April 17, 2020

Mr. Brandon Pursel
USEPA – Region 5
77 West Jackson Blvd., LU-16J
Chicago, IL 60604-3590

Re: Remedial Study Report for Former Coke Plant Area
ArcelorMittal Tecumseh Redevelopment Inc., East Chicago, Indiana
RCRA Docket No. R3013-5-03-002; USEPA Facility ID No. IND 005 462 601

Dear Mr. Pursel:

This letter has been prepared in response to the United States Environmental Protection Agency (USEPA) letter dated March 6, 2020, regarding the referenced Former Coke Plant located in East Chicago, Indiana. The USEPA letter provided comments to the February 6, 2020 *Remedial Study Report - Former Coke Plant* (the "Report") submitted to the USEPA by ArcelorMittal, USA. The purpose of the Report was to summarize the methodologies used to evaluate remedial technologies to be used to address light non-aqueous phase liquid (LNAPL) and LNAPL-related groundwater contamination at the Former Coke Plant. The USEPA requested the Report as part of a site-wide strategy to address contamination as a result of historic operations at facility. The USEPA's comments are identified below as numbered in the March 6, 2020 letter and the corresponding responses are provided below each comment in ***bold and italic font***.

GENERAL COMMENTS

The Report incorporates conclusions from several years of studies performed at the Former Coke Plant using several different technologies independently. Following these studies and using various metrics recommended by groups such as the Interstate Technology and Regulatory Council (ITRC) and the American Petroleum Institute (API), ArcelorMittal was able to conclude which technologies are implementable. The Report indicates that *in-situ* chemical oxidation (ISCO), surfactant enhanced recovery (SER), and thermal methods such as steam enhanced extraction (SEE) would all be successful or potentially successful technologies that would be used address LNAPL at the Former Coke Plant.

The possibility of a multi-remedy approach had been informally discussed previously, and the USEPA believes this approach should be considered in this Report for several reasons. First, based on the results of the field pilot studies and bench scale studies, it appears that each technology may be successful, however, may not be successful in singularity toward achieving cleanup goals such as meeting Data Quality Objectives (DQOs). SER may address much of the LNAPL, but would likely result in eventual asymptotic removal rates requiring a re-evaluation of the selected remedy's ability to meet DQOs in the future. Second, it is not likely SER would address dissolved phase or residual phase LNAPL in a reasonable amount of time. Groundwater cleanup goals based on current and reasonably anticipated future use scenarios are over three orders of magnitude less than

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concentrations reported at several monitoring wells, and natural source zone depletion rates appear to be low based on existing groundwater quality and analytical data. Results included in the December 2018 *Pre-Design Report* suggests that even with biostimulation, microbial activity or redox conditions are low and not likely to significantly reduce groundwater concentrations. For these reasons, the USEPA believes the Work Plan should also discuss the applicability or possibility of multiple technologies being used in a step-wise strategy.

Response

We are in agreement with the USEPA that natural LNAPL source zone depletion rates appear to be low based on existing groundwater monitoring data. The USEPA further indicates that it is not likely that surfactant-enhanced recovery would address residual phase LNAPL in a reasonable amount of time. It should be noted, however, that non-ionic surfactants can selectively desorb sorbed organic contaminants and render NAPLs miscible in the aqueous phase. Such desorption results in the removal of residual LNAPL entrained in the soil matrix via micelle formation. Based on the results of October 2017 pilot testing, substantial LNAPL removal would likely be achieved via completion of several surfactant injection-extraction (i.e., "push-pull") events over a 1- to 2-year period.

The September 2016 Pre-Design Work Plan (Revision 2) indicated that petroleum VOCs including benzene, ethylbenzene, toluene, and naphthalene were detected in July 2013 LNAPL samples obtained from monitoring wells MW-820S and MW-821S, as follows: naphthalene – 27,000 milligrams per kilogram [mg/kg], benzene – 24 to 270 mg/kg, ethylbenzene – 17 to 130 mg/kg, and toluene 1 to 120 mg/kg. As would be expected, the maximum concentrations of naphthalene, benzene, ethylbenzene, and toluene in groundwater have been detected at wells in close proximity to the identified LNAPL source (at well MW-820S for naphthalene [2.9 milligrams per liter or mg/L], well MW-821D for benzene [280 mg/L], and well MW-819S for ethylbenzene [1.3 mg/L] and toluene [15 mg/L]). Future LNAPL source remedial action will result in reduction of mass flux of dissolved naphthalene, benzene, ethylbenzene, and toluene to locations hydraulically downgradient of the source.

Based on groundwater quality data obtained to date, maximum petroleum VOC concentrations further downgradient of the LNAPL source are located to the northeast of, and deeper than, the on-site sheet pile engineered gap. July 2013 and September 2017 groundwater samples from the shallow monitoring wells near the breach (MW-809S, MW-810S, MW-826S, and MW-827S) did not contain exceedances of IDEM Screening Levels for naphthalene, benzene, ethylbenzene, or toluene, with the exception of benzene in one sample on one date (the September 2017 sample from well MW-809S [2.2 mg/L] as shown on Figure 1). The sheet pile wall therefore represents an effective physical hydraulic barrier, which restricts movement of the identified petroleum VOC-impacted groundwater to the Indiana Harbor Ship Canal.

Section 4.4.1 of the USEPA-approved September 2016 Pre-Design Work Plan concluded that the sheet pile wall represents an effective physical hydraulic barrier and that future LNAPL source remedial action will be conducted in conjunction with implementation of a downgradient groundwater monitoring program. Based on relatively high estimated advective groundwater flow rates at the site, the planned LNAPL source remedial action should result in reduction in downgradient concentrations within a reasonable timeframe. As indicated in the September 2016 Pre-Design Work Plan, if Indiana Harbor Ship Canal sentinel wells MW-809S, MW-810S, MW-826S, and MW-827S indicate increasing petroleum VOC or naphthalene concentrations to levels of concern, then active groundwater remediation near the Canal will be contemplated. Section 3.3.2 of the Remedial Study Report (Revision 1) has been updated to re-affirm this statement.

SPECIFIC COMMENTS

Section 3: Conceptual Site Model

1. Section 3.3.1: The USEPA recognizes that previous discussions and reports, such as the referenced SLERA and Pre-Design Report, have included USEPA's acceptance of the dilution-attenuation methodology that has been used to assess risks to off-site receptors in surface water bodies. It is important to note that these factors have limited use toward final cleanup goals; however, they can be useful for prioritization especially when some contaminants are highly volatile, such as benzene.

Response

The relevance of contaminant volatility (e.g., benzene) is unclear as there is no vapor intrusion risk to buildings located within this portion of the site. Moreover, as indicated in the Pre-Design Report Addendum dated June 4, 2019, the buildings located within this portion of the site are unoccupied. The vapor intrusion pathway is therefore incomplete, and exposure to volatile constituents in outdoor air is currently being addressed through institutional controls and by adherence to Occupational Safety and Health Administration standards. The vapor intrusion pathway will be evaluated in the event of future site construction.

2. Section 3.3.2: The focused HHRA performed in 2016 and updated as part of the *Remedial Study Report* states that no constituents in groundwater pose an unacceptable risk for human receptors. This conclusion considers the fill material and geotextile membrane, as well as the dig-permit program at ArcelorMittal which specifies standard operating procedures when employees or construction workers may come into contact with deep contaminated media. No revision is necessary, but it is important to note that this claim can only be supported while this program and these site features are in place. If the site is ever sold or redeveloped, a site-specific HHRA is recommended to evaluate the assumption the dig-permit program is no longer in place and the fill and membrane is no longer in place.

Response

Acknowledged.

Section 4: Corrective Measures Objectives

3. The objectives described are lacking in some specific detail; however, this comment may be appropriately addressed in the CMIWP discussed in Section 8 of the Work Plan. First, a decision matrix which balances performance metrics and decision endpoints while also complimenting performance measures associated with the selected remedy should be proposed. Examples of a decision endpoint might include asymptotic reduction of LNAPL balanced with operation costs and the estimated volume of product remaining. Note that typically multiple lines of evidence are preferred. ArcelorMittal should also specify which conditions from the CA725 and CA750 are being considered, including DQOs for the contaminants targeted by the selected remedy strategy. Finally, surface water concentrations are based on modelling performed to estimate dilution and attenuation factors which were then used to estimate risk to receptors. Per Comment 1, above, this strategy provides limited use for corrective measures objectives outside of prioritization. Instead, objectives addressing human exposures in surface water should reflect 327 IAC 2-11-5 of the State of Indiana rules regarding groundwater quality.

Response

New Table 4-1 provided as part of the enclosed Remedial Study Report (Revision 1) identifies performance metrics for LNAPL removal. In terms of LNAPL saturation, the key performance metric will be reduction or elimination of measurable LNAPL in wells. With respect to LNAPL

composition, the key performance metric will be to abate accumulation of unacceptable constituent concentrations in the dissolved phase downgradient of the LNAPL source. A decision endpoint will include evaluation of asymptotic reduction of LNAPL balanced with cumulative remediation costs. Completed Forms CA725 and CA750 are provided as Appendix A of the Remedial Study Report (Revision 1).

327 IAC 2-11-5 of the State of Indiana rules regarding groundwater quality indicate that each class of ground water described in Section 4 of this rule shall meet the following protective criteria:

1) ***Groundwater quality shall be maintained, at a minimum, to protect the current and reasonably expected future use of the groundwater.***
2) ***Groundwater shall be maintained and protected to ensure that a contaminant concentration attributable to human activity does not increase in a drinking water well.***
3) ***For waters of the state, surface water quality standards shall be met in the surface water at the groundwater-surface water interface.***

With regard to Criteria 1 and 2, groundwater on the peninsula is not used as drinking water (installation of water-supply wells is prohibited by institutional controls) and site groundwater does not impact any drinking water source. A groundwater use restriction will be implemented for the entire parcel. In addition, a deed restriction will be implemented to ensure that, should ArcelorMittal vacate the site, future users of the property will understand site risks and use appropriate protection during intrusive construction activities. With respect to Criterion 3, the Tier 3 estimated surface water concentration identified in the Screening Level Ecological Risk Assessment (SLERA) Addendum (appended to the December 2018 Pre-Design Report) is 0.0048 mg/L benzene. Minimum surface water quality criteria are provided in 327 IAC 2-1.5-8 of the State of Indiana rules. For benzene, the nondrinking water criteria for noncancer and cancer risks are 0.51 mg/L and 0.31 mg/L, respectively. The drinking water criteria for noncancer and cancer risks for benzene are 0.019 mg/L and 0.012 mg/L, respectively. The estimated surface water benzene concentration identified in the SLERA Addendum does not exceed any of the minimum surface water quality criteria provided in 327 IAC 2-1.5-8 for benzene. This information is provided in Section 4 of the Remedial Study Report (Revision 1).

If you have any questions regarding the information contained herein, please feel free to contact me at your convenience.

Regards,

John R. Hill

John R. Hill
Sr. Engineer, Environmental Affairs and Real Estate

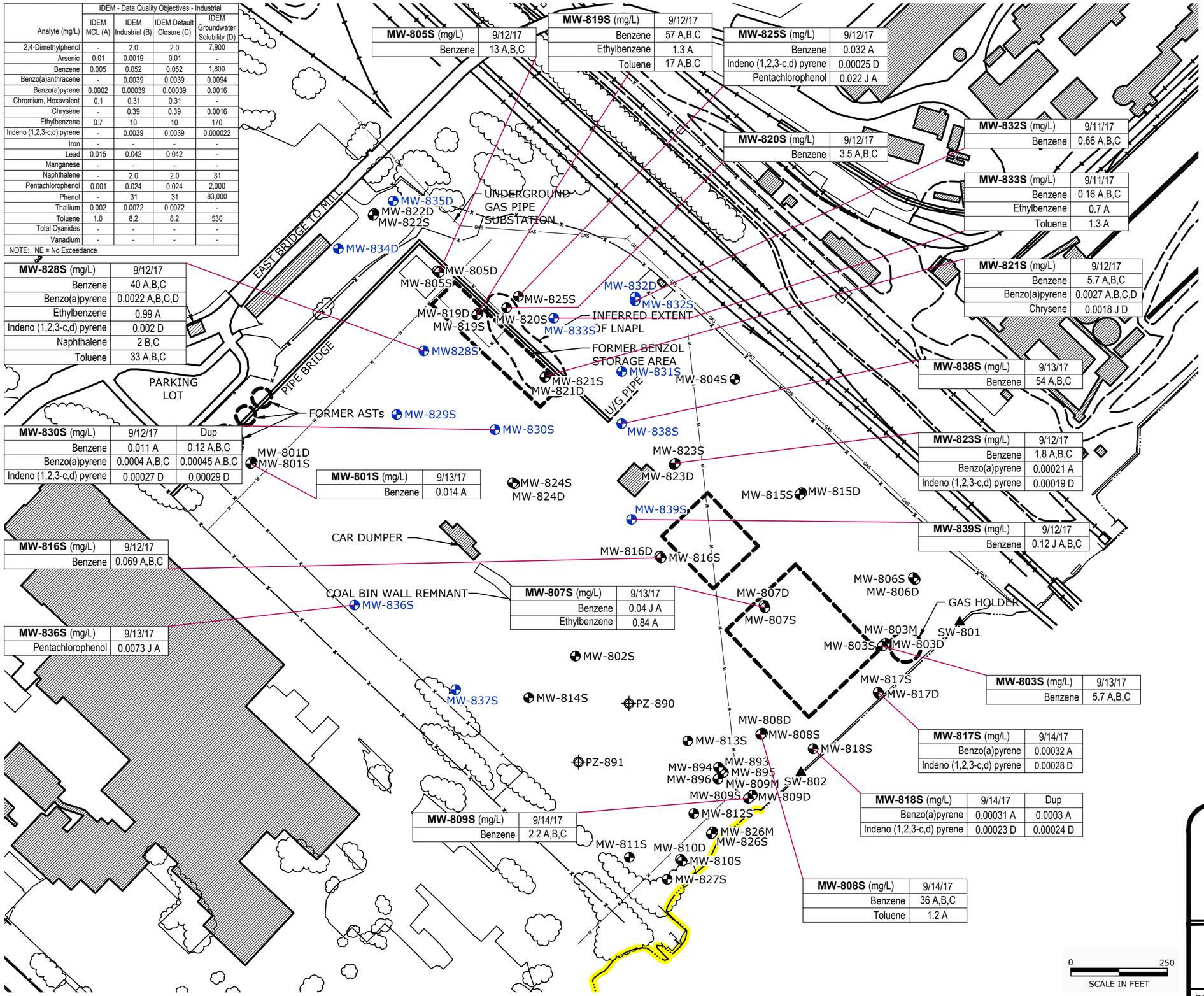
Enclosures: Figure 1
Remedial Study Report (Revision 1)

cc: Cary Mathias, ArcelorMittal USA
Jeanne Tarvin, Ramboll

FIGURE

Analyte (mg/L)	IDEM - Data Quality Objectives - Industrial			
	IDEM MCL (A)	IDEM Industrial (B)	IDEM Default Closure (C)	IDEM Groundwater Solubility (D)
2,4-Dimethylphenol	-	2.0	2.0	7,900
Arsenic	0.01	0.0019	0.01	-
Benzene	0.005	0.052	0.052	1,800
Benzo(a)anthracene	-	0.0039	0.0039	0.0094
Benzo(a)pyrene	0.0002	0.00039	0.00039	0.0016
Chromium, Hexavalent	0.1	0.31	0.31	-
Chrysene	-	0.39	0.39	0.0016
Ethylbenzene	0.7	10	10	170
Indeno (1,2,3-c,d) pyrene	-	0.0039	0.0039	0.000022
Iron	-	-	-	-
Lead	0.015	0.042	0.042	-
Manganese	-	-	-	-
Naphthalene	-	2.0	2.0	31
Pentachlorophenol	0.001	0.024	0.024	2,000
Phenol	-	31	31	83,000
Thallium	0.002	0.0072	0.0072	-
Toluene	1.0	8.2	8.2	530
Total Cyanides	-	-	-	-
Vanadium	-	-	-	-

NOTE: NE = No Exceedance



MW-805S (mg/L)	9/12/17
Benzene	13 A,B,C

MW-819S (mg/L)	9/12/17
Benzene	57 A,B,C
Ethylbenzene	1.3 A
Toluene	17 A,B,C

MW-825S (mg/L)	9/12/17
Benzene	0.032 A
Indeno (1,2,3-c,d) pyrene	0.00025 D
Pentachlorophenol	0.022 J A

MW-820S (mg/L)	9/12/17
Benzene	3.5 A,B,C

MW-832S (mg/L)	9/11/17
Benzene	0.66 A,B,C

MW-833S (mg/L)	9/11/17
Benzene	0.16 A,B,C
Ethylbenzene	0.7 A
Toluene	1.3 A

MW-828S (mg/L)	9/12/17
Benzene	40 A,B,C
Benzo(a)pyrene	0.0022 A,B,C,D
Ethylbenzene	0.99 A
Indeno (1,2,3-c,d) pyrene	0.002 D
Naphthalene	2 B,C
Toluene	33 A,B,C

MW-821S (mg/L)	9/12/17
Benzene	5.7 A,B,C
Benzo(a)pyrene	0.0027 A,B,C,D
Chrysene	0.0018 J D

MW-838S (mg/L)	9/13/17
Benzene	54 A,B,C

MW-830S (mg/L)	9/12/17	Dup
Benzene	0.011 A	0.12 A,B,C
Benzo(a)pyrene	0.0004 A,B,C	0.00045 A,B,C
Indeno (1,2,3-c,d) pyrene	0.00027 D	0.00029 D

MW-823S (mg/L)	9/12/17
Benzene	1.8 A,B,C
Benzo(a)pyrene	0.00021 A
Indeno (1,2,3-c,d) pyrene	0.00019 D

MW-801S (mg/L)	9/13/17
Benzene	0.014 A

MW-839S (mg/L)	9/12/17
Benzene	0.12 J A,B,C

MW-816S (mg/L)	9/12/17
Benzene	0.069 A,B,C

MW-807S (mg/L)	9/13/17
Benzene	0.04 J A
Ethylbenzene	0.84 A

MW-836S (mg/L)	9/13/17
Pentachlorophenol	0.0073 J A

MW-803S (mg/L)	9/13/17
Benzene	5.7 A,B,C

MW-817S (mg/L)	9/14/17
Benzo(a)pyrene	0.00032 A
Indeno (1,2,3-c,d) pyrene	0.00028 D

MW-818S (mg/L)	9/14/17	Dup
Benzo(a)pyrene	0.00031 A	0.0003 A
Indeno (1,2,3-c,d) pyrene	0.00023 D	0.00024 D

MW-809S (mg/L)	9/14/17
Benzene	2.2 A,B,C

MW-808S (mg/L)	9/14/17
Benzene	36 A,B,C
Toluene	1.2 A

LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- MONITORING WELL INSTALLED IN 2017
- PIEZOMETER (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA
- LOCATION OF BREACHED SHEET PILE WALL

NOTE:

SEWER, FIRE, WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

J = ESTIMATED CONCENTRATION BETWEEN METHOD DETECTION LIMIT AND REPORTING LIMIT

DATA QUALITY OBJECTIVE EXCEEDANCES IN SHALLOW GROUNDWATER - ORGANICS (SEPTEMBER 2017)

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

FIGURE 1

DRAFTED BY: HJW | DATE: 4/6/20 | 1690014719

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REMEDIAL STUDY REPORT (REVISION 1)

Prepared for:
ArcelorMittal USA LLC
Richfield, Ohio

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Date:
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1690014719

REMEDIAL STUDY REPORT (REVISION 1)

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

ENVIRONMENT
& HEALTH

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Appendix A: Environmental Indicator Determination
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ACRONYMS AND ABBREVIATIONS

1,1,1-TCA	1,1,1-trichloroethane
1,2-DCA	1,2-dichloroethane
ArcelorMittal	ArcelorMittal USA LLC (ArcelorMittal West)
AOC	Area of Concern
bgs	below ground surface
BP	British Petroleum
cm/sec	centimeters per second
cSt	centistoke
COD	chemical oxygen demand
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	Conceptual Site Model
CMO	Corrective Measure Objectives
DQO	data quality objective
ERH	electrical resistance heating
ET-DSP	Electro-Thermal Dynamic Stripping Process
g/day	gallons per day
g/kg	grams per kilogram
g/mL	grams per milliliter
GAC	granular activated carbon
HQ	Hazard Quotient
HHRA	Human Health Risk Assessment
IDEM	Indiana Department of Environmental Management
IW	injection well
ISCO	in-situ chemical oxidation
ISTR	in-situ thermal remediation
ITRC	Interstate Technology and Regulatory Council Guidance
ISG-IH	ISG-Indiana Harbor
LNAPL	light non-aqueous phase liquid
MS/MSD	matrix spike/matrix spike duplicate
MCL	maximum contaminant level
MSL	mean sea level
MDL	method detection limit
µg/L	micrograms per liter
mg/kg	milligram per kilogram
mg/L	milligrams per liter
MW	monitoring well
NCP	National Contingency Plan
NSZD	natural source zone depletion
NFA	No Further Action
NAPL	non-aqueous phase liquid
OSHA	Occupational Safety and Health Administration
O&M	operation and maintenance

PID	photoionization detector
PZ	piezometer
PAH	polycyclic aromatic hydrocarbon
PRG	Preliminary Remediation Goal
QAPP	Quality Assurance Project Plan
QC	Quality Control
Ramboll	Ramboll US Corporation
RL	reporting limit
Method API RP40	Residual Saturation by Water Drive Test
RCRA	Resource Conservation and Recovery Act
RBCs	Risk Based Concentrations
RISC	Risk Integrated System of Closure
SLERA	Screening Level Ecological Risk Assessment
SVOC	semi-volatile organic compound
SVE	soil vapor extraction
SB	soil boring
SM	Standard Method
SEE	steam enhanced extraction
STS	STS Consultants, Ltd.
Tecumseh	Tecumseh Redevelopment, Inc.
PCE	tetrachloroethene
TOC	total organic carbon
TOD	total oxidant demand
UVOST®	Ultra-Violet Optical Screening Tool
USEPA	United States Environmental Protection Agency
UCL	upper confidence limit
VOC	volatile organic compound

CERTIFICATION

I certify that the information contained in or accompanying this submission is true, accurate, and complete (to the best of our knowledge).

Cary Mathias
Regional Manager
Tecumseh Redevelopment

April 17, 2020
Date

1. INTRODUCTION AND BACKGROUND

On behalf of Tecumseh Redevelopment, Inc. (Tecumseh) , Ramboll US Corporation (Ramboll) has prepared this Remedial Study Report (Revision 1) related to the former Coke Plant property (the "site"), which is owned by Tecumseh (Figure 1-1 and Figure 1-2). Numerous subsurface investigations have been conducted to date at the site in response to an October 2003 United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) 3013 Order for the Tecumseh property and the ArcelorMittal Indiana Harbor West Mill. These investigations have revealed the presence of light non-aqueous phase liquid (LNAPL) at the site. The USEPA RCRA 3013 Order is limited to monitoring, testing, analysis, and reporting to document the nature and extent of hazardous substances at the site.

This Remedial Study Report (Revision 1)has been prepared as a follow-up to Ramboll's June 2019 *Pre-Design Report Addendum for the Former Coke Plant Area* and as requested by the USEPA in the subsequent USEPA approval letter dated July 29, 2019. Pursuant to a USEPA letter dated April 28, 2015, the purpose of this Remedial Study Report (Revision 1) is to identify, evaluate, and recommend corrective measures to remove LNAPL identified at the site. The following sections provide the current site conditions, a Conceptual Site Model (CSM), proposed clean-up objectives, identification and screening of corrective measure technologies, evaluation of corrective measures, and recommendation and justification of the preferred corrective measure.

