28/89	100.04	3.49				96.55
	05/03/89	100.04	3.39				96.65
	12/02/93	100.04	3.62				96.42
	05/12/94	100.04	3.40				96.64
	09/10/96	100.04	5.58				94.46
	Destroyed						
MW-04	03/28/89	100.32	3.69				96.63
	05/03/89	100.32	3.56				96.76
	12/02/93	100.32	4.00				96.32
	05/12/94	100.32	3.49				96.83
	09/10/96	100.32	5.40				94.92
	Destroyed						
MW-05	03/28/89	100.28	4.05	4.02		0.03	96.23
	05/03/89	100.28	3.90				96.38
	12/02/93	100.28	4.34				95.94
	05/12/94	100.28	3.75				96.53
	09/10/96	100.28	6.05				94.23
	Destroyed						
MW-06	03/28/89	100.4	3.94				96.46
	05/03/89	100.40	3.79				96.61
	12/02/93	100.40	4.33				96.07
	05/12/94	100.40	3.69				96.71
	09/10/96	100.40	5.95				94.45
	Destroyed						
MW-07	03/28/89	100.08	3.94	3.93			.14
	05/03/89	100.08	3.75				96.33
	12/02/93	100.08	4.18				95.90
	05/12/94	100.08	3.50				96.58
	Destroyed						
MW-08	03/28/89	100.44	4.05				96.39
	05/03/89	100.44	3.96				96.48
	12/02/93	100.44	3.95				96.49
	05/12/94	100.44	3.45				96.99
	Destroyed						
OW-09	Destroyed						
OW-10	Destroyed						
OW-11	Destroyed						
OW-12	Destroyed						
OW-13	Destroyed						
OW-14	Destroyed						

TABLE3
GROUNDWATER EUWATION DATA
FIP SERVICE STATION NO. 05167
2201 NORTH 31ST STREET
SPRINGFIELD, ILLINOIS

WELL ID	DATE	TOP OF CASING ELEVATION (FEET)	DEPTH TO GROUNDWATER (FEET-BTOC)	DEPTH TO PRODUCT (FEET-BTOC)	DEPTH TO BOTTOM (FEET-BTOC)	PRODUCT THICKNESS (FEET)	GROUNDWATER ELEVATION (FEET)
OW-15	05/03/89	99.16	3.98				95.18
	12/02/93	99.16	4.68				94.48
	05/12/94	99.16	3.93				95.23
	Destroyed						
OW-16	05/03/89	99.68	2.96				
	12/02/93	99.68	3.38				96.30
	05/12/94	99.68	2.90				96.78
	09/10/96	99.68	5.12				94.56
	Destroyed						
OW-17	05/03/89	99.88	4.17	4.06		0.11	95.71
	12/02/93	99.88	3.30				96.58
	05/12/94	99.88	3.79				96.09
	09/10/96	99.88	7.12				92.76
	Destroyed						
OW-18	05/03/89	99.52	2.94				96.58
	12/02/93	99.52	3.06				96.46
	09/10/96	99.52	5.27				94.25
	D						
MW-19	03/30/99	99.29	5.63		12		
	10/04/01	99.29	6.22		14.13		93.07
	05/16/02	99.29	5.26		14.10		94.03
	08/07/02	99.29	6.61		14.18		92.68
	11/04/02	99.29	4.96		14.13		94.33
	07/09/03	99.29	5.36		14.10		93.93
	10/16/03	99.29	5.52		14.12		93.77
	01/15/04	99.29	5.58		14.11		93.71
	04/07/04	99.29	5.53		14.22		93.76
	08/04/04	99.29	5.79		14.08		93.50
	11/04/04	99.29	4.44		13.95		94.85
	03/16/05	99.29	5.66		14.09		93.63
	06/23/05	99.29	6.23		14.80		93.06
	09/21/05	99.29	5.72		14.02		93.57
	12/20/05	99.29	5.63		13.96		93.66
	MW-20	10/04/01		6.77		14.35	
05/16/02			6.23		14.36		NA
08/07/02			7.02		14.41		NA
01/15/04			6.62		14.23		NA
04/07/04			6.57		14.45		NA
08/04/04		NA	6.65		14.35		NA
11/04/04		NA	NS		NS		NA
03/16/05		NA	6.07		14.38		NA
06/23/05		NA	6.86		14.36		NA
09/21/05		NA	6.63		14.34		NA
12/20/05		NA	6.75		14.36		NA
08/09/07		NA	GONE		GONE		NA
10/12/07		NA	GONE		GONE		NA
06/12/08		NA	GONE		GONE		NA
03/18/09	NA	GONE		GONE		NA	
MW-21	Destroyed						

TADLEJ GROUNDWATER
ELEVATION DATA DP SERVICE
STATION NO.05167
2201 NORTH 31st STREET
SPRINGFIELD, JT,I,INOJS

19-52

Well ID	DATE	TOP OF CASING ELEVATION (FEET)	DEPTH TO GROUNDWATER (FEET BTOC)	DEPTH TO PRODUCT (FEET BTOC)	DEPTH TO BOTTOM (FEET BTOC)	PRODUCT THICKNESS (FEET)	GROUNDWATER ELEVATION (FEET)
MW-21R	05/16/02		4.		13.82		96.23
	08/07/02	100.36	6.05		13.88		94.31
	11/04/02	100.36	5.71		13.91		94.65
	04/07/03	100.36	5.11		13.89		95.22
	07/09/03	100.36	5.26		13.89		95.10
	10/16/03	100.36	5.56		13.79		94.80
	01/16/04	100.36	6.01		13.82		94.35
	04/07/04	100.36	4.94		14.02		95.42
	08/04/04	100.36	5.29		13.84		95.07
	11/04/04	100.36	4.63		13.75		95.73
	03/16/05	100.36	5.51		13.86		94.85
	06/23/05	100.36	6.40		13.84		93.96
	09/21/05	100.36	6.29		13.80		94.07
	12/20/05	100.36	5.27		13.72		95.09
	02/28/07	100.36	4.07		13.79		96.29
	06/01/07	100.36	5.67		13.80		94.69
	08/09/07	100.36	6.12		13.80		94.24
	10/12/07	100.36	7.85		13.80		92.51
	01/30/08	100.36	6.22		13.80		94.14
	06/12/08	100.36	4.36		13.75		96.00
09/16/08	100.36	4.47		76		95.89	
12/18/08	100.36	5.81				94.55	
			5.56				
MW-22	10/04/01	100.17	5.25		14.35		94.92
	05/16/02	100.17	3.10		14.44		97.07
	08/07/02	100.17	5.17		14.39		95.00
	11/04/02	100.17	4.76		14.38		95.41
	04/07/03	100.17	3.87		14.36		96.30
	07/09/03	100.17	4.23		14.36		95.94
	01/16/04	100.17	4.47		14.26		95.70
	04/07/04	100.17	3.84		14.24		96.33
MW-23	D	99.47					95.37
	0	99.47	4.55		14.29		94.92
	05/16/02	99.47	2.98'		14.23		96.49
	08/07/02	99.47	4.52		14.34		94.95
	11/04/02	99.47	3.82		14.14		95.65
	04/07/03	99.47	3.10		14.01		96.37
	07/09/03	99.47	3.16		14.01		96.31
	10/16/03	99.47	3.78		14.72		95.69
	01/15/04	99.47	4.03		14.58		95.44
	04/07/04	99.47	3.25		14.28		96.22
MW-24	03/30/99	100.47	5.02				95.45
	10/04/01	100.47	6.45		13.58		94.02
	05/16/02	100.47	4.15		13.50		96.32
	08/07/02	100.47	5.20		13.52		95.27
	12/18/02	100.47	6.92		13.52		93.55
	04/07/03	100.47	5.05		12.87		95.42
	07/09/03	100.47	4.99		12.87		95.48
	10/16/03	100.47	5.30		13.52		95.17
	01/16/04	100.47	5.04		13.52		95.43
	04/07/04	100.47	4.68		13.26		95.79
	08/04/04	100.47	5.31		13.47		95.16
	11/04/04	100.47	3.97		13.25		96.50
	03/16/05	100.47	5.14		13.41		95.33
	06/23/05	100.47	6.16		13.43		94.31
	09/21/05	100.47	6.18		13.48		94.29
	12/20/05	100.47	5.00		13.25		95.47
	02/28/07	100.47	4.09		13.47		96.38
	06/01/07	100.47	5.27		13.50		95.20
	08/09/07	100.47	6.98		13.50		93.49
	01/30/08	100.47	6.10		13.49		94.37
06/12/08	100.47	4.22		13.50		96.25	
09/16/08	100.47	4.53		13.46		95.94	
12/18/08	100.47	4.98		13.49		95.49	
03/18/09	100.47	4.91				95.56	

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TABLE 3
GROUNDWATER ELEVATION DATA
BPS SERVICE STATION NO. 05167
2201 NORTH 31ST STREET
SPRINGFIELD, ILLINOIS

Well ID	DATE	TOP OF CASING ELEVATION (FEET)	DEPTH TO GROUNDWATER (FEET BTOC)	DEPTH TO PRODUCT (FEET BTOC)	DEPTH TO BOTTOM (FEET BTOC)	PRODUCT THICKNESS (FEET)	GROUNDWATER ELEVATION (FEET)
MW-25	03/30/99	100.64	5.67		1		94.97
	10/04/01	100.64	6.17		14.68		94.47
	05/16/02	100.64	4.60		15.70		96.04
	08/07/02	100.64	6.20		15.73		94.44
	11/04/02	100.64	5.81		15.61		94.83
	04/07/03	100.64	5.27		15.60		95.37
	07/09/03	100.64	5.53		15.60		95.11
	10/16/03	100.64	5.69		15.64		94.95
	01/16/04	100.64	5.51		15.53		95.01
	04/07/04	100.64	5.23	5.21		0.02	95.41
	08/04/04	100.64	5.91		15.38		94.73
	11/04/04	100.64	4.33		15.20		96.31
	03/16/05	100.64	5.72		15.29		94.92
	06/23/05	100.64	6.62		15.28		94.02
	09/21/05	100.64	6.57		15.26		94.07
	12/20/05	100.64	5.50		15.21		95.14
	02/28/07	100.64	3.79		15.19		96.85
	06/01/07	100.64	5.83		15.20		94.81
	08/09/07	100.64	7.12		15.20		93.52
	10/12/07	100.64	10.24		15.20		90.4
	01/30/08	100.64	5.63		15.20		95.01
06/12/08	100.64	4.80		15.16		95.84	
12/18/08	100.64	5.66		15.15		94.98	
03/18/09							
MW-26	03/30/99				1		
	10/04/01	99.63	5.10		13.31		94.53
	05/16/02	99.63	2.72		13.29		96.91
	08/07/02	99.63	4.72		13.35		94.91
	11/04/02	99.63	4.04		13.02		95.59
	04/07/03	99.63	3.52		12.98		96.11
	07/09/03	99.63	3.57		12.98		96.06
	10/16/03	99.63	4.10		13.24		95.53
	01/16/04	99.63	4.12		13.21		95.51
	04/07/04	99.63	3.35		13.11		96.28
	08/04/04	99.63	4.08		13.12		95.55
	11/04/04	99.63	2.86		12.94		96.77
	03/16/05	99.63	4.27		13.03		95.36
	06/23/05	99.63	4.77		15.04		94.86
	09/21/05	99.63	5.12		13.09		94.51
	12/20/05	99.63	4.20		12.94		95.43
	02/28/07	99.63	3.55		13.04		96.08
	06/01/07	99.63	4.51		13.00		95.12
	08/09/07	99.63	4.92		13.00		94.71
	10/12/07	99.63	6.55		13.00		93.08
	01/30/08	99.63	4.26		13.00		95.37
06/12/08	99.63	4.25		12.95		95.38	
09/16/08	99.63	3.09		13.01		96.54	
12/18/08	99.63	4.36		12.99		95.27	
MW-27	10/04/01	98.88	6.12		12.77		95.74
	05/16/02	98.88	1.59		12.76		92.76
	08/07/02	98.88	6.63		12.89		97.29
	11/04/02	98.88	4.74		12.79		92.25
	07/09/03	98.88	4.72		12.79		94.14
	10/16/03	98.88	4.69		12.88		94.16
	01/15/04	98.88	4.05		12.83		94.19
	04/07/04	98.88	3.62		13.00		94.83
	08/04/04	98.88	5.11		12.76		95.26
	11/04/04	98.88	2.04		12.77		93.77
	03/16/05	98.88	4.48		12.87		96.84
	06/23/05	98.88	5.86		12.74		94.4
	09/21/05	98.88	5.98		12.82		93.02
	12/20/05	98.88	4.16		12.78		92.9
	02/28/07	98.88	1.97		12.81		94.72
	06/01/07	98.88	4.89		12.81		96.91
	08/09/07	98.88	6.55		12.82		93.99
	10/12/07	98.88	9.12		12.82		92.33
	01/30/08	98.88	4.24		12.80		89.76
	06/12/08	98.88	2.79		12.75		94.64
	09/16/08	98.88	0.50		12.80		96.09
12/18/08	98.88	4.60		12.82		98.38	
							94.28

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TABLE 3
GROUNDWATER ELEVATION DATA
BP SERVICE STATION NO. 05167
2201 NORTH 31st STREET
SPRINGFIELD, ILLINOIS