1.1 Site Description and History

The West Mill property is located at 3001 Dickey Road in East Chicago, Lake County, Indiana. The property covers approximately 1,200 acres along the southern shore of Lake Michigan and the Indiana Harbor Ship Canal. The West Mill operations have been producing steel since the 1910s, with the earliest operations occupying the mainland areas of the property. The former Coke Plant property was historically associated with the larger steel making complex. It has been recently redeveloped and is currently leased to British Petroleum (BP) for use as a construction staging area.

The steel making complex originally commenced operations around 1912 as the Mark Steel Company. It was later operated by Youngstown Sheet and Tube Company (Youngstown, Pennsylvania), Jones and Laughlin Steel Corporation (Pittsburgh, Pennsylvania), and LTV Steel (Cleveland, Ohio). In April 2002, International Steel Group, Inc. was formed and acquired the majority of the former LTV Indiana Harbor Works facility. The remaining portions of the former LTV Indiana Harbor Works facility were acquired by Tecumseh. The ISG and Tecumseh properties were subsequently acquired by Mittal Steel USA and ultimately ArcelorMittal.

The location of the former Coke Plant property is inland from the peninsula, along the Indiana Harbor Ship Canal just south of the main east-west railroad corridor (Figure 1-1). The Coke Plant, which encompassed approximately 50 acres, was developed in the early 1920s with two coke ovens and an ancillary byproduct recovery system. Two additional coke ovens were constructed during the 1960s, and one of the original two coke ovens was razed at that time. The Coke Plant operations ceased in April 1982 and the aboveground portions of the former Coke Plant buildings and structures were demolished in the early 1990s. The coal bin within the western portion of the Coke Plant property was subsequently filled with slag to produce a level surface. Process sewers and underground piping were also capped and/or decommissioned as part of the demolition process. Some utilities serving other steel production facilities are still present and active to the south of the former Coke Plant.

Production of coke from coal produced byproducts that were reclaimed and used in other steel production facilities or sold for commercial value. These byproducts included benzol (light oil),

ammonium salts, phenol, and naphthalene. Tar was also recovered and stored in holding tanks until it was sold or used for fuel. Coke oven gas was recycled to the coke ovens and to other steel mill facilities for use in reheat furnaces. Approximately 40 percent of the coke gas was returned to the coke ovens and used for heat production.

Scaled facility drawings depicting the former layout of the former Coke Plant were not available, but a former site layout depicting key site operations was located in archive and is reproduced on Figure 1-2. The locations of soil borings and monitoring wells installed to date are also shown on Figure 1-2.

As indicated on Figure 1-2, the soil borings/monitoring wells have been installed in areas where historical operations occurred that included storage of the byproducts produced by the former Coke Plant. In some areas of the site, the placement of soil borings/monitoring wells has been precluded by the presence of underground utilities that are currently active or buried foundations that prevented advancement of the drill bit. Utility drawings are not available for inclusion on Figure 1-2 because the site is no longer an active coking facility. The former facility utility drawings consist of multiple drawings of varying ages and scales, and the drawings have not been updated. The facility engineer clears new soil boring and monitoring well locations using these multiple drawings and personal knowledge.

It should be noted that Figure 1-2 was created by overlaying an historic layout drawing over the existing site plan. The existing site plan was created from aerial photography combined with ground survey control. The historic plan, while a scaled drawing, did not align exactly over the existing site plan; therefore, the exact location of the former key site features cannot be scaled to provide exact coordinates to be used in the field for locating wells. Because manufacturing has not been conducted since 1982 at the site, small, point source areas are unlikely to exist. The results of investigations conducted to date support this assumption. However, to facilitate review of selected boring and well locations, specific areas have been annotated on Figure 1-2.

1.2 Purpose and Scope of Remedial Study Report

This Remedial Study Report was developed to identify and evaluate applicable corrective measure technologies (including a No Further Action [NFA] option) from which several corrective measures are further evaluated for potential implementation at the site. The corrective measures represent a combination of technologies (e.g., institutional controls, natural source zone depletion [NSZD], and *in-situ* remediation). The Remedial Study Report identifies and screens applicable corrective measure technologies, evaluates corrective measures, and recommends a selected corrective measure. As explained further, the evaluation of corrective measures is consistent with RCRA Guidance and is based on the following criteria:

- protection of human health and the environment;
- achievement of Corrective Measure Objectives (CMOs);
- controlling sources of contaminant release;
- long-term effectiveness and reliability;
- short-term effectiveness;
- reduction of toxicity, mobility, or volume of waste;
- implementability; and
- cost.

2. DESCRIPTION OF CURRENT CONDITIONS

2.1 Site Topography

The former Coke Plant is located within the northwest portion of Lake County, Indiana, on the shoreline of the Indiana Harbor Ship Canal, which flows into Lake Michigan. The site is located in an area of low relief within the bed of ancient glacial Lake Chicago (ancestral Lake Michigan). Lake Chicago was situated at an elevation of approximately 640 feet (Fullerton, 1980). Sediments deposited from Lake Chicago accumulated to form the relatively thin Lake Border sequence. Southerly lake currents transported large volumes of fine glacial sand into this area. Much of the sand was reworked into numerous, distinct, low dune-beach ridges.

In some areas, as much as 40 feet of variation of elevation exists between the present shoreline of Lake Michigan and the relic shorelines. The relic shorelines are capped by sand dunes that trend in an east to west arc. The relic shoreline approximately coincides with the east-west trending railroad grade along the south end of the Peninsula.

Locally, the ground surface is relatively flat and varies from 589 to 592 feet relative to mean sea level (MSL). The level of Lake Michigan varies from 576 to 582 feet MSL. Locally, the groundwater elevation varies from 1 to 10 feet above the surface water level of Lake Michigan.

Two distinct land features are present at the West Mill steel making complex. These land features include the made-land or Peninsula area and the urban fill covered beach deposit area. The made-land or Peninsula area is hereinafter referred to as the Peninsula, whereas the urban fill covered beach deposit area is hereinafter referred to as the landward portion of the complex. The Peninsula is bordered on two sides by Lake Michigan and on one side by Indiana Harbor. The landward side of the Peninsula is bordered by an east-west trending railroad grade that is located near the relic shoreline. The landward side is bordered to the north by the east-west trending railroad grade, to the east by Indiana Harbor Canal, and to the west and southwest by the BP Whiting Oil Refinery. Urban/ commercial facilities border the landward side to the southeast. The former Coke Plant is located on the landward side of the Peninsula (Figure 1-1).

2.2 Hydrology

2.2.1 Surface Water

Regionally, surface water flow is towards Lake Michigan, Indiana Harbor, and the Indiana Harbor Canal. The surface material at the former Coke Plant almost entirely consists of highly permeable slag fill, such that precipitation rapidly infiltrates into the slag fill.

2.2.2 Lake Michigan Levels

Although the surface water flow in the Indiana Harbor Canal is typically toward Lake Michigan, if surface water levels in Lake Michigan rise relative to those in the canal, backwater effects and flow reversals can occur. With no other outlets, normal flow accumulates within the canal until equilibrium between the lake and canal surface water levels is re-established. Flow reversals are typically short in duration, whereas backwater (gradient) effects on surface water levels can persist for longer periods of time.

In addition to long-term lake level fluctuations, seiches (temporary buildups of lake water near the shore caused by local atmospheric pressure and wind) can cause short-term fluctuations of more than 3 feet within a few hours along the southern lakeshore. Long-term surface water level changes in Lake Michigan affect levels in portions of the Indiana Harbor and the canal, but seiche fluctuations are

not fully transported upstream. Short-term seiche fluctuations are damped by the interaction of surface water and groundwater.

Lake Michigan levels are recorded from six gauges in Lake Michigan and Lake Huron, and reported as a monthly average (in feet MSL). Lake Michigan levels measured from 1960 to present, show a record low of 576.02 feet MSL recorded in January 2013 and a record high of 582.35 feet MSL recorded in October 1986. More recently, Lake Michigan levels have remained above 580.70 feet MSL since May 2019.

2.2.3 Meteorology

The climate of northwestern Indiana is continental and is characterized by hot, humid summers and cold winters. The nearest United States Geological Survey precipitation recording station is located at Hobart, Indiana, which is located approximately 13 miles to the southeast of the site. The region receives an average of approximately 37 inches of precipitation and 20 inches of snowfall annually (National Oceanic and Atmospheric Administration, 2015).

2.3 Geology

2.3.1 Regional Geology

The former Coke Plant is located within the northwestern portion of the Calumet Lacustrine Plain. The overburden geology of the northwestern portion of the Calumet Lacustrine Plain consists of glacial and post-glacial deposits. The uppermost materials are unconsolidated slag-fill and native deposits (predominantly Calumet sands). Slag-fill, consisting mainly of sand and gravel grain size materials, has been deposited over the natural sands.

The slag-fill thickness increases across the Peninsula from the relic shoreline toward the lake. The top of the Calumet sand and the top of the clay slope downward, toward the lake. Below the Calumet sands are sediments of glacial and lacustrine origin that are referred to as the glacial clay till/ lacustrine clay or clay unit. Silurian bedrock is present below the clay unit. Based on regional soil boring information, the thickness of the clay and silt layer overlying the carbonate bedrock near the former Coke Plant ranges from 80 to 100 feet.

2.3.2 Site-Specific Geology

The slag-fill encountered at the former Coke Plant can be characterized as a granular material that ranges from fine sand to coarse gravel in size and from brown to black in color. The slag is medium dense to extremely dense as measured by standard penetration tests during drilling and varies in thickness from 1 to 14 feet. In 2009, up to 6 feet of clean granular fill materials and a geotextile material were placed over the entire site to level and improve the load bearing capacity of the site. This redevelopment activity has likely eliminated the direct contact exposure pathway, as previously-identified impacted slag/soil is no longer present within the typical contact zone (i.e., within the uppermost 2 feet of soil/fill at grade) where the clean granular fill materials are present.

The original slag-fill is underlain by approximately 33 to 40 feet of fine to medium sand, silty sand, and silt. Fine gravel layers have been encountered in some site soil borings at depths of 20 to 30 feet below ground surface (bgs). At borings installed within the eastern portion of the former Coke Plant, the lower portion of the Calumet aquifer consists of dense silt (approximately 4 to 11 feet thick). Silty clay soils are encountered below the sand or silt soils. Geologic cross-sections depicting soil conditions are presented on Figures 2-1 and 2-2.

2.3.3 Regional Hydrogeology

The regional hydrogeology includes a shallow Quaternary-age aquifer referred to as the Calumet Aquifer, and bedrock Cambrian and Ordovician aquifers. No hydraulic connections between the Calumet Aquifer and the underlying bedrock aquifers are documented. The Calumet aquifer is a beach deposit consisting of eolian and water-deposited fine sands (with some silt). The Calumet Aquifer is underlain by an aquitard that consists of low permeability clay and till sediments.

Regionally, groundwater flow is somewhat controlled by relic sand dunes that originally comprised the aquifer. Thus, in the area between the Little Calumet River and the Grand Calumet River, a small groundwater divide is present and groundwater flow is either north or south, toward one of the rivers. North of the Grand Calumet River local groundwater mounds result in variable groundwater flow directions. Adjacent to Lake Michigan and the Indiana Harbor Ship Canal, the direction of groundwater flow is toward the lake or the canal, respectively.

2.3.4 Site-Specific Hydrogeology

The Calumet Aquifer is a water table or unconfined aquifer with a saturated thickness of approximately 33 feet (at the location of monitoring MW-810D) at the former Coke Plant. At borings installed within the eastern portion of the former Coke Plant, the lower portion of the Calumet aquifer consists of dense silt (approximately 4 to 11 feet thick). As indicated on geologic cross-sections presented on Figures 2-1 and 2-2, silty clay soils are encountered below the sand or silt soils. The silty clay soils are present at depths ranging from approximately 37.5 feet bgs at the location of well MW-817D, to 44 feet bgs at the location of well MW-821D. These silty clay soils represent an aquitard and define the vertical extent of impacted groundwater.

The water table is generally encountered at elevations ranging from 582.7 to 586.92 feet MSL (September 2017 data), which corresponds to a water table depth of approximately 5 to 9 feet bgs. The groundwater flow direction based on September 2017 water table elevations in the shallow monitoring wells is generally toward the southeast, toward the Indiana Harbor Ship Canal (as illustrated on Figure 2-3). Consistent with previous groundwater elevation measurements, the September 2017 shallow groundwater contours (Figure 2-3) indicate the presence of a potential localized groundwater mound centered on monitoring well MW-825S, with radial outward flow from that location; however, the overall shallow groundwater flow at the former Coke Plant site is to the south to southeast as indicated above.

Relatively high horizontal hydraulic gradients are present near the extreme southern portion of the site, in the vicinity of the constructed gap in the upper portion of the sheet pile wall (Figure 2-3). The constructed gap area includes the portion of the sheet pile wall where the upper 25 feet of the sheet pile wall is no longer present. The lower portion of the existing sheet pile wall remains in place at the location of the constructed gap. The lower portion of the sheet pile wall in the constructed gap area extends vertically from 25 feet bgs into the clay layer (aquitard) encountered around 40 feet bgs.

Similar to shallow groundwater flow, the groundwater flow direction based on September 2017 piezometric elevations in the deep wells (screened near the base of the Calumet aquifer) was generally toward the southeast (Figure 2-4); however, a southwest component of deep groundwater flow is present across the northern portion of the former Coke Plant site.

The clean granular fill materials and geotextile fabric that were placed over the site's ground surface in 2009 were placed as a visible marker for delineation between the previous ground surface and the new fill materials, not as an impermeable barrier. As such, based on the geotextile's location above the groundwater table and the permeable nature of geotextile fabrics, the placement of the geotextile fabric and fill material have not affected groundwater flow at the former Coke Plant. This conclusion is

confirmed based on a comparison of groundwater elevation data obtained prior to and subsequent to 2009, which shows relatively consistent groundwater flow patterns and hydraulic gradients.

Based on September 2017 groundwater elevations (Table 2-1), horizontal hydraulic gradients associated with shallow groundwater ranged from 0.0018 to 0.0065 feet per foot between water table monitoring wells in the direction of groundwater flow. Horizontal hydraulic gradients associated with deep groundwater ranged from 0.0017 to 0.0041 feet per foot between deep monitoring wells in the direction of groundwater flow.

Vertical hydraulic gradients were evaluated based on groundwater elevation data from 14 monitoring well pairs at the former Coke Plant (Table 2-2). In nine of the monitoring well pairs (MW-801S&D, MW-803S&D, MW-805S&D, MW-806S&D, MW-807S&D, MW-808S&D, MW-809S&D, MW-817S&D, and MW-822S&D), the hydraulic gradient was downward and ranged from 0.0003 to 0.010 feet per foot in September 2017. In eight well pairs (MW-810S&D, MW-815S&D, MW-816S&D, and MW-824S&D), the hydraulic gradient was upward and ranged from 0.001 to 0.050 feet per foot in September 2017. No vertical gradient was measured at well pair MW-822S&D.

In-situ hydraulic conductivity tests (slug tests) were previously conducted (during 2005 and 2007) in ten shallow monitoring wells and eight deep monitoring wells. The results of these *in-situ* hydraulic conductivity tests are documented in the July 2008 Supplemental Site Investigation Report for the former Coke Plant. The geometric mean of the *in-situ* hydraulic conductivity test results in the water table wells completed in the upper portion of the Calumet aquifer at the former Coke Plant range from 9.4×10^{-1} to 6.7×10^{-4} centimeters per second (cm/sec). The geometric mean of the *in-situ* hydraulic conductivity test results in the deep monitoring wells completed in the lower portion of the Calumet sand ranges from 7.1×10^{-3} to 8.5×10^{-5} cm/sec.

2.4 Sampling and Analysis Prior to the RCRA 3013 Order

On July 11 and 12, 2000, Techlaw Inc., a USEPA contractor, collected groundwater samples from the former Coke Plant. The groundwater samples were collected by a direct-push drilling rig that was used to penetrate the water table, which occurred at a depth of approximately 6 feet bgs. Dedicated tubing was used at each sampling location to reduce the possibility of cross-contamination. Between each sampling location, the well screen was decontaminated with an Alconox® solution and distilled water rinse. Samples were collected through the dedicated tubing without filtering. Although turbidity was not measured, the unfiltered grab samples from the temporary well-points likely had high levels of turbidity. Visual observations made by Arthur D. Little personnel (August 2000) indicated that a groundwater sample from location GW-2 was particularly sediment-laden.

Laboratory analysis of split groundwater samples indicated the presence of barium, cadmium, chromium, lead, silver, acenaphthene, and naphthalene at some locations. However, the presence of these constituents does not necessarily indicate a release. Cadmium (329 micrograms per liter [µg/L]) was reported in the field blank, which was obtained after collection of sample GW-3; no semi-volatile organic compounds (SVOCs) were detected in the blank. The USEPA indicated in the RCRA Section 3013 Order that analytical results of groundwater samples analyzed by the USEPA from the area indicated the presence of phenol, naphthalene, pyrene, fluorene, and several other organic compounds.

A review of the analytical data from the Arthur D. Little groundwater sample splits indicated that only concentrations of two constituents exceeded the USEPA Region 9 Preliminary Remediation Goals (PRGs) (cadmium at wells GW No. 1, GW No. 4, and GW No. 6, and naphthalene at wells GW No. 2 and GW No. 6). A copy of the Arthur D. Little report was included as an appendix to the initial Groundwater Sampling and Analysis Work Plan, Volume 4 of 5 (STS Consultants, Ltd. [STS], 2004).

2.5 RCRA 3013 Investigation Results

On October 23, 2003, the USEPA issued a RCRA Section 3013 Administrative Order (USEPA Docket No. R 3013-5-03-002) to ISG-Indiana Harbor (ISG-IH) and Tecumseh. The Administrative Order required both parties to prepare a proposal for monitoring, testing, analysis, and reporting to ascertain the nature and extent of hazards posed by hazardous wastes that are present or may have been released at 14 identified units and one Area of Concern (AOC) at the West Mill property. ISG-IH and Tecumseh do not have information that indicates that hazardous wastes regulated by the USEPA or the Indiana Department of Environmental Management (IDEM) are present or have been released at any of the 14 units or the one AOC identified in the Administrative Order.

Proposed monitoring, testing, analysis, and reporting activities for the West Mill and Tecumseh property were contained in four Work Plans and a Quality Assurance Project Plan (QAPP), as follows:

- Soil Sampling and Analysis Work Plan, Volume 1 of 5, (Revision 2);
- Sediment Sampling and Analysis Work Plan, Volume 2 of 5, (Revision 2);
- Hydrogeologic Conditions Work Plan, Volume 3 of 5 (Revision 2);
- Groundwater Sampling and Analysis Work Plan, Volume 4 of 5, (Revision 2); and
- Quality Assurance Project Plan, Volume 5 of 5, (Revision 2).

These plans were prepared and subsequently approved by the USEPA on May 12, 2005. Field implementation of the work plans began shortly after USEPA's approval. Sampling and analysis conducted for compliance with the RCRA 3013 Order has been conducted in a series of phased investigations. The results of the laboratory analytical testing conducted are summarized in Sections 2.5.1 and 2.5.2. The investigation phases and the well location rationale for the Tecumseh site were as follows:

May 2005: Five water table monitoring wells (MW-801S through MW-805S) and three deep monitoring wells (MW-801D, MW-803D, and MW-805D) were installed by STS to confirm the constituents detected during USEPA RCRA assessment activities. MW-801S and MW-801D were installed near the former location of aboveground storage tanks that held tar for recycling (USEPA sample locations GW-1 and GW-2). MW-802S and MW-804S were installed north and south (respectively) of the USEPA sample locations GW-4 and GW-5. MW-803S and MW-803D were placed to the east of USEPA sample location GW-6. MW-805S and MW-805D were installed in the vicinity of USEPA sample location GW-3.

Soil samples were collected from the near surface (0 to 2 feet bgs) and from the 2-foot interval above the water table (2 to 4 feet bgs or 3 to 5 feet bgs). Additionally, a soil sample was collected from the bottom 2-foot interval of the Calumet sand from the three deep monitoring well boring locations (MW-801D, MW-803D, and MW-805D). Soil samples were analyzed for volatile organic compounds (VOCs), SVOCs, polynuclear aromatic hydrocarbons (PAHs), 19 metals, cyanide, sulfide, total organic carbon (TOC), and phenol.

July 2005: Groundwater samples were collected from the eight wells and analyzed for VOCs, SVOCs, PAHs, 19 metals, cyanide, sulfide, TOC, phenol alkalinity, chloride, ammonia, and chemical oxygen demand (COD).

November 2005: Three water table (MW-806S, MW-807S, and MW-808S) and three deep (MW-806D, MW-807D, and MW-808D) monitoring wells were installed to further

define the extent of benzene-impacted groundwater detected at monitoring wells MW-803S and MW-803D.

January 2006: Groundwater samples were collected from the 14 monitoring wells and analyzed for all or a subset of the parameters tested for in July 2005.

June 2007: Ten water table monitoring wells (MW-809S through MW-818S) and five deep monitoring wells (MW-809D, MW-810D, MW-815D, MW-816D, and MW-817D) were installed to further evaluate the magnitude and extent of impacted groundwater.

Monitoring wells MW-811S, MW-812S, and MW-814S were installed in the former coal bin south of the concrete wall that formed the northern boundary of the coal storage area. MW-813S was installed near the north side of the concrete wall to evaluate groundwater quality within the former coal bin that may be less impacted than groundwater within the northern portion of the property where the operational units were formerly located. Two piezometers (PZs) (PZ-890 and PZ-891) were installed to evaluate groundwater levels north and south of the concrete wall that separated the former coal bin from the production area to evaluate whether the concrete wall forms a barrier to groundwater flow.

Monitoring wells MW-809S, MW-809D, MW-810S, MW-810D, MW-817S, and MW-818S were installed adjacent to the canal wall to evaluate downgradient perimeter groundwater quality.

Monitoring wells MW-815S, MW-815D, MW-816S, and MW-816D were installed to define the western extent of the impacts observed in MW-803, MW-807, and MW-808.

July 2007: Groundwater samples were collected from the 18 water table wells and 11 deep wells. Groundwater samples from newly installed monitoring wells were analyzed for the full list of parameters (VOCs, SVOCs, PAHs, metals, and general chemistry anions and cations) and existing monitoring wells were analyzed for analytical parameters detected in prior rounds of sampling.

June 2008: Three water table monitoring wells (MW-819S through MW-821S) and two deep monitoring wells (MW-819D and MW-821D) were installed to evaluate groundwater quality within the former benzol storage area. One 6-inch diameter well for use as an extraction well as part of a proposed aquifer pumping test and three piezometers (PZ-894, PZ-895, and PZ-896) were installed north of MW-809 to evaluate aquifer characteristics to aid in the evaluation of potential remedial actions. The associated boring logs and monitoring well construction forms for the June 2008 investigations were provided in the March 2011 Additional Investigation/Source Evaluation Work Plan (Revision 1).

Soil samples were collected from the 2-foot interval above the water table (2 to 4 feet bgs) in the three water table well borings (MW-819S, MW-820S, and MW-821S). In addition, a soil sample was collected from the bottom 2-foot interval of the Calumet sand from the two deep monitoring wells (MW-819D and MW-821D). These soil samples were analyzed for VOCs, SVOCs, PAHs, 19 metals, cyanide, sulfide, TOC, and phenol.

July 2008: Groundwater samples were collected from 21 water table wells and 13 deep wells. The groundwater samples from the newly installed monitoring wells were analyzed for the full list of parameters and existing monitoring wells were analyzed for analytical parameters detected during prior sampling events.

2.5.1 Pre-2017 Soil Sample Results

A discussion of the laboratory results and conclusions regarding soil samples obtained prior to 2017 are provided below.