WELL ID	DATE	TOP OF CASING ELEVATION (FEET)	DEPTH TO GROUNDWATER (FEET-BTOG)	DEPTH TO PRODUCT (FEET-BTOG)	DEPTH TO BOTTOM (FEET-BTOG)	PRODUCT THICKNESS (FEET)	GROUNDWATER ELEVATION (FEET)
MW-28	03/30/99	98.75	4.5		13		94.25
	10/04/01	98.75	6.07		12.75		92.68
	05/16/02	98.75	2.77		12.68		95.98
	08/07/02	98.75	6.58		12.75		92.17
	11/04/02	98.75	4.07		12.89		94.68
	07/09/03	98.75	4.77		12.89		93.98
	10/16/03	98.75	4.60		12.55		94.15
	01/15/04	98.75	4.37		12.61		94.38
	04/07/04	98.75	4.11		12.68		94.64
	08/04/04	98.75	5.19		12.65		93.56
	11/04/04	98.75	1.96		12.54		96.79
	03/16/05	98.75	4.62		12.64		94.13
	06/23/05	98.75	5.88		12.62		92.87
	09/21/05	98.75	5.54		12.62		93.21
	12/20/05	98.75	4.43		12.54		94.32
	02/28/07	98.75	2.83		12.62		95.92
	06/01/07	98.75	4.90		12.62		93.85
	08/09/07	98.75	6.59		12.62		92.16
	10/12/07	98.75	9.20		12.62		89.55
	01/30/08	98.75	4.51		12.52		94.24
	06/12/08	98.75	3.69		12.70		95.06
09/16/08	98.75	2.63		12.62		96.12	
12/8/08	98.15	4.72		12.60		94.03	
03/18/09							
MW-29	05/16/02	99.36	2.56				96.8
	08/07/02	99.36	4.28		11.94		95.08
	11/04/02	99.36	3.6		12.02		95.76
	04/07/03	99.36	3.61		12.03		95.75
	07/09/03	99.36	3.04		12.03		96.32
	10/16/03	99.36	3.53		11.93		95.83
Destroyed							
MW-30	05/16/02	99.28	1.61		13.87		
	08/07/02	99.28	5.81		13.93		93.47
	11/04/02	99.28	3.8		13.88		95.48
	04/07/03	99.28	2.43		13.87		96.85
	07/09/03	99.28	3.9		13.87		95.38
	10/16/03	99.28	4.23		13.91		95.05
	01/15/04	99.28	4.14		13.89		95.14
	04/07/04	99.28	3.58		14.02		95.1
	08/04/04	99.28	4.73		13.89		94.55
	11/04/04	99.28	1.65		13.81		97.63
	03/16/05	99.28	4.52		13.91		94.76
	06/23/05	99.28	5.38		13.88		93.9
	09/21/05	99.28	5.37		13.85		93.91
	09/16/08	99.28	0.27		13.82		99.01
	12/18/08	99.28	4.44				
MW-31	04/08/03	99.78					1
	07/09/03	99.78	5.12		12.97		94.66
	10/16/03	99.78	4.94		12.89		94.84
	01/15/04	99.78	4.53		12.87		95.25
	04/07/04	99.78	4.28		12.85		95.5
	08/04/04	99.78	5.54		12.67		94.24
	11/04/04	99.78	2.67		12.50		97.1 I
	03/16/05	99.78	4.83		12.68		94.95
	06/16/05	99.78	6.26		12.64		93.52
	09/21/05	99.78	6.2		12.67		93.58
	12/20/05	99.78	4.6		12.50		95.18
	02/28/07	99.78	2.37		12.51		97.41
	06/01/07	99.78	5.22		12.51		94.56
	08/09/07	99.78	7.02		12.51		92.76
	10/12/07	99.78	9.46		12.51		90.32
	01/30/08	99.78	4.71		12.50		95.07
	06/12/08	99.78	3.97		12.55		95.81
09/16/08	99.78	2.35		12.68		97.43	
1V18/08	99.78	4.85		12.68		94.93	
03/18/09	99.78	4.50					

19-55

TADLEJ GROUNDWATER
 ELEVATION DATA BY SERVICE
 STATION NO. 05167
 2201 NORTH 31" STREET
 SPRINGFIELD, ILLINOIS

Well ID	DATE	TOP OF CASING ELEVATION (FEET)	DEPTH TO GROUNDWATER (FEET BTOC)	DEPTH TO PRODUCT (FEET BTOC)	DEPTH TO BOTTOM (FEET BTOC)	PRODUCT THICKNESS (FEET)	GROUNDWATER ELEVATION (FEET)
MW-32	04/08/03	99.51	5.39		12.85		94.12
	07/09/03	99.51	5.01		12.85		94.5
	10/16/03	99.51	5.01		13.11		94.5
	01/15/04	99.51	5.02		13.09		94.49
	04/07/04	99.51	4.94		13.21		94.57
	08/04/04	99.51	5.28		13.03		94.23
	11/04/04	99.51	4.64		12.82		94.87
	03/16/05	99.51	5.04		12.95		94.47
	06/23/05	99.51	5.8		12.93		93.71
	09/21/05	99.51	5.33		12.99		94.18
	12/20/05	99.51	5.07		12.82		94.44
	02/28/07	99.51	4.79		12.93		94.72
	06/01/07	99.51	5.06		12.92		94.45
	08/09/07	99.51	6.32		12.92		93.19
	10/12/07	99.51	8.59		12.92		90.92
	01/30/08	99.51	4.98		12.95		94.53
	06/12/08	99.51	4.85		12.9		94.66
	09/16/08	99.51	4.76		12.88		94.75
	12/18/08	99.51	5.02		12.88		94.49
	MW-33	04/08/03	100.23			12.92	
07/09/03		100.23	5.93		12.92		94.3
10/16/03		100.23	6.04		12.96		94.19
01/15/04		100.23	6.06		12.93		94.17
04/07/04		100.23	6.02		13.15		94.21
08/04/04		100.23	6.14		12.92		94.09
11/04/04		100.23	5.84		12.93		94.39
03/16/05		100.23	6.08		13.03		94.15
06/23/05		100.23	6.47		12.98		93.76
09/21/05		100.23	6.11		12.9		94.12
12/20/05		100.23	6.12		12.93		94.11
02/28/07		100.23	5.91		12.9		94.32
06/01/07		100.23	6.07		12.91		94.16
08/09/07		100.23	6.62		12.91		93.61
10/12/07		100.23	9.83		12.91		90.4
01/30/08		100.23	6.07		12.91		94.16
06/12/08		100.23	6.01	6.00	12.90	0.01	94.22
12/18/08	100.23	6.09		12.91	6.09	94.14	
03/18/09	100.23	6.05				94.18	
MW-34	04/08/03	100.37					96.24
	Destroyed						
MW-35	04/07/04		4.02				
	08/04/04		4.56		12.37		
	11/04/04		4.08		12.38		
	03/16/05		4.8		13.33		
	06/23/05		5.28		13.46		
	09/21/05		5.8		14.06		
	12/20/05		4.8		12.39		
	02/28/07		4.2		13.79		
	06/01/07		5.67		13.79		
	08/09/07		4.2		13.79		
	10/12/07		7.42		14.46		
	06/12/08		3.55		14.46		
	09/16/08		4.25		14.48		
03/18/09		5.08		14.00			