Soil Samples 2005-2007

Four VOCs including benzene, ethylbenzene, toluene, and 1,1,1-trichloroethane (1,1,1-TCA) were detected in soil samples collected in 2005/2006. The detected VOC concentrations did not exceed Data Quality Objectives (DQOs). Methylene chloride was detected in one or more soil samples. The detected methylene chloride concentrations were below the reporting limit (RL), were likely a laboratory artifact and did not exceed DQOs. Tetrachloroethene (PCE) was detected in one soil sample below the RL in a sample that demonstrated a high bias in terms of the analytical laboratory matrix spike/matrix spike duplicate (MS/MSD) evaluation. The PCE concentration did not exceed DQOs and the single detection is considered a laboratory artifact.

The following three SVOCs were detected in the soil samples: 2,4-dimethylphenol, bis(2-ethylhexyl) phthalate, and phenol. The detected SVOC concentrations did not exceed DQOs.

Nine different PAH analytes were detected in slag-fill at the former Coke Plant above DQOs. Three PAHs (benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene) exceeded the IDEM default closure DQO and industrial/commercial direct contact DQO in surface slag-fill samples. One location (benzo(a)pyrene) exceeded the construction worker DQO. Since these samples were collected, the site has been redeveloped for industrial use and geotextile fabric and 2 to 6 feet of clean, compacted granular fill has been placed at the site to provide a level and stable surface for material storage. Thus, the direct contact DQOs exceedances are no longer applicable to these samples because the associated sample depths are no longer within the direct contact zone (i.e., from ground surface to a depth of 2 feet). The remaining PAHs that were detected above DQOs exceeded the migration to groundwater DQO. With one exception, these PAHs were not detected in the groundwater. The exception, phenanthrene, was detected in groundwater, but well below applicable groundwater DQOs.

Three metals were detected in slag-fill samples from the former Coke Plant. Two of the metals (hexavalent chromium in two samples and lead in one sample) concentrations exceeded migration to groundwater DQOs but were not detected in the groundwater. The two detected hexavalent chromium concentrations represent a suspected laboratory artifact. Interferences in the analytical method by carbonate, chloride, organic matter, and common metals such as aluminum and iron have been shown to overestimate the hexavalent chromium concentration in soil samples. The slag-fill material contains both carbonate and relatively high carbon concentrations; it is therefore likely to be associated with over-estimation of the hexavalent chromium concentration. Hexavalent chromium was not detected in the groundwater sample from the well at the location of the hexavalent chromium DQO exceedances. Arsenic was detected slightly above the IDEM default closure criteria DQO for one soil sample (22 milligrams per kilogram [mg/kg] versus DQO of 20 mg/kg), but the average arsenic concentration for the Coke Plant slag-fill samples is well below the DQO.

Soil samples were not collected during the 2007 groundwater monitoring well installations because no staining, odors or elevated photoionization detector (PID) readings were noted in the soils in the unsaturated zone. Elevated PID readings were noted at some of the groundwater monitoring well locations, but because the wells were located within areas of documented impacted groundwater, the elevated PID readings are likely attributable to the groundwater impacts.

Soil Samples 2008

Three VOCs including benzene, ethylbenzene, and toluene were detected in soil samples obtained in 2008. The detected benzene concentrations in the deep soil samples from the deep well borings

exceeded the direct contact and migration to groundwater DQOs. However, these were saturated soil samples collected from a location of impacted groundwater. The detected concentrations in the soil samples were less than the concentrations detected in the groundwater. It is likely that the detected soil concentrations are attributable to the impacted groundwater. The detected concentrations of ethylbenzene and toluene did not exceed DQOs. Chlorobenzene and methylene chloride were also detected in one or more soil samples. These concentrations were below RLs and likely represent laboratory artifacts. The detected concentrations of these two analytes did not exceed DQOs.

The following three SVOCs were detected in the soil samples: 1,2-dichlorobenzene, bis(2-ethyl-hexyl) phthalate, and nitrobenzene. Each of these detected concentrations was below RLs, but above the analytical method detection limit (MDL). The detected concentrations did not exceed DQOs.

PAHs were detected in all soil samples except for the sample from the piezometer MW-896. Only one PAH (dibenz(a,h)anthracene) exceeded the direct contact and default closure DQOs. Metals were detected in the soil samples. None of the detected metals concentrations exceeded DQOs.

Soil Samples 2012-2013

A total of 13 soil borings and 12 monitoring wells were installed in August 2012 as part of the Additional Site Investigation. Slag-fill/soil samples were obtained from these soil borings and monitoring well borings for varied laboratory analyses to evaluate constituent concentrations. Concentrations of VOCs greater than IDEM Default Closure DQOs in the slag-fill/soil samples were only associated with toluene (soil sample from boring SB-876, 9 to 10 feet bgs), and for benzene, as follows: MW-809M (8 to 9 feet), MW-823D (40 to 41 feet), MW-824D (38.5 to 39.5 feet), SB-875 (6.5 to 7.5 feet), SB-876 (6 to 7 and 9 to 10 feet), SB-880 (1 to 2, 5 to 6, and 7 to 8 feet), and SB-881 (7 to 8 feet).

The following slag-fill/soil samples contained PAH concentrations greater than IDEM Default Closure DQOs: MW-803M (1 to 2 feet bgs), MW-822D (1 to 2 and 4 to 5 feet), MW-823D (1 to 2 feet), MW-825S (1 to 2 feet), MW-826M (1 to 2 feet), SB-880 (1 to 2 and 5 to 6 feet), and SB-881 (1 to 2 feet).

The following slag-fill/soil samples contained arsenic concentrations greater than the IDEM Default Closure DQO: MW-824D (1 to 2 feet bgs), MW-827S (10 to 11 feet), SB-872 (1 to 2 feet), SB-875 (6.5 to 7.5 feet), SB-877 (1 to 2 feet), SB-878 (8 to 9 feet), SB-879 (1 to 2 feet), SB-882 (1 to 2 feet), and SB-883 (4.5 to 5.5 feet). The detected arsenic concentrations in these slag-fill/soil samples ranged from 6.1 to 9.8 mg/kg.

With respect to analysis of slag-fill/soil samples for total cyanides, only one sample contained cyanides at a concentration that slightly exceeded the IDEM Default Closure DQO of 9.6 mg/kg for total cyanides (this IDEM Default Closure DQO for total cyanides is based upon the IDEM Migration to Groundwater DQO). Total cyanides were detected in slag-fill sample SB-881 (1 to 2 feet bgs), at a concentration of 11 mg/kg.

Conclusions – Soil Conditions

The results of site investigations and slag-fill/soil sampling conducted prior to 2017 further defined the extent of slag-fill/soil impacts above IDEM DQOs in the vicinity of the LNAPL plume. These soil impacts include benzene and PAH compounds. The soil impacts do not extend off site. Up to 6 feet of clean granular fill materials and a geotextile material were placed over the site in 2009. This redevelopment activity has eliminated the direct contact exposure pathway, as previously-identified impacted slag/soil is no longer present within the typical contact zone (i.e., within the uppermost 2 feet of soil/fill at grade) where the clean granular fill materials are present.

2.5.2 Pre-2017 Groundwater Sample Results

Each monitoring well was sampled on one occasion in 2008 for the full suite of analytes (VOCs, SVOCs, PAHs, metals, and general chemistry anions and cations). Subsequent sampling events conducted on existing wells included analysis for a subset of analytes including VOCs, two SVOCs (2,4-dimethylphenol and phenol), arsenic, antimony, calcium, iron, magnesium, manganese, potassium, sodium, chloride, alkalinity, ammonia, hardness, and sulfate. The reported results were compared to DQOs that were derived from the Indiana Risk-Integrated System of Closure, specifically the Federal/IDEM maximum contaminant level (MCL), the IDEM Risk Integrated System of Closure (RISC) Industrial criteria and the IDEM default closure criteria.

Detected VOCs included 1,2-dichloroethane (1,2-DCA), benzene, bromomethane, chlorobenzene, chloromethane, ethylbenzene, and toluene. Three of these VOCs (bromomethane, chlorobenzene, and chloromethane) were detected at concentrations generally near the MDL and in all cases did not exceed any DQO. 1,2-DCA was detected on one occasion at MW-803D and MW-807D above DQOs but was not detected based on data from subsequent sampling events. Thus, the primary VOCs of concern at the site were preliminarily identified as benzene, ethylbenzene, and toluene. Of these three VOCs, only benzene had exceeded the DQOs.

Benzene concentrations above DQOs in groundwater samples obtained in 2008 from the water table monitoring wells ranged from 0.01 milligrams per liter (mg/L) to 65 mg/L. The detected concentrations above DQOs in groundwater analyzed from the deep monitoring wells ranged from 0.035 to 180 mg/L.

Five SVOCs (bis(2-ethylhexyl)phthalate, butylbenzylphthalate, di-n-butylphthalate, 4-dimethylphenol and phenol) were detected in the groundwater samples. The three phthalates were detected below the RL and in some cases were also detected in the method blank. The other two SVOCs (2,4-dimethylphenol and phenol) were detected in groundwater samples from multiple monitoring wells. The concentrations of 2,4-dimethylphenol exceeded DQOs in three wells (MW-807D, MW-808D, and MW-808S). The concentrations of phenol exceeded DQOs in four wells (MW-807D, MW-808S, MW-808D, and MW-809D).

PAHs were detected in a number of monitoring wells; however, the detected PAH concentrations were generally less than DQOs. The single exception was two detections of naphthalene that exceeded DQOs in two separate groundwater sampling events in two different wells. Naphthalene was detected in 2006 at 2.2 mg/L in MW-808S, which is slightly above the DQO of 2 mg/L; this sample was qualified as biased high due to matrix effect. The second DQO exceedance of naphthalene occurred in MW-818S in 2007; however, the naphthalene concentration in the subsequent (2008) groundwater sample did not reveal a DQO exceedance. Naphthalene was detected just slightly above the MDL in the 2008 groundwater sample and was qualified as it was also detected in the method blank.

The following 24 metals were analyzed in the initial groundwater sample collected from each monitoring well: antimony, arsenic, beryllium, boron, cadmium, calcium, chromium, hexavalent chromium, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, thallium, tin, vanadium, and zinc. Two metals (beryllium and hexavalent chromium) were not detected in any of these groundwater samples. Of the remaining 22 metals, only two metals (antimony and arsenic) exceeded DQOs at any location. Antimony exceeded the MCL DQO at three monitoring well locations (MW-803S, MW-803D, and MW-804S) for only the initial sampling event for each well in 2005 or 2006. Subsequent analyses (2007 and 2008) did not indicate antimony concentrations greater than DQOs in these monitoring wells.

Arsenic was detected in all monitoring wells and exceeds the DQOs at a number of locations. Arsenic is ubiquitous in the Calumet aquifer in northwestern Indiana. In general, lower arsenic concentrations have been detected in the water table wells, in particular the water table wells within the western portion of the former Coke Plant. In 2008, detected arsenic concentrations in the water table wells ranged from 0.00038 to 0.057 mg/L, and in the deep wells ranged from 0.0027 to 0.31 mg/L. Two of 29 groundwater samples (not including Quality Control [QC] samples) were below the industrial DQO for arsenic. Higher concentrations of arsenic have been detected within the eastern portion of the site.

Elevated ammonia and chloride concentrations, associated with former secondary recovery processes on the site, were identified in the groundwater samples from the deep monitoring wells. Detected ammonia concentrations in 2008 from the water table wells ranged from 0.5 to 15 mg/L and in the deep wells ranged from 14 to 1,400 mg/L. There are no DQOs established for ammonia. Detected chloride concentrations in 2008 from the water table wells ranged from 2.5 to 65 mg/L and in the deep wells ranged from 30 to 1,600 mg/L. There are no DQOs established for chloride. The ammonia and chloride impacts are primarily contained within the eastern portion of the former Coke Plant near former operations. The wells installed in 2007 defined the extent of ammonia and chloride impacts to the north and south and an on-site sheet pile wall forms a boundary within the eastern portion of the former Coke Plant.

LNAPL was detected in two water table monitoring wells installed in 2008 (MW-820S and MW-821S), within the former benzol storage area. In monitoring well MW-820S, LNAPL was detected 2 months after well installation and development and was approximately 2.5 inches in measured thickness. LNAPL was detected upon well installation in MW-821S and initially fluctuated from 1.5 to 2 inches in measured thickness.

In August 2012, 12 new monitoring wells were installed as part of the Additional Site Investigation. The combined 46 monitoring wells include 27 shallow wells, 3 intermediate wells, and 16 deep wells. In October/November 2012 and July 2013, groundwater samples were collected from the 12 new monitoring wells and 34 existing monitoring wells.

Benzene, toluene, and methylene chloride were the only VOCs detected at concentrations that exceeded the IDEM Default Closure DQOs. Benzene concentrations in excess of the DQO (0.052 mg/L) were detected in groundwater samples obtained from the following monitoring wells: MW-802S, MW-803D, MW-803M, MW-803S, MW-805S, MW-806D, MW-807D, MW-808D, MW-808S, MW-809D, MW-809M, MW-816D, MW-817D, MW-817S, MW-819D, MW-819S, MW-820S, MW-821D, MW-821S, MW-823D, MW-823S, MW-824D, and MW-824S. Toluene was detected in excess of the DQO (8.2 mg/L) in a groundwater sample obtained from monitoring well MW-819S. Methylene chloride was detected at concentrations in excess of the DQO (0.38 mg/L) at samples obtained from monitoring wells MW-808D, MW-809D, and MW-820S. It should be noted that methylene chloride is a common laboratory contaminant.

With respect to SVOCs, only phenol and 2,4-dimethylbenzene were repeatedly detected at concentrations that exceeded the IDEM Default Closure DQOs of 31 mg/L and 2 mg/L, respectively. The phenol DQO was exceeded at monitoring wells MW-807D and MW-808D, and the 2,4-dimethylbenzene DQO was exceeded at monitoring wells MW-808S, MW-808D, and MW-809D.

With regard to PAHs, benzo(a)pyrene was detected in the October/November 2012 and July 2013 groundwater samples from MW-817S and the July 2013 sample from MW-820S at concentrations that exceed the IDEM Default Closure DQO of 0.00039 mg/L. The detected naphthalene concentrations in

the October/November 2012 and July 2013 groundwater samples from MW-820S exceeded the IDEM Default Closure DQO of 2 mg/L.

Of the metals analyzed, only total arsenic was detected at concentrations that exceed its IDEM Default Closure DQO (0.01 mg/L). These detected arsenic concentrations ranged from 0.011 to 0.20 mg/L, and occurred in the October/November 2012 and/or July 2013 samples collected from the following wells: MW-801S, MW-803D, MW-804S, MW-805S, MW-805D, MW-806S, MW-806D, MW-807D, MW-808S, MW-808D, MW-809M, MW-809D, MW-812S, MW-815S, MW-816S, MW-816D, MW-817D, MW-818S, MW-820S, MW-821D, MW-822D, MW-823D, and MW-826S.

Higher arsenic concentrations were detected in the deep wells, based on higher arithmetic mean arsenic concentrations in groundwater samples obtained from the deep wells. The higher arsenic concentrations detected in the deep well samples, relative to the shallow wells, are attributed to more reducing conditions associated with the depth of these wells and their proximity to historic Lake Michigan bottom sediments (as the relic shoreline approximately coincides with the railway adjacent to the north of the former Coke Plant). Arsenic, like other oxidation-reduction sensitive metals, tends to accumulate at higher concentrations under reducing conditions. More importantly, the arsenic concentrations detected in the deep well samples are concluded to be related to background arsenic concentrations in the unconsolidated surface sediments of Lake Michigan, not the LNAPL or the former Coke Plant.

It is important to note that, within the former Coke Plant site, aquatic organisms are not directly exposed to groundwater. Exposure to aquatic organisms only occurs as groundwater discharges to the Indiana Harbor Ship Canal. The former Coke Plant monitoring wells are located a distance away from the Indiana Harbor Ship Canal shoreline upgradient of the constructed gap in the sheet pile wall. Groundwater impacted with constituent concentrations greater than applicable groundwater standards will undergo dilution, dispersion, and attenuation prior to arrival at the groundwater/surface water boundary at the Indiana Harbor Ship Canal. Substantial additional dilution occurs at the groundwater/surface water boundary.

2.5.3 2013 LNAPL Sample Results

LNAPL samples were collected from monitoring wells MW-820S and MW-821S in July 2013. The LNAPL samples were analyzed for 27 VOCs, 16 PAHs, 42 SVOCs, viscosity and density. Analytical laboratory results of this LNAPL sampling event are provided in Table 2-3. The measured bulk density of the July 2013 LNAPL samples obtained from monitoring wells MW-820S and MW-821S was 0.90 grams per milliliter (g/mL), for each of the two samples. The measured kinematic viscosity of the LNAPL sample from MW-820S was 15.39 centistokes (cSt), and 15.34 cSt for the LNAPL sample from MW-821S. Fuel oil No. 5A represents an example fluid with a similar range of kinematic viscosities.

With respect to the LNAPL sample from monitoring well MW-820S, the predominant detected VOCs were xylenes (190 mg/kg), ethylbenzene (130 mg/kg), benzene (24 mg/kg), and toluene (1 mg/kg). A total of seven PAHs were detected, mainly consisting of naphthalene (27,000 mg/kg). The only detected SVOCs were 2-methylnaphthalene (2,400J mg/kg) and dibenzofuran (860J mg/kg); the SVOCs were detected at estimated concentrations between the MDL and RL.

With regard to the LNAPL sample from monitoring well MW-821S, the predominant detected VOCs were benzene (270 mg/kg), xylenes (120 mg/kg), toluene (120 mg/kg), and ethylbenzene (17 mg/kg). A total of 11 PAHs were detected, mainly consisting of acenaphthene (1,100 mg/kg). The only detected SVOCs were 2-methylnaphthalene (180J mg/kg) and dibenzofuran (360J mg/kg)

and bis(2-ethylhexyl)phthalate (47J mg/kg); the SVOCs were detected at estimated concentrations between the MDL and RL.

Conclusions – Groundwater Conditions

The results of subsurface investigations and groundwater sampling conducted prior to 2017 at the former Coke Plant indicated the following:

- The water table within the former Coke Plant area is generally encountered at depths of 6 to 15 feet below grade (approximate elevation of 578.8 to 588.2 feet MSL). Groundwater flow (both shallow and deep) is generally toward the southeast (with the exception of a southwesterly component of flow in the northern portion of the site). A clay layer below the shallow Calumet aquifer represents an aquitard and defines the vertical extent of impacted groundwater.
- The groundwater elevation data near the sheet pile barrier are approximately 3 to 4 feet greater than in the shoreline area of the constructed gap in the sheet pile barrier. The observed groundwater mounding near the sheet pile barrier relative to groundwater levels near the constructed gap area leads to the conclusion that groundwater is discharging to the Canal through the constructed gap area in the sheet pile wall, rather than to bottom sediments in the Indiana Harbor Ship Canal.
- LNAPL has been identified in two water table wells (MW-820S and MW-821S) in the vicinity of the former benzol storage area but does not extend offsite and has not been detected in groundwater samples obtained from monitoring wells located hydraulically downgradient of monitoring wells MW-820S and MW-821S. The LNAPL consists of a relatively heavy fuel oil comprised of petroleum VOC, PAH, and SVOC constituents.

Based on laboratory results of groundwater samples collected from the on-site monitoring wells, chemicals of potential concern in groundwater include benzene, toluene, methylene chloride (which is a common laboratory contaminant), phenol, 2,4-dimethylphenol, benzo(a) pyrene, naphthalene and arsenic. Higher arsenic concentrations were detected in deep on-site monitoring wells and are attributed to more reducing conditions associated with the depth of these wells and their proximity to historic Lake Michigan bottom sediments. Ammonia and chloride ions are the residual products from the production of coke.

In a USEPA letter dated April 28, 2015, the USEPA letter requested that a Pre-Design Work Plan be submitted to the USEPA. In a letter dated August 7, 2015, ArcelorMittal provided responses to the April 2015 USEPA letter. In an e-mail communication dated August 28, 2015, the USEPA indicated that it was in general agreement with the August 7, 2015 ArcelorMittal response letter and requested that the Pre-Design Work Plan be submitted to the USEPA within 90 days. The Ramboll *Pre-Design Work Plan* was submitted to the USEPA on November 30, 2015.

In a letter dated March 22, 2016, the USEPA provided comments to the November 30, 2015 *Pre-Design Work Plan*. A Tecumseh letter dated May 20, 2016, was prepared to provide responses to the March 22, 2016 USEPA correspondence, along with an amended *Pre-Design Work Plan* (Revision 1). USEPA's comments to Revision 1 of the *Pre-Design Work Plan* were provided in a letter dated August 8, 2016. In response, Revision 2 of the *Pre-Design Work Plan* was submitted to the USEPA on September 7, 2016. The USEPA subsequently provided approval of Revision 2 of the *Pre-Design Work Plan* in a letter dated September 9, 2016.

2.6 2017/2018 Pre-Design Investigation Results

The pre-design investigation work proposed in the September 2016 *Pre-Design Work Plan* was completed in 2017 and 2018, and documented in a December 2018 *Pre-Design Report*. The primary

purpose of the pre-design investigation at the former Coke Plant was to further define the magnitude and extent of previously identified soil and groundwater impacts, and collect site-specific data needed for comprehensive evaluation of remedial alternatives that are appropriate in terms of remediation of the LNAPL near the former benzol storage area. Specific objectives together with the conclusions presented in the December 2018 *Pre-Design Report* are summarized below:

- **Further evaluation of the extent of LNAPL in groundwater at the former benzol storage area:** Based on the results of the Ultra-Violet Optical Screening Tool (UVOST®) investigation, relatively heavier petroleum products may have historically been released in the southern and western portion of the investigation area than in the northern and eastern portion of the investigation area. Based on the additional well installations, measurable LNAPL is only present in wells MW-820S and MW-821S, and only LNAPL sheens were observed on sampling equipment submerged in wells IW-2, IW-3, and IW-4. A portion of the heavier petroleum products were likely denser than water, which may account for observed fluorescence to depths as great as 28 feet. The UVOST® investigation findings are also consistent with the presence of more weathered petroleum product in the southern and western portion of the investigation area, which may be indicative of older releases that have historically migrated from the upgradient former benzol storage area and is no longer mobile (based on the absence of measurable LNAPL in nearby monitoring wells and visible separate phase LNAPL in nearby soil borings). Based on the pre-design investigation, the extent of LNAPL in groundwater has been defined.
- **Evaluation of potential soil impacts in the vicinity of the LNAPL:** Soil impacts above DQOs in the vicinity of the LNAPL include benzene, arsenic, lead, and PAH compounds. The results of the pre-design investigation have defined the extent of these soil impacts above migration to groundwater and default closure IDEM DQOs in the vicinity of the former benzol storage area. As such, it was concluded that no further soil investigation is required.
- **Evaluation of Direct Contact Exposure Pathway in Surface Soil (0 to 2 feet):** With the exception of PAHS, none of the soil samples obtained from 0 to 2 feet bgs contained detectable VOC, SVOC, or metals concentrations above their respective direct contact DQOs. Only seven of the soil samples analyzed from 0 to 2 feet bgs detected PAH concentrations that were greater than direct contact DQOs; however, only benzo(a)pyrene was detected at concentrations greater than IDEM Screening Levels. An upper confidence limit (UCL) of 11.7 mg/kg was calculated for benzo(a)pyrene based on all available direct contact surface soil data for 2012 and 2017. The site UCL is lower than the IDEM Direct Contact Screening Level of 21 mg/kg for benzo(a)pyrene, which indicates that direct contact risks are acceptable.
- **Further definition of the magnitude and extent of impacted groundwater for chemicals of concern:** Based on September 2017 groundwater quality data (Table 2-4), the locations of DQO exceedances near the former benzol storage area are illustrated on Figures 2-5 and 2-7 (for shallow and deep groundwater, respectively). Figure 2-6 provides intermediate depth groundwater quality exceedances of DQOs. The primary constituent of concern near the former benzol storage area is benzene. Benzene iso-concentration maps based on shallow, intermediate, and deep groundwater quality data are provided on Figures 2-8, 2-9, and 2-10, respectively. As shown on these figures, the northern, western, and southern extents of shallow and deep benzene-impacted groundwater have been defined. Although the extent of impacts to the east has not been fully defined, installation of additional monitoring wells further to the east was concluded to be precluded by the presence of the railway corridor located adjacent east of the former Coke Plant.
- **Expanded Screening Level Ecological Risk Assessment (SLERA):** A SLERA for the former Coke Plant was submitted to the USEPA in November 2015. An addendum to the SLERA was provided as Appendix H of the December 2018 *Pre-Design Report*, which applied the more recent groundwater quality data obtained as part of the 2017/2018 pre-design investigation to the risk

analysis with the objective of determining whether the new data change the overall conclusions of the SLERA. The 2017 groundwater sampling data confirmed the previous conclusion that significant ecological risks are not predicted for aquatic organisms exposed to constituents in groundwater that are released to the ship canal via the constructed gap area of the sheet pile wall.

- **Focused Human Health Risk Assessment (HHRA):** A HHRA for the former Coke Plant was submitted to the USEPA in November 2015. An addendum to the HHRA is provided as Appendix I of the December 2018 *Pre-Design Report*, which applied the more recent groundwater quality data obtained as part of the pre-design investigation to the risk analysis with the objective of determining whether the new data change the overall conclusions of the HHRA. Consistent with the conclusions of the 2015 HHRA, these analyses indicated that consumption of 50 meals per year of fish that have bioaccumulated constituents from groundwater that has migrated to the Ship Canal would not represent an unacceptable human health risk.
- **Hydraulic Recovery Bench Scale Test:** LNAPL saturation was analyzed on soil cores obtained near the former benzol storage area, where LNAPL has been measured on the water table. The samples were subjected to petrophysical laboratory analysis as part of Method API RP40. None of the samples revealed reductions in LNAPL saturation in response to the test, which indicates that the LNAPL is immobile as defined by the Interstate Technology & Regulatory Council (ITRC) (2009) under saturated conditions. These laboratory results indicated that physical recovery methods may not recover significant LNAPL from the subsurface.
- **ISCO Bench Scale Test:** Total oxidant demand (TOD) bench scale tests were conducted to obtain information necessary to evaluate the feasibility of *in-situ* chemical oxidation (ISCO) as a possible remedial technology to treat soil and groundwater impacted with LNAPL near the former benzol storage area. Sodium persulfate TOD results for three soil samples obtained from 6 to 10 feet bgs ranged from 13.1 to 95.7 grams per kilogram (g/kg). These results are consistent with the conclusion that oxidizing pure phase contaminant will require a significant amount of oxidant to meet clean-up goals. Oxidation will take place at the surface of non-aqueous phase liquid (NAPL) only, resulting in a slow rate of NAPL destruction. If adequate contact and rapid NAPL destruction is to be achieved, the NAPL will need to be desorbed off of the soil matrix or solubilized into the aqueous phase. Based on these bench-scale test results, ISCO was identified to be retained for further remedial evaluation.
- **Surfactant-Enhanced LNAPL Recovery Pilot Test:** After completion of the October 2017 surfactant-enhanced recovery test, groundwater monitoring of monitoring well MW-820S was conducted on a monthly basis from November 2017 to May 2018. Based on the post-pilot test monitoring, LNAPL was only detected at MW-820S during one of the six monthly sampling events (in February 2018). Based on groundwater level measurements, it was concluded to be possible that the relatively high water table measured in February 2018 mobilized LNAPL present within the capillary fringe that had not been removed as part of the 5-day surfactant-enhanced recovery test in October 2017. When the groundwater level declined after February 2018, the LNAPL may have again been entrained within the capillary fringe and was not detected based on its absence below the water table within the pilot test area. Based on the results of the surfactant-enhanced recovery test, surfactant enhanced LNAPL recovery as a possible full-scale remedial alternative was identified to be retained for further evaluation.

As requested by the USEPA during a meeting and site visit on April 25, 2019, a *Pre-Design Addendum for Former Coke Plant Area* was submitted to the USEPA on June 4, 2019. The Addendum contains information regarding regional groundwater flow directions, relevant historical groundwater quality data, and the status of occupancy of buildings located immediately to the north of the railroad corridor that is adjacent to the former Coke Plant. Based on the information provided in the Addendum, the USEPA was requested to "concur that no additional monitoring wells are necessary because the extent

of benzene-impacted groundwater is defined and that given the absence of benzene impacts in groundwater monitoring wells located to the northeast of the railroad tracks, there is no vapor intrusion risk to buildings located within this portion of the site. Moreover, the buildings located within this portion of the site are unoccupied." In a letter dated July 29, 2019, the USEPA responded that it does not foresee that any additional wells will be necessary to delineate impacted groundwater to the east/northeast of the former Coke Plant, but "recommends taking an adaptive approach to groundwater monitoring. For example, if new or different information related to the contamination is discovered through implementation of any remedies, the USEPA may direct ArcelorMittal to take such action as installing additional monitoring wells it finds necessary."

3. CONCEPTUAL SITE MODEL

A CSM was developed to evaluate contaminant sources, release mechanisms, contact media, exposure routes, and receptors for soil and groundwater impacts at the site. The CSM presents a comprehensive review of key factors to be considered in the selection of a corrective action. The CSM is based on: 1) constituent source(s), 2) transport and fate of constituents to a given medium (e.g., groundwater and/or surface water), 3) point of contact with the medium (i.e., exposure point) to receptors, and 4) route of exposure at the point of contact (e.g., incidental ingestion and/or dermal contact). If any of these elements are missing, the pathway is not considered complete and is not considered a concern for exposure to receptors. The CSM diagram for the former Coke Plant (Figure 3-1) was developed using examples provided in Data Quality Objectives Process for Hazardous Waste Site Investigations, USEPA QA/G-4HW, January 2000, and the CSM is described further in the following sub-sections.

3.1 Constituent Sources

The West Mill is a heavily industrialized facility and will continue to be in the foreseeable future. The Coke Plant, which encompassed approximately 50 acres, was developed in the early 1920s with two coke ovens and an ancillary byproduct recovery system. The Coke Plant operations ceased in April 1982 and the aboveground portions of the former Coke Plant buildings and structures were demolished in the early 1990s. The site was recently redeveloped, and is currently leased to BP for use as a construction staging area.

Much of the site is covered by coarse-grained fill materials and little vegetation is present. The shoreline of the Ship Canal is covered with hardscaping limiting erosion and dust generation. In 2009, up to 6 feet of clean granular fill materials and a geotextile material were placed over the entire site to level and improve the load bearing capacity of the site. The presence of clean fill over constituents in soil limits direct contact with soil and also limits the potential for constituents to be released in airborne dust or by overland transport.

The site is located on the shoreline of the Indiana Harbor Ship Canal, which flows into Lake Michigan (Figure 2-1). These waterways also are characterized by industrial development. Shoreline hardening is widespread and vegetation is minimal along the banks of both waterways. No true riparian margin exists at or near the site. No natural areas exist on or near the site.

Locally, the ground surface is relatively flat and varies from 589 to 592 feet MSL. In 2009, up to 6 feet of clean granular fill materials and a geotextile material were placed over the entire site to level and improve the load bearing capacity of the site. The level of Lake Michigan varies from 576 to 582 feet MSL. Locally, the groundwater elevation varies from 1 to 10 feet above the surface water level of Lake Michigan.

Hydrogeology at the site is defined by the Calumet Aquifer, which is an unconfined aquifer with a saturated thickness of approximately 33 feet at the former Coke Plant. The water table is generally encountered at a depth of approximately 6 to 15 feet bgs. Sheet pile barriers were historically installed within the Indiana Harbor Ship Canal to define and create the canal. These interlocking walls of sheet steel were driven through the permeable Calumet Aquifer and anchored in the underlying low permeability clay confining unit. Figure 2-1 shows the location of a constructed gap area of the existing sheet pile wall. The constructed gap area only includes the area where the upper 25 feet of the sheet pile wall is missing. The lower portion of the existing sheet pile wall remains in place at the constructed gap location. The lower portion of the sheet pile wall extends vertically into the clay layer (aquitard) encountered around 40 feet bgs. Groundwater elevation data for Coke Plant shallow monitoring wells located in closest proximity to the Indiana Harbor Ship Canal reveal the presence of groundwater mounding that is consistent with the discontinuity in hydraulic conductivity between the Calumet Aquifer sands and the sheet pile barrier.

The groundwater flow direction based on September 2017 water table elevations in the shallow monitoring wells is generally toward the southeast, toward the Indiana Harbor Ship Canal. Horizontal hydraulic gradients associated with shallow groundwater range from 0.0018 to 0.0065 feet per foot between water table monitoring wells in the direction of groundwater flow. Relatively high hydraulic gradients are present near the extreme southern portion of the site, in the vicinity of the constructed gap area of the upper portion of the sheet pile wall.

Similar to shallow groundwater flow, the groundwater flow direction based on September 2017 piezometric elevations in the deep wells (screened near the base of the aquifer) was generally toward the southeast. Horizontal hydraulic gradients associated with deep groundwater range from 0.0017 to 0.0041 feet per foot between deep monitoring wells in the direction of groundwater flow.

The site is highly developed and provides no habitat that would be suitable for growth, foraging, cover, or breeding by ecological receptors, such as plants and small birds and mammals. Although patches of vegetation are interspersed around railroad tracks and other industrial properties near the site, the small areal extent and isolation of each patch preclude their suitability as wildlife habitat. The site abuts the Indiana Harbor Ship Canal and groundwater underlying the site flows towards the ship canal. Thus, the ship canal represents the most plausible location where ecological receptors (such as aquatic invertebrates, fish, and piscivorous birds) might come into contact with site-related constituents.

Site sample locations are shown on Figure 2-2. Site slag-fill/soil and groundwater are impacted by byproducts of coke production. The presence of LNAPL has been detected in two monitoring wells; LNAPL samples contain petroleum VOC, PAH, and SVOC constituents. Dissolved constituents detected in groundwater 2017 include VOCs, SVOCs (some of which are PAHs), metals, and other inorganics. Constituents in groundwater have the potential to migrate off-site via the constructed gap in the sheet pile wall and into the surface water of the Indiana Harbor Ship Canal.

Data collected in 2017 reflect current conditions. However, remediation of the identified LNAPL will be conducted, such that future concentrations of constituents in groundwater are expected to be considerably lower than those observed in 2017.

3.2 Transport and Fate of Constituents

As illustrated by the site setting, a primary fate and transport mechanism at the site is the conveyance of constituents with groundwater, as groundwater discharges to ship canal surface water via the constructed gap in the sheet pile wall. Both LNAPL and constituents dissolved in groundwater may be conveyed with groundwater.

Several potential fate and transport mechanisms are deemed insignificant for human and ecological receptors. In particular, overland runoff and windblown dust are not significant fate and transport mechanisms because the majority of the site is covered by coarse-grained fill materials that restrict mobilization of surface soil particles. Bank erosion is not a significant fate and transport mechanism because the shoreline is largely covered by hardscaping to prevent erosion, except in the constructed gap area.

Volatile constituents in subsurface soil or groundwater could migrate to air. However, the site is currently used as a construction staging area, such that volatilization is not a significant fate and transport mechanism for human receptors because no buildings are present on the former Coke Plant site and buildings located immediately adjacent to this portion of the site are unoccupied. The vapor intrusion pathway is therefore incomplete based on the absence of occupied site buildings. Exposure to volatile constituents in outdoor air is currently being addressed through institutional controls and by adherence to Occupational Safety and Health Administration standards. The vapor intrusion pathway will be evaluated in the event of future site construction. Triggers for, and timing of, a vapor intrusion pathway risk evaluation will be detailed in the proposed site deed restriction. Volatilization is not a significant fate and transport mechanism relevant to ecological receptors because such organisms are not confined to indoor spaces.

Finally, discharge of groundwater to bottom sediments in the Indiana Harbor Ship Canal is not a significant fate and transport mechanism based on the following observations. Previously-detected groundwater mounding near the sheet pile barrier relative to groundwater levels near the constructed gap, coupled with reported minimal horizontal groundwater flow in the underlying clay confining unit (within which the sheet pile barrier is anchored), lead to the conclusion that groundwater is discharging to the canal through the constructed gap in the sheet pile wall, rather than to bottom sediments in the Indiana Harbor Ship Canal. It should also be noted that the Canal and Turning Basin sediment is being remediated by the Army Corps of Engineers with funds supplied by multiple parties. Moreover, the contribution, if any, from the Coke Plant cannot be readily distinguished from the documented current and historic upstream sediment loading from other industrial facilities.

3.3 Receptor Locations via Routes of Exposure/Summaries of Risks

3.3.1 Ecological

The November 2015 SLERA for the former Coke Plant concluded that significant ecological risks are not predicted for aquatic organisms exposed to constituents in groundwater that are released to the ship canal via the constructed gap in the sheet pile wall. After submission and acceptance of the SLERA, additional groundwater samples were collected and analyzed in September 2017 as part of the Pre-Design Investigation. As indicated in the December 2018 *Pre-Design Report*, the Tier 3 methodologies utilized therein were virtually identical to those used in the 2015 SLERA (other than using the updated dataset). For the constituents considered in the refined risk analysis, Tier 3 concentrations were generated based on the 95 percent UCL (or maximum) concentrations from the nine wells (2012, 2013, and 2017 data combined) divided by the estimated dilution factor of 3,250.

Hazard Quotients (HQs) were calculated as the ratios of the Tier 3 surface water concentrations to refined screening values. HQs could not be calculated for bis(2-chloroethoxy)methane or methyl chloride because screening values were not identified for these two constituents. HQs do not exceed 1 for the remaining 17 constituents, indicating that adverse effects are unlikely and no further ecological evaluation is warranted. Both bis(2-chloroethoxy)methane and methyl chloride were evaluated qualitatively as described in the 2015 SLERA. In summary, the 2017 groundwater sampling data confirmed the previous conclusion that significant ecological risks are not predicted for aquatic organisms exposed to constituents in groundwater that are released to the ship canal via the constructed gap in the sheet pile wall.

3.3.2 Human Health

The November 2015 Focused HHRA for the former Coke Plant did not identify any constituents in groundwater that pose an unacceptable risk for human receptors. After submission and acceptance of the HHRA, an additional groundwater sampling and analysis event was completed in September 2017 as part of the Pre-Design Investigation. As indicated in the December 2018 *Pre-Design Report*, the updated HHRA included seven steps: Step 1: identification of non-detected constituents in groundwater, which are not considered further; Steps 2 and 3: comparison of maximum detected constituent concentrations with MCLs, and Risk Based Concentrations (RBCs)[1], respectively; and Step 4: comparison of the 95 percent UCL on-site groundwater concentrations with their respective MCLs, or RBCs. Site groundwater concentrations included data from 2012, 2013, and 2017 and were considered first based on maximum concentrations (Steps 1 to 3) and then based on a 95 percent UCL on the mean (UCL) (Step 4).

The UCL used in Step 4 was based on wells most proximate to the constructed gap in the sheet piling (i.e., MW-827S, MW-810S, MW-826S, MW-826M, MW-809S, and MW-809M), and wells which were used to define the UCLs for arsenic, benzene, and sodium (i.e., MW-803S, MW-808S, MW-808D, MW-809D, and MW-817S). In these first four steps, the dilution of groundwater constituents in migration from groundwater to surface water was represented through application of a 10-fold dilution factor that was applied to the MCL and RBCs for non-bioaccumulative constituents. Step 5 was conducted for arsenic, benzene, and sodium and included comparison of the their respective UCLs calculated based on a more representative set of nine wells (i.e., excluding deep wells MW-808D and MW-809D) and a site-specific dilution factor of 3,250. As indicated in the December 2018 *Pre-Design Report*, no constituents had UCLs greater than their respective screening levels in Step 5 indicating risks were within acceptable levels.

Potential risks related to consumption of fish that bioaccumulate constituents from groundwater were considered in Steps 6 and 7 through comparison with RBCs calculated using the USEPA (2018) RSL calculator and assuming 32 gallons per day (g/day), for 350 days per year for 26 years, which is equivalent to 50 eight-ounce meals per year. In Step 6, RBCs for fish consumption were compared with estimated fish tissue concentrations derived using the 95 percent UCL on the mean calculated based on the 11 wells described in Step 4, above. This analysis determined that arsenic concentrations in fish tissue would exceed the screening RBC for fish consumption.

Only arsenic was considered further in Step 7, which included comparison of the arsenic tissue concentration derived based on the UCL from nine wells and the site-specific dilution factor. Consistent with the findings of the November 2015 HHRA, these analyses indicated that consumption of 50 meals per year of fish that have bioaccumulated constituents from the Ship Canal would not represent an unacceptable human health risk.

In addition to the groundwater quality evaluation presented above, the December 2018 *Pre-Design Report* compared slag-fill data obtained in 2012 and in 2017 with DQOs and Screening Levels. In this comparison, the data for the shallowest slag-fill interval (less than 2 feet bgs) and the DQOs and Screening Levels for direct contact with slag-fill were concluded to be the most relevant for consideration at this site. While several PAHs had concentrations in at least one location that were greater than the 2009 direct contact values, only benzo(a)pyrene had a concentration greater than the 2018 IDEM Screening Levels. A UCL of 11.7 mg/kg was calculated for benzo(a)pyrene based

[1] RBCs for surface water and for fish tissue were updated for this assessment using the USEPA Regional Screening Level calculator and the same assumptions as applied in the 2016 HHRA.

on all available surface soil data for 2012 and 2017. This site UCL is lower than the 2018 IDEM screening value of 21 mg/kg for benzo(a)pyrene, indicating that risks are within acceptable levels.

Despite the use of numerous health protective assumptions, the December 2018 *Pre-Design Report* did not identify any constituents in groundwater or slag-fill/soil that pose an unacceptable risk for human receptors. In addition, based on relatively high estimated advective groundwater flow rates at the site, the future LNAPL source remedial action should result in reduction in downgradient constituent concentrations within a reasonable timeframe. As such, the HHRA overestimates site concentrations and risks and, therefore, is considered to be highly health protective of site users. Moreover, groundwater on the peninsula is not used as drinking water (installation of water-supply wells is prohibited by institutional controls) and site groundwater does not impact any drinking water source. A groundwater use restriction will be implemented for the entire facility. In addition, a deed restriction will be implemented to ensure that, should ArcelorMittal vacate the site, future users of the property will understand site risks and use appropriate protection during intrusive construction activities.

In addition to the forgoing, the September 2016 *Pre-Design Work Plan* concluded that the sheet pile wall represents an effective physical hydraulic barrier and that future LNAPL source remedial action will be conducted in conjunction with implementation of a downgradient groundwater monitoring program. Based on relatively high estimated advective groundwater flow rates at the site, the planned LNAPL source remedial action should result in reduction in downgradient concentrations within a reasonable timeframe. As indicated in the September 2016 *Pre-Design Work Plan*, if Indiana Harbor Ship Canal sentinel wells MW-809S, MW-810S, MW-826S, and MW-827S indicate increasing petroleum VOC or naphthalene concentrations to levels of concern, then active groundwater remediation near the Canal will be contemplated.

4. CORRECTIVE MEASURE OBJECTIVES

Under RCRA, sites may achieve regulated status by clean closure (complete cleanup to residential standards) or more typically, by adoption of a remedy under the RCRA Corrective Action Program that includes setting performance objectives for the site and defining remedial objectives (i.e., media-specific goals or remedial standards). Through this process, protection of human health and the environment is ensured through the application of Site Performance Objectives and documented by USEPA Corrective Action Indicator criteria (e.g., Performance Standards attained, Controls required). Consistent with USEPA's Corrective Action goals, Site Performance Objectives and Remedial Objectives, both of which consider current and potential future land usages and points of compliance, are identified as follows:

- Objective No. 1: Remove identified LNAPL pursuant to USEPA letter dated April 28, 2015.
- Objective No. 2: Meet the conditions described in Current Human Exposures under Control (Environmental Indicator Finding CA725) and Migration of Contaminated Groundwater Under Control (Environmental Indicator Finding CA750), which are provided as Appendix A.
- Objective No. 3: Prevent exposure to groundwater where groundwater DQOs cannot be attained within a reasonable period of time for drinking water exposures, and construction worker exposure to contaminated groundwater.
- Objective No. 4: Prevent exposure to surface waters at concentrations of concern for reasonably anticipated human exposures.

In terms of Objective No. 1, performance metrics for LNAPL removal are provided in Table 4-1. With regard to LNAPL saturation, the key performance metric will be reduction or elimination of measurable

LNAPL in wells. With respect to LNAPL composition, the key performance metric will be to abate accumulation of unacceptable constituent concentrations in the dissolved phase downgradient of the LNAPL source. A decision endpoint will include evaluation of asymptotic reduction of LNAPL balanced with cumulative remediation costs.

With respect to Objective No. 4, 327 IAC 2-11-5 of the State of Indiana rules regarding groundwater quality indicate that each class of ground water described in Section 4 of this rule shall meet the following protective criteria:

1) Groundwater quality shall be maintained, at a minimum, to protect the current and reasonably expected future use of the groundwater.
2) Groundwater shall be maintained and protected to ensure that a contaminant concentration attributable to human activity does not increase in a drinking water well.
3) For waters of the state, surface water quality standards shall be met in the surface water at the ground water-surface water interface.

With regard to 327 IAC 2-11-5 Criteria Nos. 1 and 2, groundwater on the peninsula is not used as drinking water (installation of water-supply wells is prohibited by institutional controls) and site groundwater does not impact any drinking water source. A groundwater use restriction will be implemented for the entire facility. In addition, a deed restriction will be implemented to ensure that, should ArcelorMittal vacate the site, future users of the property will understand site risks and use appropriate protection during intrusive construction activities. With respect to 327 IAC 2-11-5 Criterion No. 3, the Tier 3 estimated surface water concentration identified in the *Screening Level Ecological Risk Assessment (SLERA) Addendum* (appended to the December 2018 *Pre-Design Report*) is 0.0048 mg/L benzene[2]. Minimum surface water quality criteria are provided in 327 IAC 2-1.5-8 of the State of Indiana rules. For benzene, the nondrinking water criteria for noncancer and cancer risks are 0.51 mg/L and 0.31 mg/L, respectively. The drinking water criteria for noncancer and cancer risks for benzene are 0.019 mg/L and 0.012 mg/L, respectively. The estimated surface water benzene concentration identified in the SLERA Addendum does not exceed any of the minimum surface water quality criteria provided in 327 IAC 2-1.5-8 for benzene. However, the future LNAPL source remedial action will be conducted in conjunction with implementation of a downgradient groundwater monitoring program. As indicated in Section 3.3.2, if Indiana Harbor Ship Canal sentinel wells MW-809S, MW-810S, MW-826S, and MW-827S indicate increasing petroleum VOC or naphthalene concentrations to levels of concern, then active groundwater remediation near the Canal will be contemplated.

To facilitate achievement of these corrective measure objectives within reasonable timeframes, the following sections have been prepared as requested in the USEPA letter dated July 29, 2019. The purpose of the following sections is to: 1) identify and evaluate corrective measures to remove site LNAPL using threshold and balancing criteria, 2) recommend and provide justification for a preferred corrective action alternative, and 3) discuss intended financial assurance mechanisms to ensure that active remedies and long-term operation and maintenance schedules can continue.

[2] Benzene is considered a key constituent of concern, based on toxicity, mobility, concentration and frequency of detection in groundwater within the Former Coke Plant Area.

5. IDENTIFICATION AND SCREENING OF CORRECTIVE MEASURE TECHNOLOGIES

The objective of this section is to identify, describe, and screen corrective measure technologies and/or processes. The LNAPL observed in monitoring wells at the former Coke Plant is the result of LNAPL draining from pores in the immediate vicinity of the wells. LNAPL can drain into a collection point either naturally or due to engineered controls such as pumping, to the extent it remains mobile in the area of the collection point. Once the residual saturation is reached (i.e., the LNAPL saturation under which the LNAPL is immobile under the applied gradient), further hydraulic recovery in the liquid phase, without altering the chemical or physical properties of the residual LNAPL, will not be possible (ITRC, 2009). At residual saturation, the LNAPL cannot move unless the chemical or physical properties of the LNAPL are altered by other LNAPL remediation technologies (USEPA, 2005). Examples of chemical or physical changes that can affect the residual saturation include induced pressure gradients from a soil vapor extraction (SVE) system, changes in interfacial tension through the use of surfactants, or reduction in viscosity through the addition of heat (Charbeneau, 2000).