BTOC= Below top of casing
 NA=Not Available

*No product observed in MW-25 on 4/7/04 upon visual inspection with bailer

19-56

TAI3LE4
 SOIL BTEX ANALYTICAL RESULTS
 I3P SERVICE STATION NO. 05167
 2201 NORTH 31ST STREET
 SPRINGFIELD, ILLINOIS

SAMPLE ID	DATE	DEPTH (FEET)	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
Gas UST #1 Floor	02/09/96	12	0.29 ^{1,2}	0.13	0.38	0.71
Gas UST #2 Floor	02/09/96	12	0.14 ¹	0.19	0.35	0.42
Gas UST #3 Floor	02/09/96	12	0.18 ^{1,2}	2.7	0.51	2.6
Gas UST Area III North Wall, East Half	02/09/96	6	< 0.5 ^{1,2}	1.3	1.7	11
Gas UST Area #1 North Wall, West Half	02/09/96	6	0.15 ¹	0.013	0.086	0.18
Gas UST Area #1 South Wall	02/09/96	6	< 2.5 ^{1,2,5,6,3}	4.9	12	73
Gas UST Area #1 East Wall	02/09/96	6	< 0.5 ^{1,2}	3.3	4.5	25
Gas UST Area III West Wall, South Half	02/09/96	6	0.5 ^{1,2}	10	11	76
Gas UST Area #1 West Wall, North Half	02/09/96	6	1.2 ^{1,2,5}	3.4	11	63
Gas UST #4 Floor	02/09/96	12	0.57 ^{1,2}	0.5	0.82	3.3
Gas UST Area II2 North Wall	02/09/96	6	3.3 ^{1,2,5,6,8}	31 ^{1,2}	10	54
Gas UST Area #2 South Wall	02/09/96	6	10 ^{1,2,5,6,8}	100 ^{1,2,8}	30 ^{1,2}	180 ^{1,2,8}
Gas UST Area II2 East Wall	02/09/96	6	1.4 ^{1,2,5}	13	5	28
Gas UST Area II2 West Wall	02/09/96	6	< 0.5 ^{1,2}	4.8	7.1	41
Pump Island #1	02/09/96	3	< 0.002	0.0031	< 0.002	0.0055
Pump Island #2	02/09/96		< 0.05 ¹	0.14	< 0.05	3.3
Old Pump Island #1	02/13/96		< 0.5 ^{1,2}	1.4	1.6	< 1.3
Product Line III	02/09/96		0.0021	0.0021	< 0.002	0.0056
Product Line #2	02/09/96		< 0.002	< 0.002	< 0.002	< 0.005
Old Product Line #1	02/13/96		< 0.05 ¹	0.13	0.072	0.18
Used/heating oil north waU	04/15/96		0.0189	0.0179	0.0964	0.581
Used/heating oil south wall	04/15/96		0.002	< 0.002	< 0.002	0.0026
Used/heating oil east wall	04/15/96		0.002	< 0.002	< 0.002	0.0172
Used/heating oil west wall	04/15/96		0.002	< 0.002	0.002	< 0.002
Used/heating oil Floor	04/15/96	6	< 0.002	< 0.002	< 0.002	0.398
SOIL COMPONENT TO GROUNDWATER INGESTION	CLASS I		0.03	12	13	150
	CLASS II		0.17	29	19	150
INGESTION REMEDIATION OBJECTIVES	RESIDENTIAL		12	16,000	7,800	16,000
	COMMERCIAL		100	410,000	200,000	410,000
INHALATION REMEDIATION OBJECTIVES	RESIDENTIAL		0.8	650	400	320
	COMMERCIAL		1.6	650	400	320
CONSTRUCTION WORKER REMEDIATION OBJECTIVES	INGESTION		2,300	410,000	20,000	41,000
	INHALATION		2.2	42	58	5.0

1 = Above Class I Soil to Groundwater Remediation Objective
 2 = Above Class II Soil to Groundwater Remediation Objective
 3 = Above Residential Ingestion Remediation Objective
 4 = Above Commercial Ingestion Remediation Objective
 5 = Above Residential Inhalation Remediation Objective
 6 = Above Commercial Inhalation Remediation Objective

7 = Above Construction Worker Ingestion Remediation Objective
 8 = Above Construction Worker Inhalation Remediation Objective
 Results in milligrams per kilogram (mg/kg)
 • This site has been evaluated based on Class I Remediation Objectives

19-57

TABLE 4
 SOIL BTEX ANALYTICAL RESULTS
 BP SERVICE STATION NO.05167
 2201 NORTH 31¹ STREET
 SPRINGFIELD, ILLINOIS

SAMPLE ID	DATE	DEPTH (FEET)	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
PH-01	09/12/96	4-6	1.84 ^{1,2,5,6}	< 0.5	5.56	10.1 ⁸
PH-02	09/12/96		7.01 ^{1,2,5,6,8}	< 0.5	1.1	76.1 ⁸
PH-03	09/12/96		< 0.002	< 0.002		< 0.002
PH-04	09/12/96		0.01	0.182	0.524	1.59
PH-05	09/12/96		2.64 ^{1,1,5,6,8}	18.5	36.3 ^{1,2}	154 ^{1,2,8}
PH-06	09/12/96		< 0.002	< 0.002	< 0.002	0.002
PH-07	09/12/96	4-6			1	0.0282
MW-19	07/08/97	4		< 0.002	< 0.002	< 0.002
MW-20	07/09/97	4-5		< 0.002	< 0.002	< 0.002
MW-21	07/08/97	2-4		0.0026	< 0.002	0.0056
MW-21	07/08/97	4-5		0.028	0.12	0.14
MW-22	07/08/97			< 0.002	< 0.002	< 0.002
MW-23	07/09/97			< 0.002	< 0.002	< 0.002
ES-01 (replaced with SB-12)	07/08/97			0.27	0.8	2.2
OSB-1	07/08/97	1-3	< 0.002	< 0.002	<	< 0.002
OSB-1	07/08/97	4	< 0.002	< 0.002	< 0.002	< 0.002
OSB-2	07/08/97	2-3	0.0036	0.002	< 0.002	0.007
OSB-2	07/08/97	4-5	0.01	0.025	14	0.026
MW-24 (replaced with SB-10)				0.0058	0.013	0.039
MW-25 (replaced with SD-8)				0.0068	0.0096	0.03
MW-26				0.0076	0.051	0.11
MW-27				< 0.002	< 0.002	< 0.002
MW-28	10/21/98	4-6	< 0.002	< 0.002	< 0.002	< 0.002
SB-01	01/03/02	4-6	0.014	0.044	< 0.0025	0.21
MW-30	01/03/02	3-5	< 0.0027	< 0.0027	< 0.0027	< 0.008
MW-31	04/08/03	3-5	< 0.0026	< 0.0026	< 0.0026	< 0.0077
SB-02	04/08/03	3-4	< 0.0026	< 0.0026	< 0.0026	< 0.0078
SB-03 (replaced with SB-11)					<	< 0.39
SB-04 (replaced with SB-10)					<	< 0.38
SB-05				< 0.13	<	< 0.39
SB-06				12 ^{1,2,5}		69 ⁸
SB-07				< 0.13	<	< 0.38
MW-35	04/01/04	2-4	< 0.13 ¹	<	<	< 0.38
SB-8	07/28/09	3-4	< 0.027	<	<	< 0.202
SB-9	07/28/09	2-4	< 0.0233	< 0.0583	<	< 0.175
SB-10	07/28/09	0-2	< 0.0285	< 0.0713	<	< 0.214
SB-11	07/28/09	0-2	< 0.0239	< 0.0598	< 0.0598	< 0.179
SB-12	07/28/09	3	< 0.0244	< 0.061	< 0.061	< 0.183
SOIL COMPONENT TO GROUNDWATER INGESTION	CLASS I ¹		0.03	12	13	150
	CLASS II		0.17	29	19	150
INGESTION REMEDIATION OBJECTIVES	RESIDENTIAL		12	16,000	7,800	16,000
	COMMERCIAL		100	410,000	200,000	410,000
INHALATION REMEDIATION OBJECTIVES	RESIDENTIAL		0.3	650	400	320
	COMMERCIAL		1.6	650	400	320
CONSTRUCTION WORKER REMEDIATION OBJECTIVES	INGESTION		2,300	410,000	20,000	41,000
	INHALATION		2.2	42	58	5.6