Based on information contained in ITRC (2009), applicable remedial technologies for the identified LNAPL at the former Coke Plant include hydraulic containment, surfactant enhanced recovery, ISCO, air sparging/SVE, and thermal methods. This section screens these technologies with respect to their ability to achieve CMOs. Technologies retained after the screening are then evaluated in detail in Section 6.

5.1 No Further Action

NFA involves no corrective measures and no further investigation or monitoring of LNAPL at the former Coke Plant site. This response serves as a baseline against which the other corrective measures and technologies are compared. The NFA response may not mitigate all unacceptable risks to human health or the environment without institutional and engineering controls and is therefore not retained for further evaluation.

5.2 Institutional and Engineering Controls

Institutional controls are legal means, or a combination of legal and physical means, to prevent potential exposures to contaminants by limiting uses and activities at a given property. Institutional controls may be implemented alone or in combination with other technologies. In terms of engineering controls, contact with slag-fill and groundwater is limited by an ArcelorMittal dig-permit program that specifies procedures and/or protective equipment that must be followed by employees and construction workers who might contact slag-fill and groundwater in potentially impacted areas.

In conjunction with institutional and engineering controls, NSZD of LNAPL and natural attenuation (NA) of benzene in solution is expected to continue in the future. It is also understood that groundwater within the peninsula is not used as drinking water, and a groundwater use restriction will be implemented for the former Coke Plant site. In addition, a deed restriction will be implemented to ensure that, should ArcelorMittal vacate the site, future users of the property will understand site risks and use appropriate protection during intrusive construction activities. Moreover, if the site were to be transferred to new ownership or used for purposes not requiring the current level of Occupational Safety and Health Administration (OSHA) protection, institutional controls will be implemented and the potential for vapor intrusion will be reassessed at that time.

Institutional controls as a sole corrective measure are screened out from further evaluation because, when implemented as a stand-alone measure, they will not achieve the USEPA's stated objective of

LNAPL removal within a reasonable timeframe. However, institutional controls are proposed to be adopted in conjunction with the active corrective measures considered in Section 6 and Section 7.

5.3 Technology 1 – Hydraulic Containment

Groundwater extraction and treatment (pump-and-treat) is an active corrective measure, in which groundwater is extracted from the subsurface for the purpose of aboveground treatment prior to re-injection, reuse, or discharge. Collection techniques include use of vertical or horizontal extraction wells or interceptor trenches.

As part of the 2017 and 2018 Pre-Design Investigation, Ramboll conducted a bench-scale treatability study to evaluate the potential to recover LNAPL from the former Coke Plant site. The results of the bench-scale tests were used to evaluate the effectiveness of physical (hydraulic) recovery of the LNAPL through conventional methods (such as interception wells or trenches).

A total of three soil cores were obtained through the LNAPL zone, and the soil cores were subjected to laboratory analysis using Method API RP40. The test provides porosity, field LNAPL saturation, and residual saturation under water displacement conditions, which is anticipated to be greater than residual saturation under air displacement conditions. This physical recovery test method provides the field LNAPL saturation and the residual LNAPL saturation. The sample is driven to residual saturation by water displacing LNAPL to demonstrate product mobility. The difference between the field LNAPL saturation and residual LNAPL saturation is the recoverable fraction of LNAPL through physical recovery methods (e.g., via collection trenches or pumping wells). The test is conducted at hydraulic gradients that far exceed typical field conditions. As such, values for residual LNAPL saturation measured using this method are conservative when compared with field residual saturation.

As indicated in the December 2018 *Pre-Design Report*, initial LNAPL saturation values and residual LNAPL saturation values ranged from 8.3 to 14.0 percent. None of the samples revealed reductions in LNAPL saturation in response to the tests, which indicates that the LNAPL is immobile as defined by the ITRC (2009) under saturated conditions. These laboratory results indicate that physical recovery methods may not recover significant LNAPL from the subsurface. Based on this information, the hydraulic recovery corrective measure is screened out from further evaluation.

5.4 Technology 2 – Surfactant Enhanced Recovery

Surfactant-enhanced recovery for treatment of NAPL source zones typically involves injection of an aqueous solution that contains 1 to 10 percent active surfactant. The surfactant solution also may contain salts and organic compounds that improve stability and performance. The chemical structure of surfactants results in their strong tendency to accumulate at the interface between two phases and thereby alter interfacial properties. The modification of interfaces results in the term surfactant or *surface-active agent*.

The mobilized or solubilized LNAPL is then typically recovered by groundwater extraction and treated *ex-situ*. Each application requires careful selection of surfactants or co-solvents to adequately enhance LNAPL solubilization. The performance of a surfactant in the subsurface is dependent on temperature, sorption, degradation, the aqueous geochemistry of the injection water and the surface chemistry of aquifer solids. The efficiency of the process requires good contact between the surfactant and the residual LNAPL. When implemented properly, surfactant-enhanced recovery technologies can effectively remove large quantities of LNAPL within weeks to months, depending on aquifer permeability. While stand-alone hydraulic recovery of LNAPL is not practicable at the former Coke Plant based on reductions in LNAPL saturation in response to the Method API RP40 testing discussed in Section 5.3, surfactant flushing represents an effective technology for treatment of LNAPL source zones and is therefore retained for further evaluation.

5.5 Technology 3 – *In-Situ* Chemical Oxidation

ISCO involves the injection of an oxidizing agent into the subsurface to react with residual LNAPL constituents. Some of these agents directly oxidize residual and dissolved-phase hydrocarbons, while others initiate a series of chain reactions that create oxidizing free radicals, which in turn react with LNAPL constituents. Commonly applied oxidants are Fenton's reagent (hydrogen peroxide and iron catalyst), sodium persulfate, and ozone. The application of some oxidants may lead to significant generation of heat and pressure in the subsurface, which needs to be carefully managed during an ISCO implementation to ensure a safe working environment.

Oxidants are typically applied to the subsurface through injection but can also be mixed into excavations or trenches. Oxidant selection requires careful analysis of the target compounds and the natural oxidant demand of the soil (e.g., natural organic matter) that may lead to unwanted consumption of oxidant. Chemical oxidants will oxidize natural organics and reduced inorganics, and the ISCO loading requirements will therefore be higher for soils with high organic carbon content. Particularly for soils with relatively low petroleum hydrocarbon contaminant concentrations, ISCO may become cost prohibitive if the contaminant oxidant demand represents a relatively small fraction of the total oxidant demand of the soil.

Oxidants can be effective on the dissolved-phase and can also target residual LNAPL through enhanced dissolution and destruction. However, oxidizing pure phase contaminant can require a significant amount of oxidant to meet CMOs. ISCO technologies can be effective in relatively short timeframes, though require careful design to ensure that the observed decreases in concentrations are sustained to meet remedial objectives. The ISCO injection design is particularly important in lower permeability or heterogeneous environments where achieving good contaminant and oxidant contact/mixing can be difficult. To achieve effective distribution of an oxidant throughout a treatment zone and the essential contact of oxidant with target contaminants, normally two or more active ISCO delivery events are required within the target treatment zone. Based on its general ability to oxidize residual and dissolved-phase hydrocarbons, ISCO is retained for further evaluation.

5.6 Technology 4 – Air Sparging/SVE

Air sparging involves the injection of air below the water table and residual LNAPL to stimulate mass transfer to the gaseous phase; this air injection is coupled with the simultaneous capture and extraction by a SVE system. The efficiency of this system is largely controlled by the ability to ensure adequate flow through (rather than bypass of) the residual LNAPL zone and success is therefore usually dictated by stratigraphy, with greatest success in homogeneous soils. The volatilization element of air sparging is therefore of limited effectiveness within typical heterogeneous soils, as the varying soil permeabilities result in channelized air flow and therefore often incomplete treatment. Biosparging, a less intensive variant of this technology, differs from air sparging in that *in-situ* bioremediation, rather than physical stripping, is encouraged. Variations of this remedial technology include the use of either pure oxygen or ozone as the injected gas to achieve higher dissolved oxygen concentrations. Channelized air flow problems encountered with sparging can be further mitigated through aggressive groundwater re-circulation and/or high density sparge point installation.

Although air sparging is used to treat residual LNAPL, it should not be used where pooled free product is present because air sparging can create groundwater mounding that could cause free product to migrate and contamination to spread. Air sparging is also used primarily to treat compounds with moderate to high Henry's Law Constants (i.e., high vapor pressure and low solubility), such as halogenated and nonhalogenated VOCs. It is not generally applicable to nonhalogenated SVOCs. As indicated in Section 2.5.3, the measured kinematic viscosity of a 2013 LNAPL sample from monitoring well MW-820S was 15.39 cSt, and 15.34 cSt for the 2013 LNAPL sample from monitoring well MW-821S. Fuel oil No. 5A represents an example fluid with a similar range of kinematic viscosities.

Based on the presence of pooled LNAPL at the former Coke Plant with a likely low vapor pressure, the air sparging/SVE corrective measure is not retained for further evaluation.

5.7 Technology 5 – *In-Situ* Thermal Remediation

In-situ thermal remediation (ISTR) includes those technologies that apply heat to environmental media, resulting in vaporization or destruction of contaminants. *In-situ* thermal technologies are designed to: 1) primarily enhance recovery of viscous LNAPL under low heating conditions (approximately 80°C), 2) enhance mass transfer of VOCs to the vapor phase under moderate heating conditions (approximately 100°C), or 3) enhance mass transfer of SVOCs to the vapor phase under high heating conditions (approximately 325°C), which can also result in destruction of LNAPL. *In-situ* thermal technologies include steam injection, thermal conduction heating, and electrical resistance heating. Technology selection is a function of the nature of the contaminants and the site setting. Thermal technologies often achieve very high mass removal rates in relatively short timeframes, but they are also energy intensive. These factors are considered in the context of the overall life cycle of the project on a site-specific basis to assess whether thermal technologies may be more cost-effective or have a lower environmental footprint than conventional technologies that operate over an extended timeframe.

For effective treatment, pneumatic and hydraulic control must be achieved during the heating period, and a clear path for the generated vapors to an extraction system must be provided. If remedial goals are stringent, target temperatures are set equal to the *in-situ* boiling point of the soil and groundwater system, such that a phase change to the vapor state is forced by the heating. During operation, detailed temperature monitoring and process sampling is conducted and compared to the performance calculated based on mass and energy balances. Interim and final sampling is used to verify remedial progress and performance prior to demobilization.

Steam has been used to heat relatively permeable zones, which are typically sandy layers with relatively low clay and mineral contents. Full-scale remediation has been conducted using steam enhanced extraction (SEE), where the *in-situ* process uses steam injection and aggressive fluids extraction (Udell et al., 1991, 1999; Eaker, 2003; EarthTech and SteamTech, 2003). Udell (1996) critically reviews mechanisms used in SEE.

Electrical resistance heating (ERH) involves passing electricity through the soil between electrodes and heating the soil by Joule heating. In the 1990s, three-phase and six-phase ERH were developed and demonstrated in the field. Laboratory studies demonstrated that thermodynamic changes induced by ERH can lead to very effective removal of VOCs from silts and clays (Heron, et al., 1998). Since the late 1990s, commercial full-scale implementations of both three-phase and six-phase ERH have been completed, some under the trade name Electro-Thermal Dynamic Stripping Process (ET-DSP) (McGee, 2003).

A robust method for heating soils and groundwater is thermal conduction heating, also referred to as *in-situ* thermal desorption (ISTD) (Stegemeier and Vinegar, 2001). ISTD is a soil remediation technology in which heat and vacuum are applied simultaneously. Heat flows into the soil primarily by conduction from heaters typically operated between 500 and 800°C, with the target soil volume being heated to 100°C for VOC removal. As the soil is heated, water is boiled and LNAPL constituents in the soil are vaporized. The resulting steam and vapors are drawn toward extraction wells for *in-situ* and aboveground treatment. Compared to fluid injection processes, the conductive heating process is very uniform in its vertical and horizontal sweep. Based on their ability to enhance LNAPL removal, SEE, ERH, and ISTD are retained for further evaluation.

6. EVALUATION OF CORRECTIVE MEASURE ALTERNATIVES

The objective of this section is to conduct a detailed evaluation of the corrective measures retained in Section 5. This evaluation of corrective measures is conducted in general accordance with RCRA corrective action guidance and the National Contingency Plan (NCP) (40 CFR Part 300). The three retained corrective measures are evaluated based on three required criteria and five balancing criteria, as described in Section 6.1. Table 6-1 presents the detailed evaluation of the three corrective measures relative to the eight criteria, while Section 6.2 to Section 6.6 describe each corrective measure, advantages and disadvantages, and costs to implement the technology and to complete long-term monitoring following remedy implementation.

In developing the corrective measures, Ramboll estimated the areas or footprints to be remediated, as well as the effectiveness and duration of the corrective measures. These estimates and assumptions are based on information available at the time of preparing this report and might be subject to change should additional information become available.

Figure 6-1 illustrates the approximate LNAPL corrective measure footprint that would be remediated. For purposes of this Remedial Study, the treatment zone has approximate horizontal dimensions of 300 feet by 130 feet. The estimated average vertical dimensions (i.e., depth) of the treatment zone are 5 to 11 feet bgs. The actual vertical treatment zone at any specific location within the treatment footprint would vary based on the actual depth to the water table and LNAPL at that location. Major capital and operation and maintenance (O&M) costs for each of the corrective measures are provided in Appendix B, Tables B-1 to Table B-3.

6.1 Evaluation Criteria

RCRA corrective measures are evaluated with respect to the following eight criteria:

- protection of human health and the environment;
- achievement of CMOs;
- controlling sources of contaminant release;
- long-term effectiveness and reliability;
- short-term effectiveness;
- reduction of toxicity, mobility, or volume through treatment;
- implementability; and
- cost.

The first three criteria listed above are threshold criteria, which are minimum requirements to be achieved; the remaining five are balancing criteria. These criteria are included in the RCRA Corrective Action Plan (USEPA, 1994). These criteria were further explained and addressed in USEPA's Strategy on Corrective Action for Releases from Solid Waste Management Units at Hazardous Waste Management Facilities, published as an Advance Notice of Proposed Rulemaking at 61 Fed. Reg. 19432 (May 1, 1996) (USEPA, 1996). The USEPA ultimately determined that a final rule on this topic was not necessary, confirming that the investigation and remedial policies described in the proposed rule and preamble could be used as guidance, and stating that those policies could be implemented more flexibly using existing authorities (USEPA, 1997 and USEPA, 1999).

These criteria are also included in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) NCP. The USEPA has emphasized the substantive similarity of decision making

between RCRA and CERCLA. See USEPA Guidance Memorandum Coordination between RCRA Corrective Action and Closure and CERCLA Site Activities, September 24, 1996.

Under CERCLA, State Acceptance and Community Acceptance are also criteria to be considered and are subject to agency decision making processes after any opportunity for public comment. Given the necessary consideration of these factors by IDEM, we offer a brief analysis for the proposed remedy in this Remedial Study. Finally, recommendations from USEPA's Green Remediation Guidance (USEPA, 2008) were considered. The evaluation criteria are discussed below.

6.1.1 Threshold Criteria

The first three threshold criteria relate to statutory requirements that each corrective measure must satisfy in order to be eligible for selection, namely protection of human health and the environment, ability to achieve CMOs, and source control.

6.1.1.1 Protection of Human Health and the Environment

The first threshold criterion considers whether each corrective measure provides adequate protection of human health and the environment. Evaluation of the overall protectiveness of a corrective measure as part of this Remedial Study focuses on whether a specific corrective measure achieves adequate protection and should describe how site risks posed for each complete pathway are eliminated, reduced, or controlled through treatment, engineering, or institutional controls. This evaluation also allows for consideration of whether a corrective measure poses any unacceptable short-term or cross-media impacts (USEPA, 1988).

6.1.1.2 Ability to Achieve Corrective Measure Objectives

The second threshold criterion is used to determine whether each corrective measure will meet groundwater risk-based concentrations for a reasonable exposure scenario (or point of exposure) using currently acceptable risk assessment methods and up-to-date risk-based concentrations and scenarios.

6.1.1.3 Source Control

The third threshold criterion focuses on reducing or eliminating further releases of hazardous wastes or constituents that may pose a threat to human health and the environment. In satisfying this criterion, the USEPA favors treatment for wastes and contaminated media that are principal threats, and engineering controls for wastes and contaminated media that can be reliably contained, pose relatively low long-term threats, or for which treatment is impracticable.

6.1.2 Balancing Criteria

The five balancing criteria described below are the further technical criteria upon which the detailed evaluation is primarily based. By definition, all corrective measures must achieve the threshold criteria. Consequently, the corrective measures are largely differentiated by their performance relative to balancing criteria. These balancing criteria are not listed in order of importance and any one of the criteria may be the most important factor at a particular site (USEPA, 1996).

6.1.2.1 Long Term Effectiveness and Reliability

Evaluation of corrective measures under this criterion considers the effectiveness of a corrective measure with respect to residual risk remaining at the site after response objectives have been met. The primary focus of this criterion is the extent and effectiveness of the controls that may be required to manage the risk posed by treatment residuals and/or untreated wastes. The magnitude of residual risk and adequacy and reliability of controls should be addressed for each corrective measure (USEPA, 1988).

6.1.2.2 Short Term Effectiveness

This balancing criterion considers the effects of the corrective measure during the construction and implementation phase and until response objectives are achieved. Under this criterion, corrective measures are evaluated with respect to their effects on human health and the environment during implementation. Factors evaluated under this criterion include protection of the community and workers during remedial actions, environmental impacts, and time until remedial response objectives are achieved (USEPA, 1988).

6.1.2.3 Reduction of Toxicity, Mobility, or Volume through Treatment

Treatment is preferred whenever practicable and cost-effective (USEPA, 1996). This balancing criterion addresses the statutory preference for selecting corrective measures that employ treatment technologies that permanently and significantly reduce toxicity, mobility, or volume through treatment of the hazardous substances as their principal element. This preference is satisfied when treatment is used to reduce the principal threats at a site through destruction of toxic contaminants, reduction of the total mass of toxic contaminants, irreversible reduction in contaminant mobility, or reduction of total volume through treatment of contaminated media (USEPA, 1988).

6.1.2.4 Implementability

Implementability addresses the technical and administrative feasibility of implementing a corrective measure, and the availability of various services and materials required during its implementation. In evaluating the technical feasibility of a corrective measure, the following factors warrant consideration: construction and operation, reliability of the technology, ease of undertaking additional remedial action, and monitoring of corrective measure effectiveness (USEPA, 1988).

6.1.2.5 Cost

The cost criterion addresses the estimated cost of designing, implementing, managing, and reporting on the outcome of a corrective measure. Costs considered under this balancing criterion include direct and indirect capital costs, and annual O&M costs (including any O&M costs after implementation of the remedy). The distribution of costs over time informs trade-offs between corrective measures. The costs of potential future corrective measures, in the event that the selected remedy proves ineffective, may be addressed if deemed appropriate based on qualitative engineering judgment. To compare costs between different corrective measures, a present worth analysis is conducted. USEPA (1988) specifies that costs developed as part of the Remedial Study should provide an accuracy of +50 percent to -30 percent (USEPA, 1988). Cost may become an important consideration in choosing the remedy that most appropriately addresses the circumstances at the facility, and provides the most efficient use of resources (USEPA, 1996).

For purposes of calculating the present worth of each corrective measure, a discount rate of 7 percent (USEPA, 2000) is used in conjunction with a 1.5 percent[3] inflation escalator value. The estimated costs for each corrective measure are summarized in Appendix B, Table B-1 to Table B-3. Estimated costs for implementing the corrective measures include costs for 7 years of groundwater monitoring and reporting. The assumed duration of groundwater monitoring includes 2 years of quarterly monitoring, followed by 2 years of semi-annual monitoring, followed by 3 years of annual monitoring. The estimated costs identified in Table B-1 to Table B-3 represent most likely costs and include a 10 percent scope contingency; the +50 percent to -30 percent level of accuracy associated with a Remedial Study is then applied to the likely costs. For example, a likely cost of $1,000,000 would be associated with a cost range of $700,000 to $1,500,000. The assumed 7-year duration for groundwater monitoring for each of the four corrective measures reflects a reasonable timeframe that

[3] U.S. Bureau of Labor Statistics year-over-year inflation rate for 2019.

may be necessary to demonstrate stable or decreasing VOC concentrations in groundwater site-wide in response to groundwater remediation.

6.1.3 State and Community Acceptance

State acceptance addresses potential technical and administrative issues and concerns that IDEM may identify for a given corrective measure. Community acceptance considers potential issues and concerns that the public may identify for a given corrective measure (USEPA, 1988).

6.2 Corrective Measure 1 – Surfactant-Enhanced Recovery

Surfactants, when introduced into contaminated soil and groundwater regimes, can reduce the surface tension of water from 73 dynes to less than 30 dynes. This reduction in surface tension improves the wetting ability and movement of the aqueous phase in the soil and groundwater (unsaturated and saturated) zones while the surfactant is present. Surfactant application therefore enhances LNAPL dissolution and contaminant desorption. Once the surfactant applications are completed, ambient site conditions return.

The surfactant is typically applied in-situ using a "push-pull" approach through injection wells via a "push" injection, and after a brief contact time (hours to days), the liberated contaminants are then extracted at each injection well, for the "pull" to recover the liberated contaminant mass. Based on conservative assumed injection diffusion radius values, the surfactant application events could occur through approximately 39 injection well locations (six existing pilot test wells plus 33 new wells) within the identified area of LNAPL at the former Coke Plant. A total of approximately 10,400 gallons of surfactant solution would be applied through the 39 injection wells as part of each push-pull application event. The first three application events are assumed to be conducted using 4 percent surfactant solution, followed by three additional application events using 2 percent surfactant solution, for a total of six push-pull application events. The major technical design parameters to implement surfactant-enhanced recovery within the treatment zone are preliminarily estimated as follows:

- Treatment area: 32,000 square feet
- Treatment depth: 5 to 11 feet bgs
- Treatment volume: 7,100 cubic yards
- Approximate number of injection wells: 39
- Approximate volume of undiluted surfactant: 2,400 gallons (six injection events)
- Approximate volume of surfactant solution: 62,000 gallons (six injection event)

Surfactant-enhanced LNAPL recovery can be implemented within an approximately 1-year timeframe and will be effective shortly after push-pull application events. Surfactant-enhanced recovery is a demonstrated method of removing LNAPL from soil and groundwater, resulting in a moderate degree of reduction of toxicity and mobility of contamination, and moderate to high reduction of volume of contamination through LNAPL extraction. Multiple push-pull application events would be necessary; however, long-term effectiveness is well demonstrated and verifiable via long-term monitoring.

Based on six push-pull application events and 7 years of groundwater monitoring and reporting, the net present value (NPV) cost to implement the surfactant-enhanced LNAPL recovery corrective measure for the LNAPL treatment zone is approximately $3,512,000. The actual NPV cost could increase if more than six push-pull application events are needed to achieve CMOs.

6.3 Corrective Measure 2 – *In-Situ* Chemical Oxidation

The conceptual design of ISCO requires identification of the introduction method and the oxidant, as well as estimation of oxidant demand, mass of oxidant, volume of solution and number of injection points, as follows. Based on the general presence of permeable slag-fill materials near the water table at the site, hydraulic injection of oxidants within the identified LNAPL treatment area should be feasible.

Sodium persulfate is a suitable oxidant for the former Coke Plant LNAPL based on its demonstrated effectiveness in treating hydrocarbon LNAPL. Using a treatment footprint of 39,000 square feet, and an assumed average LNAPL thickness of 1 foot and specific gravity of 0.90, an aquifer porosity of 20 percent, with 10 percent of that void space occupied by LNAPL, the estimated LNAPL mass totals 36,000 pounds. Based on an estimated stoichiometric ratio of 15 moles of persulfate to oxidize one mole of aromatic hydrocarbon, the treatment zone would require approximately 830 tons of oxidant. If this quantity of sodium persulfate were injected as a 30 percent solution by weight over six injection events, each injection event would apply approximately 94,000 gallons of reagent. The injection points could be advanced on 25-foot centers, for a total of approximately 64 direct push injection locations within the treatment zone. ISCO of the VOC-impacted groundwater would be followed by an assumed 7 years of groundwater monitoring.

The major technical design parameters to implement ISCO within the treatment zone are preliminarily estimated as follows:

- Treatment area: 32,000 square feet
- Treatment depth: 5 to 11 feet bgs
- Treatment volume: 7,100 cubic yards
- Approximate number of ISCO injection points: 64
- Approximate mass of oxidant: 138 tons (each injection event)
- Approximate volume of oxidant solution: 94,000 gallons (each injection event)

ISCO can be implemented within an approximately 1-year timeframe and will be effective shortly after injection events. ISCO is a demonstrated method of removing LNAPL from soil and groundwater, resulting in a moderate degree of reduction of toxicity and mobility of contamination, and moderate reduction of volume of contamination through destruction of organic contaminants from the aqueous phase. Multiple oxidant injection events would be necessary, given the relatively short persistence of the oxidant in the subsurface. Long-term effectiveness is demonstrated and verifiable via long-term monitoring.

A disadvantage of the ISCO corrective measure is its relatively high cost (mainly because oxidizing the LNAPL at the former Coke Plant requires a significant amount of oxidant). Based on six oxidant injection events and 7 years of groundwater monitoring and reporting, the NPV to implement the ISCO corrective measure for the LNAPL treatment zone is approximately $7,252,000. The actual NPV cost would likely increase if more than six injection events are needed to achieve CMOs.

6.4 Corrective Measure 3 – *In-Situ* Thermal Remediation

As discussed in Section 6.6, SEE, ERH, and ISTD are the most commonly applied ISTR technologies. For sites with relatively high hydraulic conductivities within the treatment zones (i.e., greater than approximately 10^{-4} cm/sec), SEE is generally more cost-effective than either ERH or ISTD. Based on results of *in-situ* hydraulic conductivity testing conducted to date at the former Coke Plant, SEE is selected for detailed evaluation.

SEE achieves on-site treatment of LNAPL-impacted soil and groundwater through steam injection into wells and extraction of hot fluids. Steam propagation is a stable and predictable process, governed by heat transfer to the formation. Steam propagation processes have been studied intensively and used for oil recovery and remediation of a wide range of contaminants. SEE achieves on-site treatment of LNAPL-impacted soil and groundwater through steam injection into wells and extraction of hot fluids. SEE is applied at relatively low and moderate temperatures (less than 100°C). Injection and extraction wells are installed that are used to inject steam into the subsurface while simultaneously extracting steam, vapors, mobile NAPL, and groundwater. The injected steam is used to heat the subsurface to target treatment temperatures, which results in displacement as a NAPL phase and extraction with pumped groundwater. SEE allows for high net extraction of fluids and displaces large amounts of groundwater towards the extraction wells. Consequently, SEE limits the volume of water that must be heated to allow the formation to reach target temperatures. Displacement facilitates hydraulic control of NAPL mobility. The sweep of steam through the formation and the accompanying pressure gradient displace mobile NAPL as an immiscible phase front, which is recovered at the extraction wells.

The major technical design parameters to implement SEE within the treatment zone are preliminarily estimated as follows:

- Treatment area: 32,000 square feet
- Treatment depth: 0 to 15 feet bgs
- Treatment volume: 17,800 cubic yards
- Approximate number of SEE injectors: 52
- Approximate number of extraction wells: 15
- Approximate number of temperature sensors: 25
- Duration of heating: 120 days

This ISTR corrective measure can be implemented within an approximately 1-year period and will be effective several months after implementation. Long-term effectiveness is well demonstrated and verifiable via long-term monitoring. High cost is a disadvantage of this corrective measure. Based on the preliminary design parameters identified above, the estimated NPV to implement ISTR, in conjunction with 7 years of groundwater monitoring and reporting, is approximately $5,440,000.

6.5 Monitoring and Institutional Controls as Elements of Corrective Measures

Post-implementation groundwater monitoring is included as part of the evaluated corrective measures. Through long-term monitoring, data collected from monitoring wells is used to interpret remedy effectiveness, plume stability, and attenuation of CVOC concentrations over a 7-year period. For purpose of this Remedial Study Report (Revision 1), the scope of groundwater monitoring assumes 2 years of quarterly monitoring, followed by 2 years of semi-annual monitoring, followed by 3 years of annual monitoring. Groundwater monitoring programs typically include periodic analyses of geochemical conditions and CVOC concentration trends to evaluate remedy effectiveness.

The sheet pile wall represents an effective physical hydraulic barrier; therefore, the future LNAPL source remedial action will be conducted in conjunction with implementation of the groundwater monitoring program identified above. In the event that Indiana Harbor Ship Canal sentinel wells MW-809S, MW-810S, MW-826S, and MW-827S indicate increasing petroleum VOC or naphthalene concentrations to levels of concern, then active groundwater remediation near the Canal will be contemplated.

Groundwater on the peninsula is not used as drinking water (installation of water-supply wells is prohibited by institutional controls) and site groundwater does not impact any drinking water source. A groundwater use restriction will be implemented for the entire facility. In addition, a deed restriction will be implemented to ensure that, should ArcelorMittal vacate the site, future users of the property will understand site risks and use appropriate protection during intrusive construction activities. Exposure to volatile constituents in outdoor air is currently being addressed through institutional controls and by adherence to OSHA standards. The vapor intrusion pathway will be evaluated in the event of future site construction. Triggers for, and timing of, a vapor intrusion pathway risk evaluation will be detailed in the proposed deed restriction.

7. COMPARATIVE EVALUATION OF CORRECTIVE MEASURES

A comparative evaluation of the three corrective measures for the former Coke Plant LNAPL is presented in Table 7-1. These three corrective measures consist of Corrective Measure 1 – Surfactant Enhanced Recovery, Corrective Measure 2 – ISCO, and Corrective Measure 3 – ISTR (via steam enhanced extraction). All three corrective measures meet the criteria of overall protection of human health and the environment and compliance with CMOs to a moderate to high degree of confidence.

Surfactant enhanced recovery can represent an effective technology for treatment of LNAPL source zones, if good contact between the surfactant and residual LNAPL is achieved). Estimated costs to implement surfactant enhanced recovery are high at the former Coke Plant and total approximately $3,512,000.

There is only a moderate degree of confidence that ISCO will achieve CMOs. Key limitations associated with ISCO are related to delivery difficulties, frequent concentration rebounds following treatment, and high costs. Contaminant rebound is a common occurrence, and has been attributed to the following factors: 1) reactants are short-lived and thus do not reach contaminants in low permeability matrices, 2) attenuation processes may be disrupted by reducing bacterial populations, and/or 3) sorbed contaminants may be released following oxidation of natural organic matter. As the pore space becomes filled with NAPL, the amount of oxidant needed to remediate the contaminant significantly increases. Oxidation will take place at the surface of NAPL only, resulting in a slow rate of NAPL destruction. If adequate contact and rapid NAPL destruction is to be achieved, the NAPL will need to be desorbed off of the soil matrix or solubilized into the aqueous phase. As such, oxidizing pure phase contaminant can require a significant amount of oxidant to meet CMOs. Based on the foregoing, the cost to implement ISCO is very high (estimated to total approximately $7,252,000 to treat the LNAPL near the former benzol storage area, assuming six ISCO injection events).

ISTR is an aggressive treatment technology capable of removing the vast majority (greater than 99 percent) of contaminant mass from even heavily contaminated sources. However, even when the entire source zone is treated, a small fraction of the contaminant mass may remain after treatment. Further, the cost to implement ISTR is very high (estimated to total approximately $5,440,000 to treat the LNAPL near the former benzol storage area).

7.1 Preferred Corrective Measure: Surfactant-Enhanced Recovery

The preferred corrective measure for treatment of the LNAPL near the former benzol storage area zone is Corrective Measure 1 – surfactant-enhanced recovery in combination with monitoring and institutional controls. This corrective measure meets the evaluation criteria of reduction of toxicity, mobility, or volume through treatment to a moderate to high degree. Use of the recommended surfactant-enhanced recovery approach provides the following key benefits when treating source areas with LNAPL, relative to hydraulic extraction approaches:

- Surfactants overcome challenges associated with contaminant sorption and solubility in terms of reduced availability for remediation.
- Surfactants lower the relative surface tension of water, thereby improving its wetting and associated hydraulic conductivity properties.
- Through their selective dissolution of contaminants below their critical micelle concentrations, surfactants broaden the range of contaminants that can be treated and enhance in-situ physical, biological and chemical remediation.

The cost of the surfactant-enhanced recovery corrective measure is substantially lower than the costs of the ISCO or ISTR corrective measures. Surfactant-enhanced recovery is reliable and can be verified through post-treatment groundwater monitoring. In addition to cost, *in-situ* treatment technologies are considered green remediation (USEPA, 2008). Injection and extraction of surfactant amendment results in relatively low land disturbance, and requires little fuel consumption. The surfactant-enhanced recovery corrective measure with groundwater monitoring and institutional controls is preferred as the corrective measure to most effectively achieve the described remedial objectives in a cost-effective manner.

7.2 Compliance with Applicable Standards for Management of Wastes

The preferred corrective measure, surfactant-enhanced recovery, would be designed to comply with all applicable federal, state, and local standards, regulations, and/or ordinances. Wastes generated during implementation of the corrective measure are expected to be limited to soil cuttings and well development purge water associated with well installation and spent granular activated carbon (GAC) vessels as needed associated with short-term treatment of extracted groundwater prior to injection (if conducted). Associated waste management activities that will be completed during implementation will be conducted in compliance with all applicable state and federal regulations. For waste in media to be sent off site, the waste will be profiled for landfill acceptance at an authorized facility. Construction debris removal will be conducted by the remediation contractor.

7.3 State and Community Acceptance

Under CERCLA, state acceptance and community acceptance are criteria to be considered and are subject to agency decision making processes after opportunity for public comment has been provided. Considering Ramboll's conducting corrective measure evaluations in accordance with USEPA Guidance, state acceptance of the proposed corrective measure is expected. Further, IDEM has approved other in-situ remedies that expedite site remediation. The surfactant-enhanced recovery and institutional control remedy is expected to be accepted by the community for several reasons. First, the remedy will predominately involve on-site activity with little additional traffic and no off-site impacts. Second, the remedy will shorten the duration of time required for removal of LNAPL, and third, surfactant-enhanced recovery will not present any risks to on-site workers or the community.

8. PROJECTED NEXT STEPS

Based on USEPA guidance and practice and also Ramboll's experience, the following steps are expected following submission of this Remedial Study Report (Revision 1). Though the steps are listed below in sequential order, target completion dates are not provided given the unavoidable uncertainty in the schedule.

- USEPA will review the Remedial Study Report (Revision 1).

- USEPA will return comments to the Remedial Study Report (Revision 1), Ramboll will revise the Remedial Study Report (Revision 1) as necessary, and USEPA will approve the Remedial Study Report (Revision 1) and the preferred corrective measure.
- ArcelorMittal will draft and submit to USEPA a Corrective Measures Implementation Work Plan (CMIWP[4]), which may consist of the following sections/elements: Conceptual Designs; O&M Plan; Long-term Monitoring Plan; Intermediate Plans and Specifications; Final Plans and Specifications; Construction Workplan; Construction Completion Report; Corrective Measure Completion Report; Health and Safety Plan; Progress Reports; and a Proposed Schedule.
- USEPA will return comments on the CMIWP, ArcelorMittal will revise that deliverable, and USEPA will approve it, and commencement of the work.
- ArcelorMittal will execute the remedy design and remedy implementation.

9. LIMITATIONS

This Remedial Study Report (Revision 1) has been prepared for the exclusive use of ArcelorMittal for submittal to the USEPA. The Remedial Study Report (Revision 1) has been prepared in conformance with generally accepted standards of practice in the fields of environmental sciences and engineering at the time the services were rendered. Ramboll makes no other warranty or representation, either express or implied, with respect to its services. The Remedial Study Report (Revision 1) was developed based in part on information/data provided by our client and/or other third parties and conditions identified as of the date of this Remedial Study Report (Revision 1). Ramboll assumes that such provided information is accurate.

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[4] The overall scope of the CMIWP will be determined based upon USEPA's requests, and the scope is intended to be flexible and capable of addressing simple and complex site conditions. If ArcelorMittal can demonstrate, to the satisfaction of USEPA, that a plan and/or report or portions thereof are not needed to support implementation of the corrective measure, USEPA can waive any of those requirements.

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TABLES

Table 2-1
Measured Groundwater Elevations

Well ID	MW-801D		MW-801S		MW-802S		MW-803D		MW-803M		MW-803S	
Ground Surface Elevation (ft msl)	589.7		589.6		590.1		590.9		591.6		590.9	
Top of PVC Casing Elevation (ft)	592.48		592.24		592.66		593.26		593.52		593.48	
Well Depth (Feet from TOC)[A]	42.32		15.91		16.50		43.16		31.30		19.03	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	8.45	584.03	8.15	584.09	9.27	583.39	10.71	582.55	NI	--	10.85	582.63
6/13/05	8.47	584.01	8.20	584.04	NM	--	NM	--	NI	--	NM	--
7/ 11-13 / 05	8.89	583.59	8.65	583.59	10.25	582.41	11.03	582.23	NI	--	11.11	582.37
8/1/05	8.64	583.84	8.40	583.84	10.19	582.47	11.09	582.17	NI	--	11.16	582.32
9/14/05	9.27	583.21	9.03	583.21	10.71	581.95	11.46	581.80	NI	--	11.54	581.94
12/29/05	8.66	583.82	8.39	583.85	10.54	582.12	11.42	581.84	NI	--	11.51	581.97
1/ 18-20 / 06	8.23	584.25	7.95	584.29	10.04	582.62	11.02	582.24	NI	--	11.11	582.37
6/ 14-16 / 06	7.65	584.83	7.35	584.89	9.03	583.63	10.24	583.02	NI	--	10.29	583.19
5/1/07	6.81	585.67	6.44	585.8	7.78	584.88	8.88	584.38	NI	--	8.91	584.57
7/18-20/07	8.43	584.05	8.19	584.05	9.7	582.96	10.53	582.73	NI	--	10.64	582.84
9/24/07	7.9	584.58	7.63	584.61	8.87	583.79	10.11	583.15	NI	--	10.07	583.41
7/1/08	7.23	585.25	6.93	585.31	8.32	584.34	9.48	583.78	NI	--	9.54	583.94
9/1/08	8.13	584.35	7.85	584.39	9.11	583.55	10.11	583.15	NI	--	10.22	583.26
2/6/09	NM	--	8.16	584.08	9.36	583.30	10.36	582.90	NI	--	10.46	583.02
8/6/12	8.84	583.64	8.31	583.93	9.73	582.93	11.37	581.89	NI	--	11.42	582.06
10/29/12	8.32	584.16	8.11	584.13	10.11	582.55	12.25	581.01	12.48	581.04	12.15	581.33
7/15/13	7.42	585.06	7.19	585.05	8.14	584.52	10.03	583.23	10.31	583.21	10.08	583.40
9/7/17	7.90	584.58	7.61	584.63	NM	NM	9.49	583.77	9.84	583.68	9.59	583.89

Notes:

ft msl = Elevation referenced to feet above mean sea level using the National Geodetic Vertical Datum of 1929 (NGVD29)

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-804S		MW-805D		MW-805S		MW-806D		MW-806S		MW-807D	
Ground Surface Elevation (ft msl)	590.2		590.4		590.2		591.7		591.6		590.8	
Top of PVC Casing Elevation (ft)	592.70		593.28		592.87		594.18		594.27		593.29	
Well Depth (Feet from TOC)[A]	16.50		42.25		16.40		43.45		16.50		41.35	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	8.35	584.35	10.31	582.97	10.35	582.52	NI	--	NI	--	NI	--
6/13/05	NM	--	NM	--	NM	--	NI	--	NI	--	NI	--
7/ 11-13 / 05	8.86	583.84	8.81	584.47	8.41	584.46	NI	--	NI	--	NI	--
8/1/05	NM	--	8.57	584.71	8.22	584.65	NI	--	NI	--	NI	--
9/14/05	9.31	583.39	9.30	583.98	8.92	583.95	NI	--	NI	--	NI	--
12/29/05	9.00	583.70	8.88	584.40	8.19	584.68	12.32	581.86	12.34	581.93	11.00	582.29
1/ 18-20 / 06	10.04	582.66	8.17	585.11	7.79	585.08	11.95	582.23	11.95	582.32	10.55	582.74
6/ 14-16 / 06	7.85	584.85	7.55	585.73	7.09	585.78	11.31	582.87	11.32	582.95	9.67	583.62
5/1/07	6.21	586.49	6.37	586.91	5.79	587.08	9.89	584.29	9.89	584.38	8.12	585.17
7/18-20/07	8.21	584.49	8.30	584.98	7.90	584.97	11.48	582.70	11.49	582.78	10.15	583.14
9/24/07	7.61	585.09	7.71	585.57	7.27	585.60	11.02	583.16	11.03	583.24	9.44	583.85
7/1/08	7.19	585.51	7.15	586.13	6.69	586.18	10.48	583.70	10.6	583.67	8.86	584.43
9/1/08	7.90	584.80	7.98	585.30	7.52	585.35	11.17	583.01	11.2	583.07	9.66	583.63
2/6/09	7.88	584.82	8.27	585.01	7.70	585.17	11.36	582.82	11.42	582.85	9.84	583.45
8/6/12	8.9	583.80	8.81	584.47	8.35	584.52	NM	---	12.25	582.02	10.52	582.77
10/29/12	9.16	583.54	8.6	584.68	8.24	584.63	12.79	581.39	12.89	581.38	11.05	582.24
7/15/13	7.02	585.68	7.01	586.27	6.63	586.24	10.92	583.26	11.02	583.25	8.98	584.31
9/7/17	7.41	585.29	7.99	585.29	7.57	585.30	10.58	583.60	10.59	583.68	9.09	584.20

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-807S		MW-808D		MW-808S		MW-809D		MW-809M		MW-809S	
Ground Surface Elevation (ft msl)	590.6		591.8		592.1		591.44		591.20		591.30	
Top of PVC Casing Elevation (ft)	593.34		594.29		594.69		594.29		593.49		594.34	
Well Depth (Feet from TOC)[A]	20.04		42.61		19.33		41.60		31.51		19.43	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/13/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/ 11-13 / 05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
8/1/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/14/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
12/29/05	11.00	582.34	13.51	580.78	13.67	581.02	NI	--	NI	--	NI	--
1/ 18-20 / 06	10.53	582.81	13.10	581.19	13.23	581.46	NI	--	NI	--	NI	--
6/ 14-16 / 06	9.63	583.71	12.20	582.09	12.34	582.35	NI	--	NI	--	NI	--
5/1/07	8.05	585.29	11.03	583.26	10.96	583.73	NI	--	NI	--	NI	--
7/18-20/07	10.12	583.22	12.66	581.63	12.89	581.80	13.7	580.59	NI	--	13.81	580.53
9/24/07	9.4	583.94	12.19	582.10	12.34	582.35	13.86	580.43	NI	--	14.00	580.34
7/1/08	8.83	584.51	11.44	582.85	11.57	583.12	12.96	581.33	NI	--	13.17	581.17
9/1/08	9.62	583.72	12.08	582.21	12.3	582.39	13.21	581.08	NI	--	13.36	580.98
2/6/09	9.81	583.53	12.47	581.82	12.71	581.98	13.95	580.34	NI	--	14.09	580.25
8/6/12	10.47	582.87	12.93	581.36	13.18	581.51	14.09	580.20	NI	--	14.18	580.16
10/29/12	11	582.34	13.50	580.79	13.7	580.99	14.63	579.66	14.63	578.86	14.72	579.62
7/15/13	8.95	584.39	11.67	582.62	11.83	582.86	13.24	581.05	13.24	580.25	13.39	580.95
9/7/17	8.89	584.45	11.00	583.29	11.26	583.43	11.58	582.71	11.49	582.00	11.61	582.73

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-810D		MW-810S		MW-811S		MW-812S		MW-813S		MW-814S	
Ground Surface Elevation (ft msl)	591.62		591.69		589.59		591.40		591.75		591.64	
Top of PVC Casing Elevation (ft)	594.53		594.50		592.37		594.37		594.73		594.55	
Well Depth (Feet from TOC)[A]	42.04		20.30		16.57		18.74		17.31		17.06	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/13/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/ 11-13 / 05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
8/1/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/14/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
12/29/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
1/ 18-20 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/ 14-16 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
5/1/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/18-20/07	14.15	580.38	14.08	580.42	11.23	581.14	13.69	580.68	12.18	582.55	10.83	583.72
9/24/07	14.47	580.06	14.38	580.12	11.03	581.34	13.65	580.72	11.63	583.10	10.06	584.49
7/1/08	13.55	580.98	13.44	581.06	10.24	582.13	12.74	581.63	10.89	583.84	9.55	585.00
9/1/08	13.77	580.76	13.65	580.85	10.64	581.73	13.07	581.30	11.57	583.16	10.29	584.26
2/6/09	14.41	580.12	14.37	580.13	11.08	581.29	13.77	580.60	11.95	582.78	10.51	584.04
8/6/12	14.48	580.05	14.44	580.06	11.18	581.19	13.91	580.46	12.26	582.47	10.83	583.72
10/29/12	14.5	580.03	14.45	580.05	11.51	580.86	13.97	580.40	12.56	582.17	11.21	583.34
7/15/13	13.69	580.84	13.69	580.81	10.15	582.22	12.98	581.39	10.91	583.82	9.26	585.29
9/7/17	11.81	582.72	11.80	582.70	8.41	583.96	11.42	582.95	10.58	584.15	9.62	584.93

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-815D		MW-815S		MW-816D		MW-816S		MW-817D		MW-817S	
Ground Surface Elevation (ft msl)	590.80		590.69		591.08		590.99		589.33		589.45	
Top of PVC Casing Elevation (ft)	593.93		593.62		594.20		594.21		592.40		592.21	
Well Depth (Feet from TOC)[A]	41.80		16.76		44.14		17.41		39.78		16.98	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/13/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/ 11-13 / 05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
8/1/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/14/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
12/29/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
1/ 18-20 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/ 14-16 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
5/1/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/18-20/07	9.21	584.72	8.83	584.79	9.73	584.47	9.75	584.46	8.27	584.13	8.40	583.81
9/24/07	8.56	585.37	8.21	585.41	8.88	585.32	8.91	585.30	8.29	584.11	7.65	584.56
7/1/08	8.16	585.77	7.81	585.81	8.32	585.88	8.33	585.88	7.7	584.70	7.43	584.78
9/1/08	8.83	585.10	8.48	585.14	9.15	585.05	9.18	585.03	8.38	584.02	7.71	584.50
2/6/09	8.88	585.05	8.53	585.09	9.28	584.92	9.31	584.90	8.7	583.70	8.05	584.16
8/6/12	9.84	584.09	11.58	582.04	10.03	584.17	10.38	583.83	9.52	582.88	8.88	583.33
10/29/12	10.23	583.70	11.99	581.63	10.29	583.91	10.67	583.54	10.36	582.04	9.85	582.36
7/15/13	8.1	585.83	9.82	583.80	8.26	585.94	8.59	585.62	8.22	584.18	7.29	584.92
9/7/17	8.34	585.59	9.45	584.17	8.79	585.41	9.13	585.08	7.75	584.65	6.94	585.27