1 = Above Class I Soil to Groundwater Remediation Objective
 2 = Above Class II Soil to Groundwater Remediation Objective
 3 = Above Residential Ingestion Remediation Objective
 4 = Above Commercial Ingestion Remediation Objective
 5 = Above Residential Inhalation Remediation Objective
 6 = Above Commercial Inhalation Remediation Objective

7 = Above Construction Worker Ingestion Remediation Objective
 8 = Above Construction Worker Inhalation Remediation Objective
 Results in milligrams per kilogram (mg/kg)
 * This site has been evaluated based on Class / Remediation Objectives

TABLES
 SOIL PNA ANALYTICAL RESULTS
 BP SERVICE STATION NO.05167
 2210 NORTH 31st STREET
 SPRINGFIELD, ILLINOIS

19-58

Sample ID	Date Sampled	Depth (feet)	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Pyrene
Used/heating oil west wall	04/15/96	4.5	< 0.121	< 0.442	< 0.00871	< 0.0121	< 0.0114	< 0.0154	< 0.101	< 0.02	< 0.141	< 0.141	< 0.0288	< 1.21	< 0.181
Used/heating oil north wall	04/15/96	4.5	< 0.121	< 0.442	< 0.0122	< 0.0165	< 0.0114	< 0.0154	< 0.101	< 0.02	0.362	< 0.141	< 0.0288	< 1.21	< 0.181
Used/heating oil south wall	04/15/96	4.5	< 0.121	< 0.442	< 0.00871	< 0.0121	< 0.0114	< 0.0154	< 0.101	< 0.02	< 0.141	< 0.141	< 0.0288	< 1.21	< 0.181
Used/heating oil east wall	04/15/96	4.5	< 0.121	< 0.442	0.0186	< 0.0121	< 0.0114	< 0.0154	< 0.101	< 0.02	0.729	< 0.141	< 0.0288	< 1.21	< 0.181
Used/heating oil Floor	04/15/96	6	< 0.121	< 0.442	0.0243	0.0159	< 0.0114	< 0.0154	< 0.101	< 0.02	0.301	< 0.141	< 0.0288	< 1.21	< 0.181
PH-7	09/12/96	4-6	< 0.121	< 0.044	< 0.0087	< 0.0121	< 0.011	< 0.0154	< 0.01	< 0.02	< 0.0141	< 0.014	< 0.0288	< 0.067	< 0.018
MW-24	10/21/98	4-6	< 0.6	< 0.03	< 0.03	< 0.035	< 0.02	< 0.025	< 0.05	< 0.045	< 0.1	< 0.14	< 0.08	< 0.3	< 0.02
MW-25	10/21/98	3-4	< 0.6	< 0.03	< 0.03	< 0.035	< 0.02	< 0.025	< 0.05	< 0.045	< 0.1	< 0.14	< 0.08	< 0.3	< 0.02
MW-26	10/21/98	1-2	< 0.6	< 0.03	< 0.03	< 0.035	< 0.02	< 0.025	< 0.05	< 0.045	< 0.1	< 0.14	< 0.08	< 0.3	< 0.02
MW-27	10/21/98	4-6	< 0.6	< 0.03	< 0.03	< 0.035	< 0.02	< 0.025	< 0.05	< 0.045	< 0.1	< 0.14	< 0.08	< 0.3	< 0.02
MW-28	10/21/98	4-6	< 0.6	< 0.03	< 0.03	< 0.035	< 0.02	< 0.025	< 0.05	< 0.045	< 0.1	< 0.14	< 0.08	< 0.3	< 0.02
SOIL COMPONENT TO GROUNDWATER	CLASS I*		570	12,000	2	5	49	8	160	2	4,500	560	14	12	4,200
INGESTION	CLASS II		2,900	59,000	8	25	250	82	800	7.6	21,000	2,800	69	18	21,000
SOIL INGESTION REMEDIATION OBJECTIVES	RESIDENTIAL		4,700	23,000	0.9	0.9	9	0.09	88	0.09	3,100	3,100	0.9	1,600	2,500
	COMMERCIAL		120,000	610,000	8	8	78	0.8	780	0.8	82,000	82,000	8	41,000	61,000
SOIL INHALATION REMEDIATION OBJECTIVES	RESIDENTIAL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	170	NA
	COMMERCIAL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	270	NA
CONSTRUCTION WORKER REMEDIATION OBJECTIVES	INGESTION		120,000	610,000	170	170	1,700	17	17,000	17	82,000	82,000	170	41,000	61,000
	INHALATION		—	—	—	—	—	—	—	—	—	—	—	1.8	—

1 = Above Class I Soil to Groundwater Remediation Objective
 2 = Above Class II Soil to Groundwater Remediation Objective
 3 = Above Residential Ingestion Remediation Objective
 4 = Above Commercial Ingestion Remediation Objective
 5 = Above Residential Inhalation Remediation Objective
 6 = Above Construction Worker Ingestion Remediation Objective
 7 = Above Construction Worker Inhalation Remediation Objective
 * If site has been evaluated based on Class I Remediation Objectives
 Concentrations in milligrams per kilogram (mg/kg)

FIGURES

Corrective Action Plan Addendum
IEMA Incident Nos. 941260 & 960236

BP Service Station #5167
2201 North 31st Street (Dirksen Parkway)
Springfield, Sangamon County, Illinois