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-818S		MW-819D		MW-819S		MW-820S				MW-821D	
Ground Surface Elevation (ft msl)	591.39		589.44		589.50		594.10				589.80	
Top of PVC Casing Elevation (ft)	594.29		591.88		592.03		596.41				592.31	
Well Depth (Feet from TOC)[A]	17.08		43.36		15.00		15.00				45.77	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to LNAPL from TOC (ft)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	LNAPL Thicknes s (ft)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	NI	--	NI	--	NI	--	NI	NI	--	--	NI	--
6/13/05	NI	--	NI	--	NI	--	NI	NI	--	--	NI	--
7/ 11-13 / 05	NI	--	NI	--	NI	--	NI	NI	--	--	NI	--
8/1/05	NI	--	NI	--	NI	--	NI	NI	--	--	NI	--
9/14/05	NI	--	NI	--	NI	--	NI	NI	--	--	NI	--
12/29/05	NI	--	NI	--	NI	--	NI	NI	--	--	NI	--
1/ 18-20 / 06	NI	--	NI	--	NI	--	NI	NI	--	--	NI	--
6/ 14-16 / 06	NI	--	NI	--	NI	--	NI	NI	--	--	NI	--
5/1/07	NI	--	NI	--	NI	--	NI	NI	--	--	NI	--
7/18-20/07	11.57	582.72	NI	--	NI	--	NI	NI	--	--	NI	--
9/24/07	11.12	583.17	NI	--	NI	--	NI	NI	--	--	NI	--
7/1/08	10.38	583.91	6.22	585.66	6.36	585.67	None	6.99	589.42	0.00	6.76	585.55
9/1/08	11.00	583.29	7.06	584.82	7.20	584.83	7.81	7.85	588.56	0.04	7.50	584.81
2/6/09	11.28	583.01	7.22	584.66	7.39	584.64	7.91	8.12	588.29	0.21	7.69	584.62
8/6/12	11.90	582.39	7.97	583.91	8.09	583.94	8.60	9.82	586.59	1.22	8.59	583.72
10/29/12	12.46	581.83	7.98	583.90	8.15	583.88	8.68	10.11	586.30	1.43	8.71	583.60
7/15/13	10.59	583.70	6.19	585.69	6.30	585.73	6.77	8.05	588.36	1.28	6.79	585.52
9/7/17	10.03	584.26	7.14	584.74	7.32	584.71	7.85	9.05	587.36	1.20	7.68	584.63

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-821S				MW-822D		MW- 822S		MW-823D		MW-823S	
Ground Surface Elevation (ft msl)	589.90				590.2		590.2		590.6		590.6	
Top of PVC Casing Elevation (ft)	592.15				592.56		592.59		593.03		593.15	
Well Depth (Feet from TOC)[A]	17.65				40.71		17.82		43.73		17.65	
Date	Depth to LNAPL from TOC (ft)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	LNAPL Thicknes s (ft)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
6/13/05	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
7/ 11-13 / 05	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
8/1/05	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
9/14/05	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
12/29/05	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
1/ 18-20 / 06	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
6/ 14-16 / 06	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
5/1/07	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
7/18-20/07	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
9/24/07	NI	NI	--	--	NI	--	NI	--	NI	--	NI	--
7/1/08	6.58	6.76	585.39	0.18	NI	--	NI	--	NI	--	NI	--
9/1/08	7.35	7.46	584.69	0.11	NI	--	NI	--	NI	--	NI	--
2/6/09	7.54	7.66	584.49	0.12	NI	--	NI	--	NI	--	NI	--
8/6/12	8.34	9.22	582.93	0.88	NI	--	NI	--	NI	--	NI	--
10/29/12	8.47	9.12	583.03	0.65	7.91	584.65	7.96	584.63	9.49	583.54	9.50	583.65
7/15/13	6.26	8.73	583.42	2.47	6.59	585.97	6.61	585.98	7.24	585.79	7.35	585.80
9/7/17	7.35	9.05	583.10	1.70	7.46	585.10	7.49	585.10	7.91	585.12	8.02	585.13

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-824D		MW-824S		MW-825S		MW-826M		MW-826S		MW-827S	
Ground Surface Elevation (ft msl)	590.9		590.9		591.9		590.8		590.9		591.2	
Top of PVC Casing Elevation (ft)	593.06		593.33		594.25		592.97		593.43		593.67	
Well Depth (Feet from TOC)[A]	40.49		18.1		15.84		31.51		20.88		20.72	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/13/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/ 11-13 / 05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
8/1/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/14/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
12/29/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
1/ 18-20 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/ 14-16 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
5/1/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/18-20/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/24/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/1/08	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/1/08	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
2/6/09	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
8/6/12	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
10/29/12	9.11	583.95	9.39	583.94	6.66	587.59	15.30	577.67	15.74	577.69	14.52	579.15
7/15/13	7.18	585.88	7.53	585.80	6.00	588.25	14.01	578.96	14.65	578.78	13.81	579.86
9/7/17	7.99	585.07	8.36	584.97	7.33	586.92	11.59	581.38	12.18	581.25	12.06	581.61

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-828S		MW-829S		MW-830S		MW-831S		MW-832D		MW-832S	
Ground Surface Elevation (ft msl)	589.9		589.9		590.1		591.8		590.9		590.9	
Top of PVC Casing Elevation (ft)	591.99		592.00		592.20		593.78		593.42		593.39	
Well Depth (Feet from TOC)[A]	576.90		577.00		577.30		578.95		551.90		578.00	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/13/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/ 11-13 / 05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
8/1/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/14/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
12/29/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
1/ 18-20 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/ 14-16 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
5/1/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/18-20/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/24/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/1/08	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/1/08	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
2/6/09	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
8/6/12	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
10/29/12	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/15/13	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/7/17	7.09	584.90	7.22	584.78	7.28	584.92	8.62	585.16	8.12	585.30	8.08	585.31

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-833S		MW-834D		MW-835D		MW-836S		MW-837S		MW-838S	
Ground Surface Elevation (ft msl)	592.1		589.9		590.0		591.2		592.7		591.5	
Top of PVC Casing Elevation (ft)	594.27		591.80		593.77		593.99		595.55		593.64	
Well Depth (Feet from TOC)[A]	579.20		551.90		551.50		578.20		579.70		578.65	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/13/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/ 11-13 / 05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
8/1/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/14/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
12/29/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
1/ 18-20 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/ 14-16 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
5/1/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/18-20/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/24/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/1/08	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/1/08	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
2/6/09	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
8/6/12	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
10/29/12	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/15/13	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/7/17	9.12	585.15	7.06	584.74	8.83	584.94	9.72	584.27	11.58	583.97	8.76	584.88

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-839S		PZ-890		PZ-891		MW-893		MW-894		MW-895	
Ground Surface Elevation (ft msl)	590.2		590.44		589.92		590.70		590.60		591.00	
Top of PVC Casing Elevation (ft)	592.31		593.38		592.82		592.86		592.31		593.01	
Well Depth (Feet from TOC)[A]	577.30		16.82		16.72		26.00		18.00		18.00	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/13/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/ 11-13 / 05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
8/1/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
9/14/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
12/29/05	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
1/ 18-20 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
6/ 14-16 / 06	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
5/1/07	NI	--	NI	--	NI	--	NI	--	NI	--	NI	--
7/18-20/07	NI	--	NM	--	NM	--	NI	--	NI	--	NI	--
9/24/07	NI	--	9.17	583.14	9.08	583.07	NI	--	NI	--	NI	--
7/1/08	NI	--	--	--	--	--	11.78	580.53	11.14	581.01	12.04	580.27
9/1/08	NI	--	9.39	582.92	9.25	582.90	12.28	580.03	11.67	580.48	12.52	579.79
2/6/09	NI	--	9.64	582.67	9.41	582.74	12.85	579.46	12.25	579.90	13.11	579.20
8/6/12	NI	--	NM	--	NM	--	NM	--	NM	--	NM	--
10/29/12	NI	--	NM	--	NM	--	NM	--	NM	--	NM	--
7/15/13	NI	--	NM	--	NM	--	NM	--	NM	--	NM	--
9/7/17	7.74	584.57	NM	--	NM	--	NM	--	NM	--	NM	--

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-1
Measured Groundwater Elevations

Well ID	MW-896	
Ground Surface Elevation (ft msl)	591.40	
Top of PVC Casing Elevation (ft)	593.27	
Well Depth (Feet from TOC)[A]	18.00	
Date	Depth to GW from TOC (ft)	GW Elevation (ft msl)
6/2/05	NI	--
6/13/05	NI	--
7/ 11-13 / 05	NI	--
8/1/05	NI	--
9/14/05	NI	--
12/29/05	NI	--
1/ 18-20 / 06	NI	--
6/ 14-16 / 06	NI	--
5/1/07	NI	--
7/18-20/07	NI	--
9/24/07	NI	--
7/1/08	12.44	579.71
9/1/08	12.89	579.26
2/6/09	13.48	578.67
8/6/12	NM	--
10/29/12	NM	--
7/15/13	NM	--
9/7/17	NM	--

Notes:

ft msl = Elevation referenced to feet ab

TOC = Top of PVC Casing

ft = feet

[A] = as measured inside well

NM = Not Measured

NI = Not Installed

-- No Elevation

Table 2-2
Estimated Horizontal and Vertical Hydraulic Gradients
Horizontal Gradients

Wells		Date	Results			Calculation Data				
From Well (# 1)	To Well (# 2)		Horizontal Gradient	Linear Velocity[A] (feet/year)	Hydrogeologic Unit	Hydraulic Conductivity (cm/sec)[B]	Distance between wells (feet)	GW Elevation Well #1 (msl)	GW Elevation Well #2 (msl)	Effective Porosity[C]
MW-804S	MW-803S	9/24/2007	0.0021	220	Calumet	2.48E-02	787.5	585.09	583.41	0.25
MW-804S	MW-803S	9/1/2008	0.0020	200				584.80	583.26	
MW-804S	MW-803S	2/6/2009	0.0023	230				584.82	583.02	
MW-804S	MW-803S	10/29/2012	0.0028	290				583.54	581.33	
MW-804S	MW-803S	7/15/2013	0.0029	300				585.68	583.40	
MW-804S	MW-803S	9/7/2017	0.0018	180				585.29	583.89	
			Average	**240**						
MW-805S	MW-802S	9/24/2007	0.0017	170	Calumet	2.48E-02	1062.5	585.60	583.79	0.25
MW-805S	MW-802S	9/1/2008	0.0017	170				585.35	583.55	
MW-805S	MW-802S	2/6/2009	0.0018	180				585.17	583.30	
MW-805S	MW-802S	10/29/2012	0.0020	200				584.63	582.55	
MW-805S	MW-802S	7/15/2013	0.0016	170				586.24	584.52	
MW-805S	MW-802S	9/7/2017	--	--				585.30	NM	
			Average	**180**						
MW-804S	MW-809S	9/24/2007	0.0044	960	Calumet	5.34E-02	1090	585.09	580.34	0.25
MW-804S	MW-809S	9/1/2008	0.0035	770				584.80	580.98	
MW-804S	MW-809S	2/6/2009	0.0042	930				584.82	580.25	
MW-804S	MW-809S	10/29/2012	0.0036	790				583.54	579.62	
MW-804S	MW-809S	7/15/2013	0.0043	960				585.68	580.95	
MW-804S	MW-809S	9/7/2017	0.0023	520				585.29	582.73	
			Average	**820**						
MW-802S	MW-812S	9/24/2007	0.0060	1200	Calumet/Slag-fil	4.64E-02	510	583.79	580.72	0.25
MW-802S	MW-812S	9/1/2008	0.0044	850				583.55	581.30	
MW-802S	MW-812S	2/6/2009	0.0053	1000				583.30	580.60	
MW-802S	MW-812S	10/29/2012	0.0042	810				582.55	580.40	
MW-802S	MW-812S	7/15/2013	0.0061	1200				584.52	581.39	
MW-802S	MW-812S	9/7/2017	--	--				NM	582.95	
			Average	**1000**						
MW-812S	MW-810S	9/24/2007	0.0048	3800	Slag-fill	1.92E-01	125	580.72	580.12	0.25
MW-812S	MW-810S	9/1/2008	0.0036	2900				581.30	580.85	
MW-812S	MW-810S	2/6/2009	0.0038	3000				580.60	580.13	
MW-812S	MW-810S	10/29/2012	0.0028	2200				580.40	580.05	
MW-812S	MW-810S	7/15/2013	0.0046	3700				581.39	580.81	
MW-812S	MW-810S	9/7/2017	0.0020	1600				582.95	582.70	
			Average	**2900**						
MW-808S	MW-809S	9/24/2007	0.0118	1300	Calumet	2.70E-02	170	582.35	580.34	0.25
MW-808S	MW-809S	9/1/2008	0.0083	930				582.39	580.98	
MW-808S	MW-809S	2/6/2009	0.0102	1100				581.98	580.25	
MW-808S	MW-809S	10/29/2012	0.0081	900				580.99	579.62	
MW-808S	MW-809S	7/15/2013	0.0112	1300				582.86	580.95	
MW-808S	MW-809S	9/7/2017	0.0041	500				583.43	582.73	
			Average	**1000**						
MW-813S	MW-809S	9/24/2007	0.0125	3500	Calumet	6.73E-02	220	583.10	580.34	0.25
MW-813S	MW-809S	9/1/2008	0.0099	2800				583.16	580.98	
MW-813S	MW-809S	2/6/2009	0.0115	3200				582.78	580.25	
MW-813S	MW-809S	10/29/2012	0.0116	3200				582.17	579.62	
MW-813S	MW-809S	7/15/2013	0.0130	3600				583.82	580.95	
MW-813S	MW-809S	9/7/2017	0.0065	1800				584.15	582.73	
			Average	**3000**						
MW-815S	MW-817S	9/24/2007	0.0015	110	Calumet	1.72E-02	560	585.41	584.56	0.25
MW-815S	MW-817S	9/1/2008	0.0011	80				585.14	584.50	
MW-815S	MW-817S	2/6/2009	0.0017	120				585.09	584.16	
MW-815S	MW-817S	10/29/2012	0.0013	90				581.63	582.36	
MW-815S	MW-817S	7/15/2013	0.0020	140				583.80	584.92	
MW-815S	MW-817S	9/7/2017	0.0020	140				584.17	585.27	
			Average	**110**						
MW-815D	MW-817D	9/24/2007	0.0022	30	Calumet	4.67E-03	560	585.37	584.11	0.35
MW-815D	MW-817D	9/1/2008	0.0019	30				585.10	584.02	
MW-815D	MW-817D	2/6/2009	0.0024	30				585.05	583.70	
MW-815D	MW-817D	10/29/2012	0.0030	40				583.70	582.04	
MW-815D	MW-817D	7/15/2013	0.0029	40				585.83	584.18	
MW-815D	MW-817D	9/7/2017	0.0017	20				585.59	584.65	
			Average	**30**						

Table 2-2
Estimated Horizontal and Vertical Hydraulic Gradients
Horizontal Gradients

Wells		Date	Results			Calculation Data				
From Well (# 1)	To Well (# 2)		Horizontal Gradient	Linear Velocity[A] (feet/year)	Hydrogeologic Unit	Hydraulic Conductivity (cm/sec)[B]	Distance between wells (feet)	GW Elevation Well #1 (msl)	GW Elevation Well #2 (msl)	Effective Porosity[C]
MW-816D	MW-809D	9/24/2007	0.0074	130	Calumet	5.97E-03	665	585.32	580.43	0.35
MW-816D	MW-809D	9/1/2008	0.0060	110				585.05	581.08	
MW-816D	MW-809D	2/6/2009	0.0069	120				584.92	580.34	
MW-816D	MW-809D	10/29/2012	0.0064	110				583.91	579.66	
MW-816D	MW-809D	7/15/2013	0.0074	130				585.94	581.05	
MW-816D	MW-809D	9/7/2017	0.0041	70				585.41	582.71	
			Average	**110**						
MW-816D	MW-810D	9/24/2007	0.0067	1400	Calumet	7.15E-02	790	585.32	580.06	0.35
MW-816D	MW-810D	9/1/2008	0.0054	1100				585.05	580.76	
MW-816D	MW-810D	2/6/2009	0.0061	1300				584.92	580.12	
MW-816D	MW-810D	10/29/2012	0.0049	1000				583.91	580.03	
MW-816D	MW-810D	7/15/2013	0.0065	1400				585.94	580.84	
MW-816D	MW-810D	9/7/2017	0.0034	700				585.41	582.72	
			Average	**1200**						

Notes:

[A] Linear velocity represents the average rate at which water moves between two points: $V=Ki/n_e$, where V= linear velocity (ft/yr), K=hydraulic conductivity (cm/sec), i=gradient, and n_e=effective porosity. Estimated arithmetic mean groundwater flow rates are identified in bold font and rounded to two significant figures.

[B] Hydraulic conductivity values listed are the geometric mean of the hydraulic conductivity test results provided in the July 2008 "Supplemental Site Investigation Report" for the

[C] Effective porosity values estimated from soil textures listed in *Groundwater* by Freeze and Cherry (1979)

NM = Not Measured

TABLE 2-3
LNAPL Sample Laboratory Results

Parameters	CAS #	MW-821S-FP- (07/18/13)	MW-820S-FP- (07/18/13)
VOCs (mg/kg)			
Acetone	67-64-1	0.22 [J]	<0.20
Acrolein	107-02-8	<0.50	<0.51
Acrylonitrile	107-13-1	<0.82	<0.83
Benzene	71-43-2	270	24
Bromoform	75-25-2	<0.034	<0.035
Carbon tetrachloride	56-23-5	<0.034	<0.035
Chlorobenzene	108-90-7	0.12 [J]	0.2 [J]
Chlorodibromomethane	124-48-1	<0.024	<0.025
Chloroethane	75-00-3	<0.11	<0.11
Chloroform	67-66-3	<0.054	<0.054
Dichlorobromomethane[C]	75-27-4	<0.054	<0.054
1,1-Dichloroethane	75-34-3	<0.049	<0.050
1,2-Dichloroethane	107-06-2	<0.049	<0.050
1,1-Dichloroethylene	75-35-4	<0.044	<0.045
1,2-Dichloropropane	78-87-5	<0.054	<0.054
Ethylbenzene	100-41-4	17	130
Methyl Bromide (Bromomethane)	74-83-9	<0.088	<0.089
Methyl Chloride (Chloromethane)	74-87-3	<0.078	<0.079
Methylene chloride	75-09-2	<0.068	0.19
1,1,2,2-Tetrachloroethane	79-34-5	<0.078	<0.079
Tetrachloroethylene	127-18-4	<0.054	<0.054
Toluene	108-88-3	120	1
trans-1,2-Dichloroethylene	156-60-5	<0.034	<0.035
1,1,1-Trichloroethane	71-55-6	<0.044	<0.045
Trichlorofluoromethane	75-69-4	<0.083	<0.084
Vinyl chloride	75-01-4	<0.12	<0.12
Xylenes, Total	1330-20-7T	120	190
PAHs (mg/kg)			
Acenaphthene	83-32-9	1100	2300
Acenaphthylene	208-96-8	<7.0	<18
Anthracene	120-12-7	290	<16
Benzo(a)anthracene	56-55-3	130	<21
Benzo(a)pyrene	50-32-8	<9.0	<21
Benzo(b)fluoranthene	205-99-2	130	<25
Benzo(g,h,i)perylene	191-24-2	<10	<22
Benzo(k)fluoranthene	207-08-9	<22	<25
Chrysene	218-01-9	280	630
Dibenzo(a,h)anthracene	53-70-3	<9.0	<21
Fluoranthene	206-44-0	430	1100
Fluorene	86-73-7	710	1300
Indeno (1,2,3-c,d) pyrene	193-39-5	45	<21
Naphthalene	91-20-3	250	27000
Phenanthrene	85-01-8	860	1500
Pyrene	129-00-0	450	1100

TABLE 2-3
LNAPL Sample Laboratory Results

Parameters	CAS #	MW-821S-FP- (07/18/13)	MW-820S-FP- (07/18/13)
SVOCs (mg/kg)			
1,2,4-Trichlorobenzene	120-82-1	<9.0	<90
1,2-Dichlorobenzene	95-50-1	<7.0	<70
1,2-Diphenylhydrazine	122-66-7	<10	<100
1,4-Dichlorobenzene	106-46-7	<9.0	<90
2,4,6-Trichlorophenol	88-06-2	<9.0	<90
2,4-Dichlorophenol	120-83-2	<7.0	<70
2,4-Dimethylphenol	105-67-9	<8.0	<80
2,4-Dinitrophenol	51-28-5	<94	<940
2,4-Dinitrotoluene	121-14-2	<8.0	<80
2,6-Dinitrotoluene	606-20-2	<11	<110
2-Chloronaphthalene	91-58-7	<9.0	<90
2-Chlorophenol	95-57-8	<7.0	<70
2-Methylnaphthalene	91-57-6	180 [J]	2400 [J]
2-Nitrophenol (o-Nitrophenol)	88-75-5	<10	<100
3,3-Dichlorobenzidine	91-94-1	<7.0	<70
4,6-Dinitro-o-cresol	534-52-1	<11	<110
4-Bromophenyl phenyl ether	101-55-3	<9.0	<90
4-Chlorophenyl phenyl ether	7005-72-3	<9.0	<90
4-Nitrophenol (p-Nitrophenol)	100-02-7	<43	<430
Benzidine	92-87-5	<360	<3600
bis(2-Chloroethoxy)methane[D]	111-91-1	<10	<100
bis(2-Chloroethyl)ether[E]	111-44-4	<9.0	<90
bis(2-Ethylhexyl)phthalate	117-81-7	47 [J]	<110
Butylbenzylphthalate	85-68-7	<10	<100
Dibenzofuran	132-64-9	360 [J]	860 [J]
Diethylphthalate	84-66-2	<11	<110
Dimethylphthalate	131-11-3	<9.0	<90
Di-n-butylphthalate	84-74-2	<12	<120
Di-n-octylphthalate	117-84-0	<11	<110
Hexachlorobenzene	118-74-1	<9.0	<90
Hexachlorobutadiene	87-68-3	<9.0	<90
Hexachlorocyclopentadiene	77-47-4	<6.0	<60
Hexachloroethane	67-72-1	<9.0	<90
Isophorone	78-59-1	<10	<100
Nitrobenzene	98-95-3	<10	<100
N-Nitrosodimethylamine	62-75-9	<7.0	<70
N-Nitroso-di-n-propylamine	621-64-7	<10	<100
N-Nitrosodiphenylamine	86-30-6	<7.0	<70
p-Chloro-m-cresol	59-50-7	<12	<120
Pentachlorophenol	87-86-5	<13	<130
Phenol	108-95-2	<4.0	<40
Total Cresol	1319-77-3T	<7.0	<70
Kinematic Viscosity @ 77 degrees F (cSt)			
Viscosity		15.34	15.39
Density (g/mL)			
Bulk Density		0.90	0.90

Notes:

[J] Estimated concentration between the method detection limit and reporting limit
mg/kg = milligrams per kilogram
cSt = centistokes (at 25°C)
g/mL = grams per milliliter
[C]IDEM = Bromodichloromethane
[D] Listed by EPA as Methane [bis (2-chloroethoxy)]
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)]