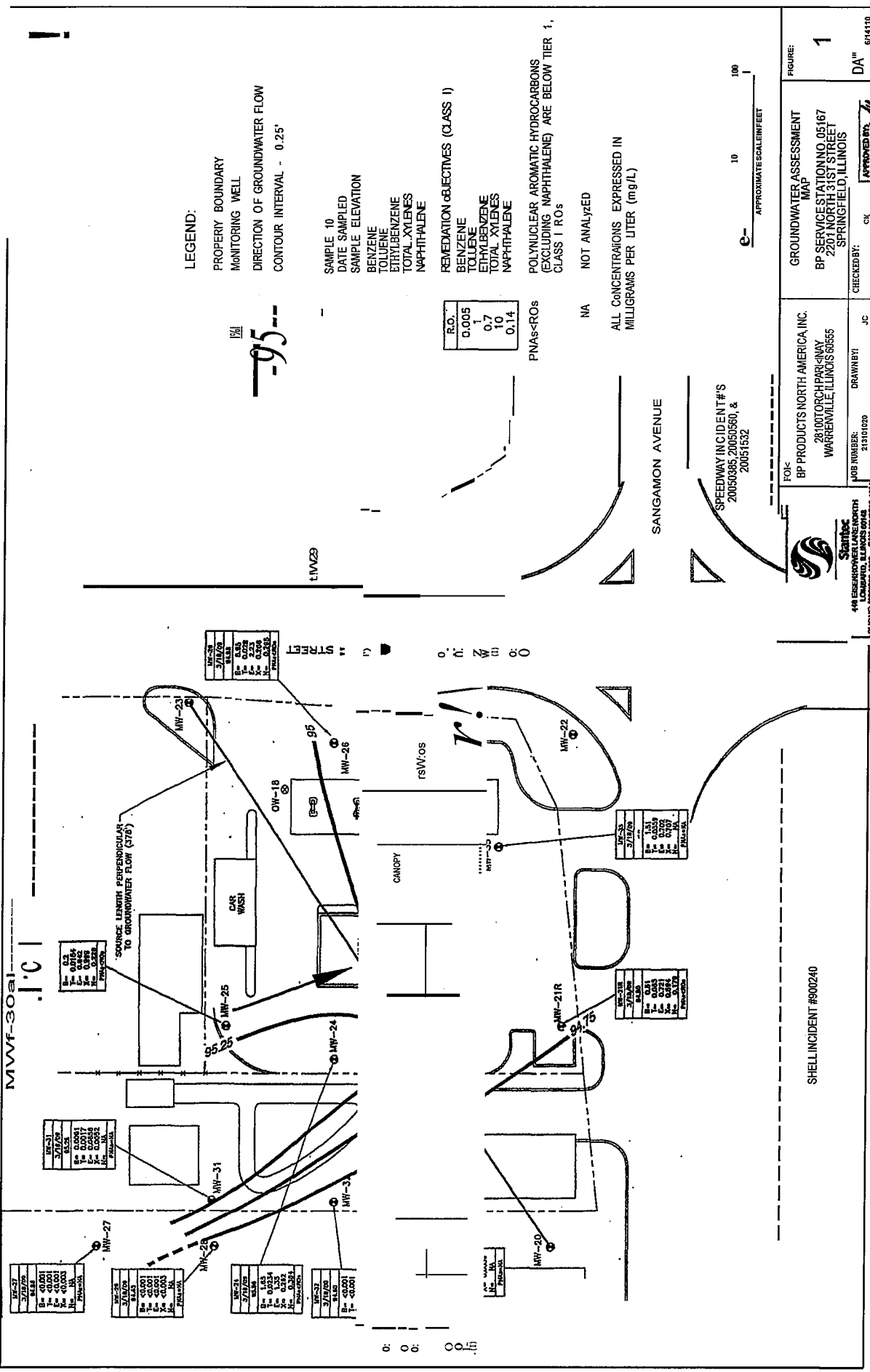


FIGURE: 1

GROUNDWATER ASSESSMENT MAP
BP SERVICE STATION NO. 05167
2201 NORTH 31ST STREET
SPRINGFIELD, ILLINOIS

FOR: BP PRODUCTS NORTH AMERICA, INC.
28100 TORCHPARKWAY
WARRENVILLE, ILLINOIS 60555

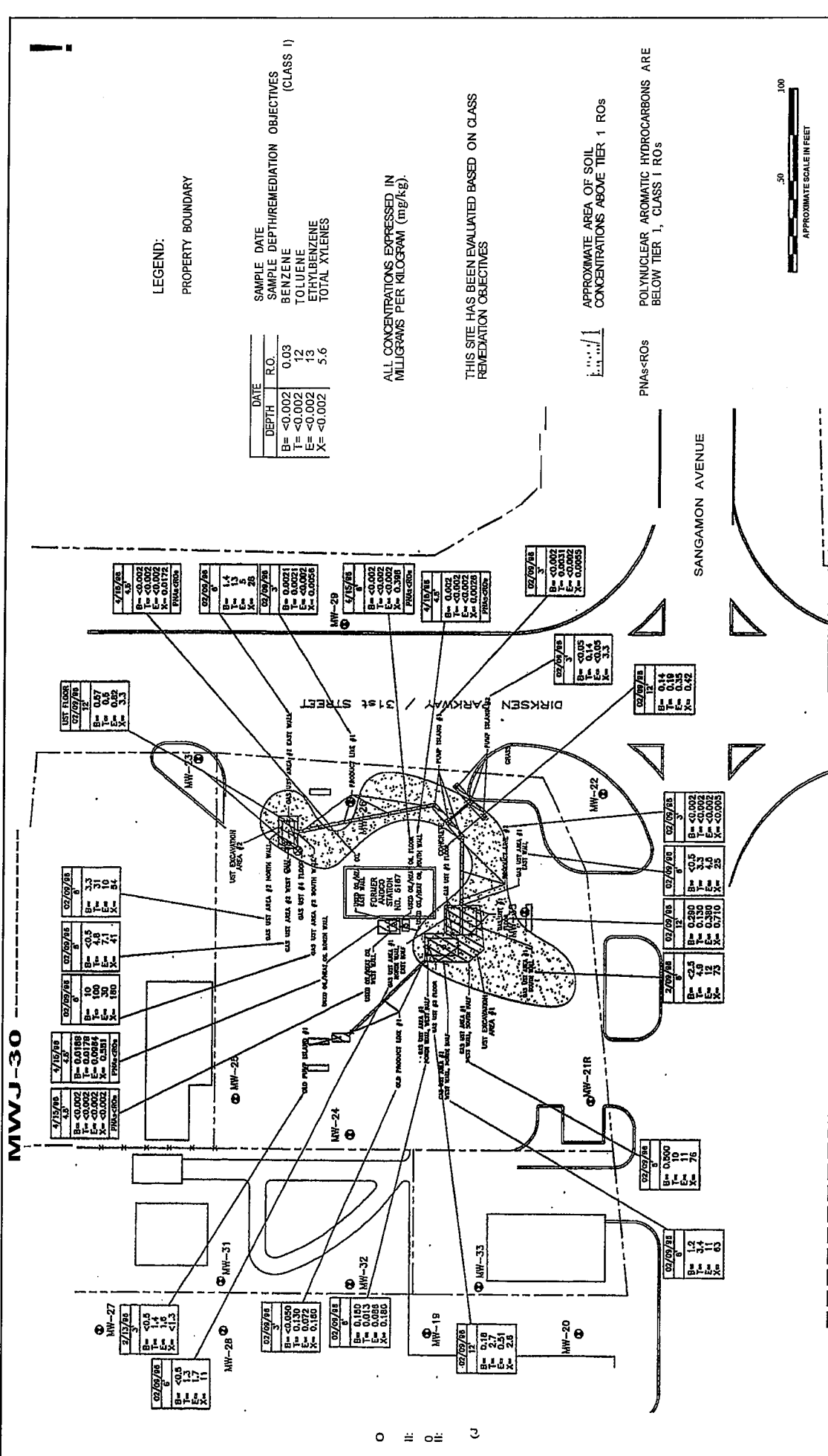
448 EISENHOWER LAKE NORTH
LOMBARD, ILLINOIS 60148
PHONE: 630.292.1000 FAX: 630.292.1001

MOB NUMBER: 213101020
DRAWN BY: JC
CHECKED BY: CK
APPROVED BY: [Signature]

DA 6/14/10

SHELL INCIDENT #900240

19-101



FOR:
BP PRODUCTS NORTH AMERICA, INC.
28100 TORCH PARKWAY
WARRENVILLE, ILLINOIS 60555

SOIL ASSESSMENT MAP
BP SERVICE STATION NO. 05167
2801 NORTH 31ST STREET
SPRINGFIELD, ILLINOIS

FIGURE: 2A

DATE: 6/14/10

STANTEC
414 EISENHOWER LANE, SUITE 100
LOMBARD, ILLINOIS 60148
PHONE: (630) 722-1800 FAX: (630) 722-9893

CHECKED BY: JC
APPROVED BY: [Signature]

JOB NUMBER: 23101020
DRAWN BY: [Signature]

MWJ-30

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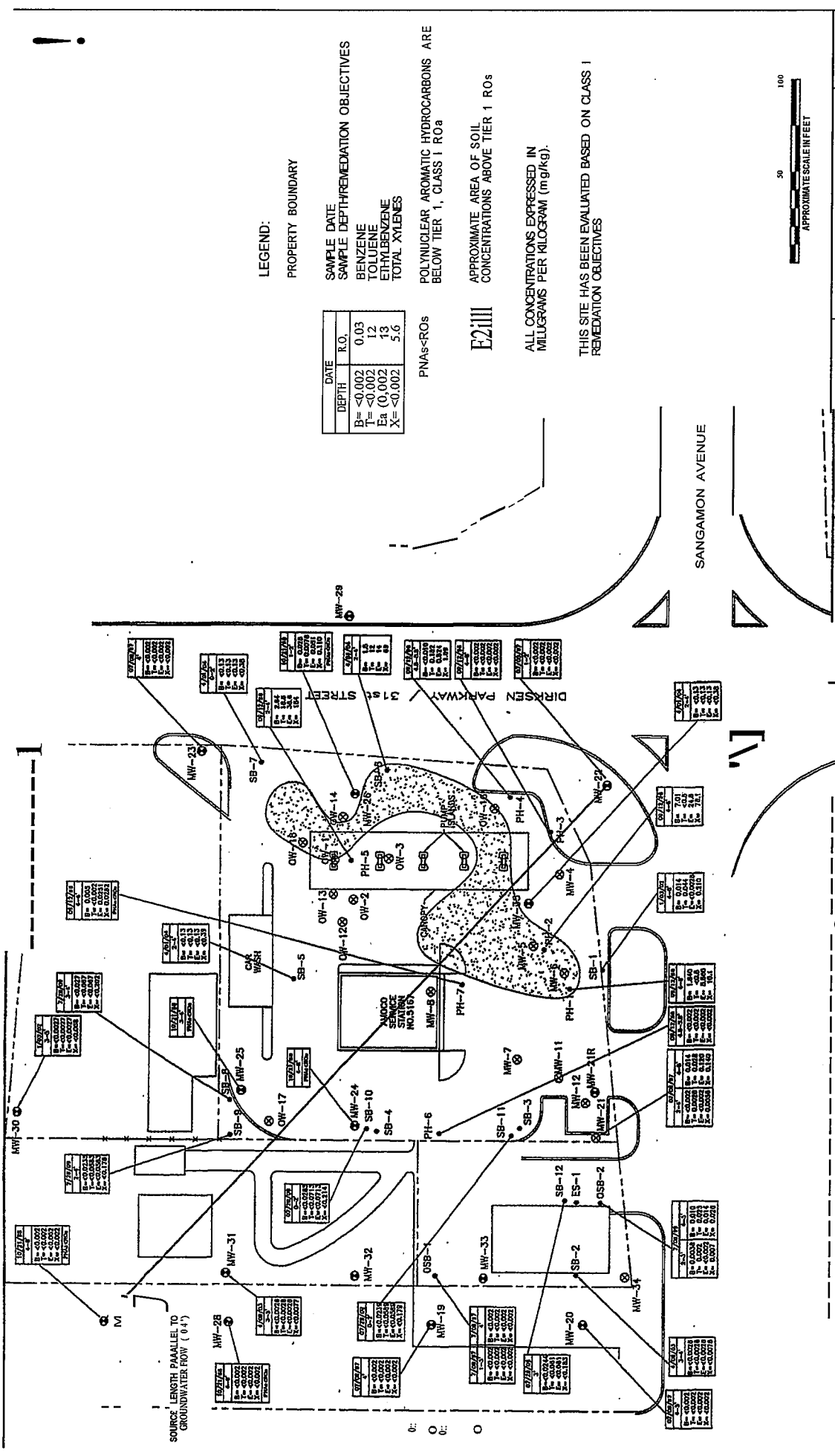
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LEGEND:

PROPERTY BOUNDARY

SAMPLE DATE
 SAMPLE DEPTH/REMEDIATION OBJECTIVES
 BENZENE
 TOLUENE
 ETHYLBENZENE
 TOTAL XYLENES

DEPTH	DATE	R.O.
D= <0.002	7/2/02	0.03
Ea (0.002)	7/2/02	12
X= <0.002	7/2/02	13
		5.6

PNAs <ROs

POLYNUCLEAR AROMATIC HYDROCARBONS ARE BELOW TIER 1, CLASS I ROa

APPROXIMATE AREA OF SOIL CONCENTRATIONS ABOVE TIER 1 ROs

E21111

ALL CONCENTRATIONS EXPRESSED IN MILLIGRAMS PER KILOGRAM (mg/kg).

THIS SITE HAS BEEN EVALUATED BASED ON CLASS I REMEDIATION OBJECTIVES

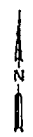
FOR: SOIL ASSESSMENT MAP
 BP PRODUCTS NORTH AMERICA, INC.
 26100 TORCH PARKWAY
 WARRENVILLE, ILLINOIS 60555

BP SERVICE STATION NO. 05187
 2201 NORTH 31ST STREET
 SPRINGFIELD, ILLINOIS

STATITEC
 4 EISENHOWER LANE NORTH
 CHICAGO, ILLINOIS 60648
 PHONE: (603) 722-1860 FAX: (603) 722-1801

JOB NUMBER: 215101020
 DRAWN BY: JC
 CHECKED BY: CK
 APPROVED BY: [Signature]

FIGURE: 28
 DATE: 8/14/10



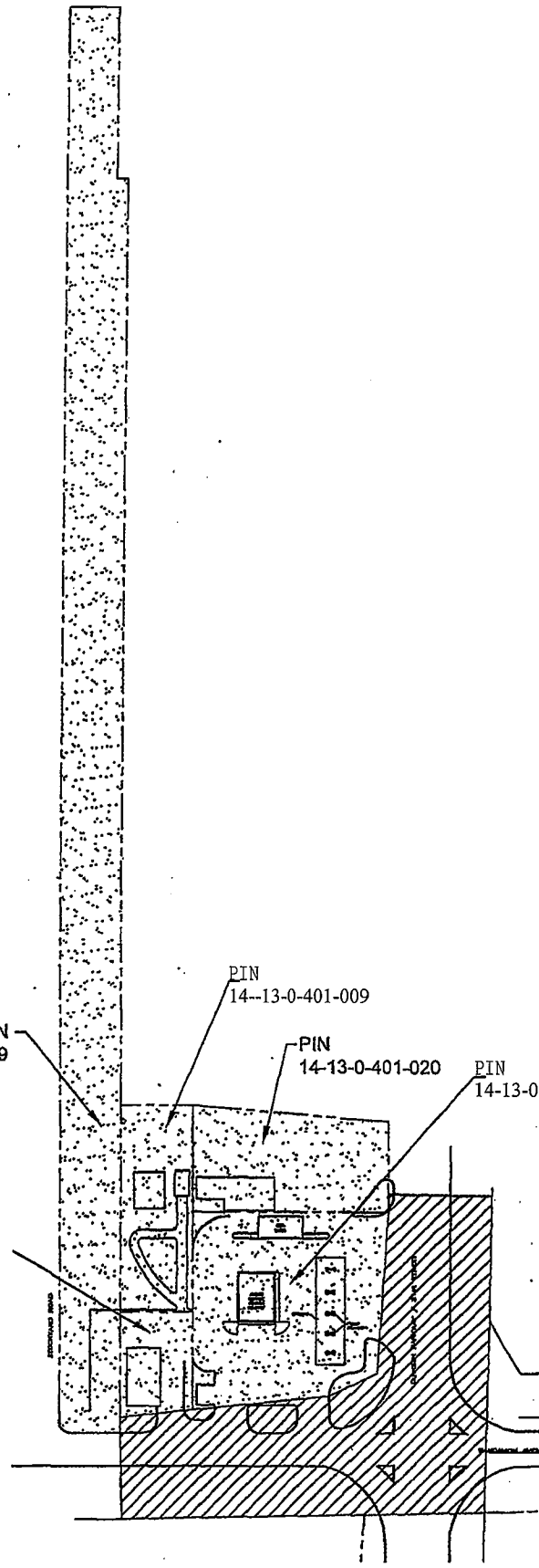
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PIN 14-13-0-401-039

PIN 14-13-0-401-009

PIN 14-13-0-401-020

PIN 14-13-0-401-015

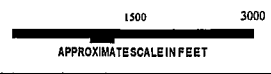


LEGEND:

PROPERTY BOUNDARY

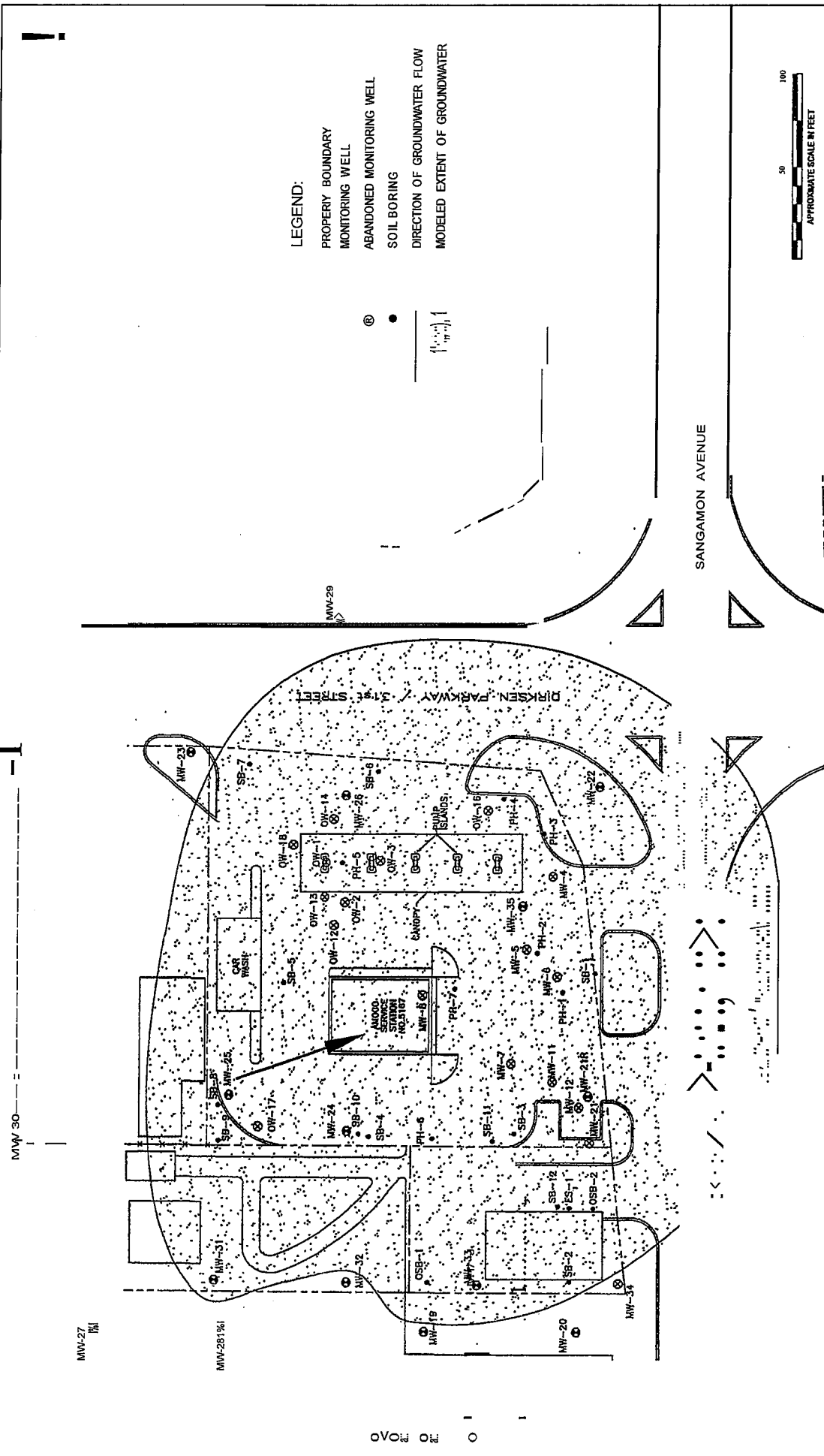
GROUNDWATER ORDINANCE AREA

IOOT HIGHWAY AUTHORITY AGREEMENT



<p>Slantec 446 EISENHOWER BLVD N LOMBARD, ILLINOIS 60148 PHONE: (630) 792-1680 FAX: (630) 792-1691</p>	<p>BP PRODUCTS NORTH AMERICA, INC. 28100 TORCH PLAZA WARRENVILLE, ILLINOIS 60555</p> <p>JOSHI, JIMBER 213101020</p>	<p>PROPOSED INSTITUTIONAL CONTROLS MAP BP SERVICE STATION NO. 05167 2201 NORTH 31ST STREET SPRINGFIELD, ILLINOIS</p>	<p>FIGURE: 3</p> <p>DATE: 4/28/10</p>
<p>DRAWN BY: JC</p>		<p>CHECKED BY: CK</p>	<p>APPROVED BY: [Signature]</p>

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Stantec 448 ESENHOWER LANE NORTH OMBARD, ILLINOIS 60148 PHONE: (630) 235-1000 FAX: (630) 235-1684		FOR: BP PRODUCTS NORTH AMERICA, INC. 78100 TORCH PARKWAY WARRENVILLE, ILLINOIS 60555	FIGURE: 4
JOB NUMBER: 23533000	DRAWN BY: J.C.	CHECKED BY: C.K.	DATE: 1/28/04
MODELED GROUNDWATER MAP BP SERVICE STATION NO. 05167 2201 NORTH 31ST STREET SPRINGFIELD, ILLINOIS			

SANGAMON AVENUE

MW-30

MW-27

MW-281961

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