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-801D 10/29/2012	MW-801D Dup 10/29/2012	MW-801D 7/16/2013	MW-801D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-801S 10/29/2012	MW-801S 7/16/2013	MW 9/13
VOCs (mg/L)																	
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.0017	< 0.002	< 0.0021	0%				< 0.0017	< 0.002	< 0.0021
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.0019	< 0.002	< 0.0033	0%				< 0.0019	< 0.002	< 0.0033
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	< 0.00017	< 0.00017	< 0.00008	< 0.00018	0%				**0.015** A(MCL)	**0.018** A(MCL)	**0.014**
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.0050	< 0.005	0%				< 0.0050	< 0.0050	< 0.005
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00031	< 0.00013	< 0.00027	0%				< 0.00031	< 0.00013	< 0.00027
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00018	< 0.00012	< 0.00016	0%				< 0.00018	< 0.00012	< 0.00016
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00020	< 0.00012	< 0.00016	0%				< 0.00020	< 0.00012	< 0.00016
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00025	< 0.00013	< 0.00041	0%				< 0.00025	< 0.00013	< 0.00041
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00027	< 0.00011	< 0.00038	0%				< 0.00027	< 0.00011	< 0.00038
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00021	< 0.00008	< 0.00021	0%				< 0.00021	< 0.00008	< 0.00021
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00019	< 0.00080	< 0.00022	0%				< 0.00019	< 0.00080	< 0.00022
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00020	< 0.00007	< 0.0003	0%				< 0.00020	< 0.00007	< 0.0003
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00024	< 0.00017	< 0.00018	0%				< 0.00024	< 0.00017	< 0.00018
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00017	< 0.00017	< 0.0001	< 0.00016	0%				< 0.00017	< 0.0001	< 0.00016
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00028	< 0.00009	< 0.00014	0%				< 0.00028	< 0.00009	< 0.00014
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00016	< 0.00015	< 0.00019	0%				< 0.00016	< 0.00015	< 0.00019
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00022	< 0.00011	< 0.00015	0%				< 0.00022	< 0.00011	< 0.00015
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00018	< 0.00009	< 0.00021	0%				< 0.00018	< 0.00009	< 0.00021
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00021	< 0.00021	< 0.0001	< 0.00015	0%				0.0012	0.0014	0.00079
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00029	< 0.00027	< 0.00037	0%				< 0.00029	< 0.00027	< 0.00037
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00020	< 0.00020	< 0.00011	< 0.00033	0%				< 0.00020	< 0.00011	< 0.00033
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	< 0.00014	< 0.00027	< 0.00031	0%				< 0.00014	< 0.00027	< 0.00031
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00025	< 0.00011	< 0.0002	0%				< 0.00025	< 0.00011	< 0.0002
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00020	< 0.00006	< 0.00032	0%				< 0.00020	< 0.00006	< 0.00032
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00019	< 0.00019	< 0.0001	< 0.00015	0%				0.0032	0.0027	0.0026
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.00019	< 0.0001	< 0.00023	0%				< 0.00019	< 0.0001	< 0.00023
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00020	< 0.00009	< 0.00019	0%				< 0.00020	< 0.00009	< 0.00019
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00024	< 0.00014	< 0.0003	0%				< 0.00024	< 0.00014	< 0.0003
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.00021	< 0.0001	< 0.00017	0%				< 0.00021	< 0.0001	< 0.00017

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	-801S /2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)											
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019		0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066		0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	A(MCL)	100%	0.016	0.014	0.018
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE		0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23		0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24		0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047		0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE		0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE		0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14		0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE		0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE		0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE		0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047		0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91		0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065		0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36		0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE		0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	J	100%	0.0011	0.00079	0.0014
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016		0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	UJ	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94		0%			
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38		0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	UJ	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	J	100%	0.0028	0.0026	0.0032
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97		0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076		0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	UJ	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93		0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-802S 10/31/2012	MW-802S-Dup 10/31/2012	MW-802S 7/16/2013	% Detect	Average	Minimum Detected	Maximum Detected	MW-803D 10/31/2012	MW-803D 7/17/2013
VOCs (mg/L)															
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.0017	< 0.002	0%				< 0.0017	< 0.002
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.0019	< 0.002	0%				< 0.0019	< 0.002
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	< 0.00017	< 0.00017	**0.1** A(MCL,I,DCL)	33%	0.10000	0.1	0.1	***0.62*** A(MCL,I,DCL),B	***0.62*** A(MCL,I,DCL),B
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.0050	0%				< 0.0050	< 0.0050
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00031	< 0.00013	0%				< 0.00031	< 0.00013
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00018	< 0.00012	0%				< 0.00018	< 0.00012
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00020	< 0.00012	0%				< 0.00020	< 0.00012
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00025	< 0.00013	0%				< 0.00025	< 0.00013
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00027	< 0.00011	0%				< 0.00027	< 0.00011
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00021	< 0.00008	0%				< 0.00021	< 0.00008
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00019	< 0.00080	0%				< 0.00019	< 0.00080
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00020	< 0.00007	0%				< 0.00020	< 0.00007
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00024	< 0.00017	0%				< 0.00024	< 0.00017
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.00026 [J]	0.00025 [J]	< 0.0001	67%	0.00026	0.00025	0.00026	< 0.00017	< 0.0001
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00028	< 0.00009	0%				< 0.00028	< 0.00009
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00016	< 0.00015	0%				< 0.00016	< 0.00015
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00022	< 0.00011	0%				< 0.00022	< 0.00011
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00018	< 0.00009	0%				< 0.00018	< 0.00009
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00021	< 0.00021	< 0.0001	0%				0.00043 [J]	0.00034 [J]
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00029	< 0.00027	0%				< 0.00029	< 0.00027
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00020	< 0.00020	< 0.00011	0%				0.00031 [J]	< 0.00011
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	< 0.00014	< 0.00027	0%				< 0.00014	< 0.00027
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00025	< 0.00011	0%				< 0.00025	< 0.00011
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00020	< 0.00006	0%				< 0.00020	< 0.00006
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00019	< 0.00019	< 0.0001	0%				0.00041 [J]	0.00036 [J]
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.00019	< 0.0001	0%				< 0.00019	< 0.0001
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00020	0.00078 [J]	33%	0.00078	0.00078	0.00078	< 0.00020	< 0.00009
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00024	< 0.00014	0%				< 0.00024	< 0.00014
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.00021	< 0.0001	0%				< 0.00021	< 0.0001

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-803D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)											
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	0.052 UJ	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	0.082 UJ	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***3.3*** J A(MCL,I,DCL),B	100%	1.51	0.62	3.3
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	0.12 UJ	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	0.0068 UJ	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	0.004 UJ	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.004 UJ	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	0.01 UJ	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	0.0095 UJ	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14	0.0052 UJ	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	0.0055 UJ	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	0.0075 UJ	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	0.0045 UJ	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.004 UJ	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	0.0035 UJ	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	0.0048 UJ	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	0.0038 UJ	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	0.0052 UJ	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.0038 UJ	67%	0.00039	0.00034	0.00043
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	0.0092 UJ	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.0082 UJ	33%	0.00031	0.00031	0.00031
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.035 UJ	0%			
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	0.0050 UJ	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	0.008 UJ	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.0038 UJ	67%	0.00039	0.00036	0.00041
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	0.0058 UJ	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.0048 UJ	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	0.0075 UJ	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	0.0042 UJ	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-803M 10/31/2012	MW-803M 7/17/2013	MW-803M 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	M 10
VOCs (mg/L)														
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.02	< 0.021	0%				< 0.0017
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.02	< 0.033	0%				< 0.0019
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***6.5*** A(MCL,I,DCL),B	***5.1*** A(MCL,I,DCL),B	***0.65*** A(MCL,I,DCL),B	100%	4.083333333	0.65	6.5	***2.8***
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0500	< 0.05	0%				< 0.0050
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.0013	< 0.0027	0%				< 0.00031
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.0012	< 0.0016	0%				< 0.00018
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.00041 [J]	< 0.00120	< 0.0016	33%	0.00041	0.00041	0.00041	0.00054 [J]
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.0013	< 0.0041	0%				< 0.00025
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.0011	< 0.0038	0%				< 0.00027
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.0008	< 0.0021	0%				< 0.00021
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00800	< 0.0022	0%				< 0.00019
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00070	< 0.003	0%				< 0.00020
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.0017	< 0.0018	0%				< 0.00024
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.00029 [J]	< 0.001	< 0.0016	33%	0.00029	0.00029	0.00029	< 0.00017
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.0009	< 0.0014	0%				< 0.00028
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.0015	< 0.0019	0%				< 0.00016
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.0011	< 0.0015	0%				< 0.00022
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.0009	< 0.0021	0%				< 0.00018
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	*0.23* B	*0.28* B	*0.15* B	100%	0.22	0.15	0.28	*0.025*
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.0027	< 0.0037	0%				< 0.00029
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00023 [J]	< 0.00110	< 0.0033	33%	0.00023	0.00023	0.00023	< 0.00020
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	< 0.0027	< 0.0063 [U]	0%				< 0.00014
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.0011	< 0.002	0%				< 0.00025
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00060	< 0.0032	0%				< 0.00020
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.034	0.029	0.0064 [J]	100%	0.023133333	0.0064	0.034	0.0026
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.001	< 0.0023	0%				< 0.00019
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00090	< 0.0019	0%				< 0.00020
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.0014	< 0.003	0%				< 0.00024
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.001	< 0.0017	0%				< 0.00021

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	W-803S /31/2012	MW-803S 7/17/2013	MW-803S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)													
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019		< 0.02	< 0.021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066		< 0.02	< 0.033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	A(MCL,I,DCL),B	***2.4*** A(MCL,I,DCL),B	***5.7*** A(MCL,I,DCL),B	100%	3.633333333	2.4	5.7
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE		< 0.0500	< 0.05	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23		< 0.0013	< 0.0027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24		< 0.0012	< 0.0016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047		< 0.00120	< 0.0016	33%	0.00054	0.00054	0.00054
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE		< 0.0013	< 0.0041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE		< 0.0011	< 0.0038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14		< 0.0008	< 0.0021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE		< 0.00800	< 0.0022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE		< 0.00070	< 0.003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE		< 0.0017	< 0.0018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047		< 0.001	< 0.0016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91		< 0.0009	< 0.0014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065		< 0.0015	< 0.0019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36		< 0.0011	< 0.0015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE		< 0.0009	< 0.0021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	B	*0.018* B	0.0053 [J]	100%	0.0161	0.0053	0.025
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016		< 0.0027	< 0.0037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE		< 0.00110	< 0.0033	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94		0.0046 [J]	< 0.0072 [U]	33%	0.0046	0.0046	0.0046
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38		< 0.0011	< 0.002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045		< 0.00060	< 0.0032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253		0.012	0.014 [J]	100%	0.009533333	0.0026	0.014
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97		< 0.001	< 0.0023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076		< 0.00090	< 0.0019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE		< 0.0014	< 0.003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93		< 0.001	< 0.0017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-804S 10/29/2012	MW-804S 7/16/2013	MW-804S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-805D 10/31/2012	MW-805D 7/16/2013	MW-805D Dup 7/16/2013	MW-805D 9/12/2017	% Detect	Average
VOCs (mg/L)																			
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.002	< 0.0021	0%				< 0.0017	< 0.002	< 0.002	< 0.0021	0%	
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.002	< 0.0033	0%				< 0.0019	< 0.002	< 0.002	< 0.0033	0%	
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	0.00039 J	0.00027 J	< 0.00018	67%	0.00033	0.00027	0.00039	< 0.00017	< 0.00008	< 0.00008	< 0.0013 U	0%	
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.005	0%				< 0.0050	< 0.0050	< 0.0050	< 0.005	0%	
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00013	< 0.00027	0%				< 0.00031	< 0.00013	< 0.00013	< 0.00027	0%	
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00012	< 0.00016	0%				< 0.00018	< 0.00012	< 0.00012	< 0.00016	0%	
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00012	< 0.00016	0%				< 0.00020	< 0.00012	< 0.00012	< 0.00016	0%	
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00013	< 0.00041	0%				< 0.00025	< 0.00013	< 0.00013	< 0.00041	0%	
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00011	< 0.00038	0%				< 0.00027	< 0.00011	< 0.00011	< 0.00038	0%	
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00008	< 0.00021	0%				< 0.00021	< 0.00008	< 0.00008	< 0.00021	0%	
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00080	< 0.00022	0%				< 0.00019	< 0.00080	< 0.00080	< 0.00022	0%	
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00007	< 0.0003	0%				< 0.00020	< 0.00007	< 0.00007	< 0.0003	0%	
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00017	< 0.00018	0%				< 0.00024	< 0.00017	< 0.00017	< 0.00018	0%	
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00017	< 0.0001	< 0.00016	0%				< 0.00017	< 0.0001	< 0.0001	< 0.00016	0%	
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00009	< 0.00014	0%				< 0.00028	< 0.00009	< 0.00009	< 0.00014	0%	
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00015	< 0.00019	0%				< 0.00016	< 0.00015	< 0.00015	< 0.00019	0%	
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00011	< 0.00015	0%				< 0.00022	< 0.00011	< 0.00011	< 0.00015	0%	
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00009	< 0.00021	0%				< 0.00018	< 0.00009	< 0.00009	< 0.00021	0%	
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00021	< 0.0001	< 0.00015	0%				< 0.00021	< 0.0001	< 0.0001	0.0002 J	25%	0.0002
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00027	< 0.00037	0%				< 0.00029	< 0.00027	< 0.00027	< 0.00037	0%	
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00020	< 0.00011	< 0.00033	0%				< 0.00020	< 0.00011	< 0.00011	< 0.00033	0%	
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	< 0.00027	< 0.00031	0%				< 0.00014	< 0.00027	< 0.00027	< 0.00041 U	0%	
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00011	< 0.0002	0%				< 0.00025	< 0.00011	< 0.00011	< 0.0002	0%	
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00006	< 0.00032	0%				< 0.00020	< 0.00006	< 0.00006	< 0.00032	0%	
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00019	< 0.0001	< 0.00015	0%				< 0.00019	< 0.0001	< 0.0001	< 0.00028 U	0%	
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.0001	< 0.00023	0%				< 0.00019	< 0.0001	< 0.0001	< 0.00023	0%	
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00009	< 0.00019	0%				< 0.00020	< 0.00009	< 0.00009	< 0.00019	0%	
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00014	< 0.0003	0%				< 0.00024	< 0.00014	< 0.00014	< 0.0003	0%	
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.0001	< 0.00017	0%				< 0.00021	< 0.0001	< 0.0001	< 0.00017	0%	

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected	MW-805S 10/31/2012	MW-805S 7/17/2013	MW-805S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)															
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019			< 0.0017	< 0.002	< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066			< 0.0019	< 0.002	< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114			***1.1*** A(MCL,I,DCL),B	***0.62*** A(MCL,I,DCL),B	***13*** A(MCL,I,DCL),B	100%	4.906666667	0.62	13
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE			< 0.0050	< 0.0050	< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23			< 0.00031	< 0.00013	< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24			< 0.00018	< 0.00012	< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047			< 0.00020	< 0.00012	0.0017 [J]	33%	0.0017	0.0017	0.0017
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE			0.0011 [J]	< 0.00013	0.0019 [J]	67%	0.003	0.0011	0.0019
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE			< 0.00027	< 0.00011	< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14			< 0.00021	< 0.00008	< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE			< 0.00019	< 0.00080	< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE			< 0.00020	< 0.00007	< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE			< 0.00024	< 0.00017	< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047			< 0.00017	< 0.0001	< 0.00016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91			< 0.00028	< 0.00009	< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065			< 0.00016	< 0.00015	< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36			< 0.00022	< 0.00011	< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE			< 0.00018	< 0.00009	< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.0002	0.0002	< 0.00021	0.005	0.011	67%	0.008	0.005	0.011
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016			< 0.00029	< 0.00027	< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE			0.00031 [J]	< 0.00011	< 0.00033	33%	0.00031	0.00031	0.00031
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94			< 0.00014	< 0.00027	0.00069 [J]	33%	0.00069	0.00069	0.00069
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38			< 0.00025	< 0.00011	< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045			< 0.00020	< 0.00006	< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253			0.00028 [J]	0.0042	0.007	100%	0.003826667	0.00028	0.007
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97			< 0.00019	< 0.0001	< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076			< 0.00020	< 0.00009	< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE			< 0.00024	< 0.00014	< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93			< 0.00021	< 0.0001	< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-806D 10/31/2012	MW-806D 7/17/2013	MW-806D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-806S 10/31/2012	MW-806S 7/16/2013
VOCs (mg/L)															
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.002	< 0.0021	0%				< 0.0017	< 0.002
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.002	< 0.0033	0%				< 0.0019	< 0.002
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	**0.088** A(MCL,I,DCL)	**0.082** A(MCL,I,DCL)	**0.058** A(MCL,I,DCL)	100%	0.076	0.058	0.088	< 0.00017	< 0.00008
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.005	0%				< 0.0050	< 0.0050
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00013	< 0.00027	0%				< 0.00031	< 0.00013
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00012	< 0.00016	0%				< 0.00018	< 0.00012
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00012	< 0.00016	0%				< 0.00020	< 0.00012
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00013	< 0.00041	0%				< 0.00025	< 0.00013
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00011	< 0.00038	0%				< 0.00027	< 0.00011
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00008	< 0.00021	0%				< 0.00021	< 0.00008
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00080	< 0.00022	0%				< 0.00019	< 0.00080
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00007	< 0.0003	0%				< 0.00020	< 0.00007
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00017	< 0.00018	0%				< 0.00024	< 0.00017
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00017	< 0.0001	< 0.00016	0%				< 0.00017	< 0.0001
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00009	< 0.00014	0%				< 0.00028	< 0.00009
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00015	< 0.00019	0%				< 0.00016	< 0.00015
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00011	< 0.00015	0%				< 0.00022	< 0.00011
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00009	< 0.00021	0%				< 0.00018	< 0.00009
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00021	< 0.0001	< 0.00015	0%				< 0.00021	< 0.0001
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00027	< 0.00037	0%				< 0.00029	< 0.00027
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00020	< 0.00011	< 0.00033	0%				0.00026 [J]	< 0.00011
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	< 0.00027	< 0.00031	0%				< 0.00014	< 0.00027
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00011	< 0.0002	0%				< 0.00025	< 0.00011
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00006	< 0.00032	0%				< 0.00020	< 0.00006
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00019	< 0.0001	< 0.00015	0%				< 0.00019	< 0.0001
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.0001	< 0.00023	0%				< 0.00019	< 0.0001
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00009	< 0.00019	0%				< 0.00020	< 0.00009
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00014	< 0.0003	0%				< 0.00024	< 0.00014
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.0001	< 0.00017	0%				< 0.00021	< 0.0001

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-806S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)											
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	0.00018	0%			
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.00016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14	0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.00016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.00015	0%			
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00033	33%	0.00026	0.00026	0.00026
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.00031	0%			
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.00015	0%			
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-807D 11/1/2012	MW-807D 7/18/2013	MW-807D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-807S 11/1/2012	MW-807 7/16/201
VOCs (mg/L)															
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.017	< 0.02	< 0.1 UJ	0%				< 0.0017	< 0.002
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.019	< 0.02	< 0.16 UJ	0%				< 0.0019	< 0.002
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***8.1*** A(MCL,I,DCL),B	***8.8*** A(MCL,I,DCL),B	***5.1*** J A(MCL,I,DCL),B	100%	7.333333333	5.1	8.8	0.0041	**0.039**
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0500	< 0.0500	< 0.25 UJ	0%				< 0.0050	< 0.0050
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.0031	< 0.0013	< 0.014 UJ	0%				< 0.00031	< 0.00013
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.0018	< 0.0012	< 0.008 UJ	0%				< 0.00018	< 0.00012
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00200	< 0.00120	< 0.008 UJ	0%				< 0.00020	< 0.00012
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.0025	< 0.0013	< 0.02 UJ	0%				< 0.00025	< 0.00013
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.0027	< 0.0011	< 0.019 UJ	0%				< 0.00027	< 0.00011
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.0021	< 0.0008	< 0.01 UJ	0%				< 0.00021	< 0.00008
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00190	< 0.00800	< 0.011 UJ	0%				< 0.00019	< 0.00080
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00200	< 0.00070	< 0.015 UJ	0%				< 0.00020	< 0.00007
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.0024	< 0.0017	< 0.009 UJ	0%				< 0.00024	< 0.00017
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.0017	< 0.001	< 0.008 UJ	0%				< 0.00017	< 0.0001
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.0028	< 0.0009	< 0.007 UJ	0%				< 0.00028	< 0.00009
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.0016	< 0.0015	< 0.0095 UJ	0%				< 0.00016	< 0.00015
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.0022	< 0.0011	< 0.0075 UJ	0%				< 0.00022	< 0.00011
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.0018	< 0.0009	< 0.01 UJ	0%				< 0.00018	< 0.00009
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.0022 J	0.0021 J	< 0.0075 UJ	67%	0.00215	0.0021	0.0022	*0.36* B	*0.3*
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.0029	< 0.0027	< 0.018 UJ	0%				< 0.00029	< 0.00027
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00200	< 0.00110	< 0.016 UJ	0%				0.00028 J	< 0.00011
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	**0.026** A(MCL)	**0.012** J A(MCL)	< 0.072 UJ	67%	0.019	0.012	0.026	0.00055 J	< 0.00027
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.0025	< 0.0011	< 0.0100 UJ	0%				< 0.00025	< 0.00011
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00200	< 0.00060	< 0.016 UJ	0%				< 0.00020	< 0.00006
Toluene	108-88-3	530	1	8.2	8.2	0.253	*0.91* B	*0.77* B	*0.6* J B	100%	0.76	0.6	0.91	0.0066	0.0074
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.0019	< 0.001	< 0.012 UJ	0%				< 0.00019	< 0.0001
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00200	< 0.00090	< 0.0095 UJ	0%				< 0.00020	< 0.00009
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.0024	< 0.0014	< 0.015 UJ	0%				< 0.00024	< 0.00014
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.0021	< 0.001	< 0.0085 UJ	0%				< 0.00021	< 0.0001

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	S 3	MW-807S-Dup 7/16/2013	MW-807S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)													
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019		< 0.002	< 0.021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066		< 0.002	< 0.033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	A(MCL)	**0.036** A(MCL)	**0.04** [J] A(MCL)	100%	0.0298	0.0041	0.04
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE		< 0.0050	< 0.05	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23		< 0.00013	< 0.0027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24		< 0.00012	< 0.0016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047		< 0.00012	< 0.0016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE		< 0.00013	< 0.0041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE		< 0.00011	< 0.0038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14		< 0.00008	< 0.0021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE		< 0.00080	< 0.0022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE		< 0.00007	< 0.003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE		< 0.00017	< 0.0018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047		< 0.0001	< 0.0016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91		< 0.00009	< 0.0014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065		< 0.00015	< 0.0019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36		< 0.00011	< 0.0015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE		< 0.00009	< 0.0021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	B	*0.31* B	***0.84*** A(MCL),B	100%	0.4525	0.3	0.84
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016		< 0.00027	< 0.0037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE		< 0.00011	< 0.0033	25%	0.00028	0.00028	0.00028
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94		< 0.00027	< 0.014 [U]	25%	0.00055	0.00055	0.00055
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38		< 0.00011	< 0.002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045		< 0.00006	< 0.0032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253		0.0073	0.0074 [J]	100%	0.0072	0.0066	0.0074
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97		< 0.0001	< 0.0023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076		< 0.00009	< 0.0019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE		< 0.00014	< 0.003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93		< 0.0001	< 0.0017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-808D 11/2/2012	MW-808D 7/17/2013	MW-808D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	M 1
VOCs (mg/L)														
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.85	< 0.02	< 0.21 UJ	0%				< 0.085
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.95	< 0.02	< 0.33 UJ	0%				< 0.095
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***17*** A(MCL,I,DCL),B	***18*** A(MCL,I,DCL),B	***15*** J A(MCL,I,DCL),B	100%	16.66666667	15	18	***82***
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 2.5000	< 0.0500	< 0.5 UJ	0%				< 0.2500
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.16	< 0.0013	< 0.027 UJ	0%				< 0.016
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.09	< 0.0012	< 0.016 UJ	0%				< 0.009
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.10000	< 0.00120	< 0.016 UJ	0%				< 0.01000
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.12	< 0.0013	< 0.041 UJ	0%				< 0.012
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.14	< 0.0011	< 0.038 UJ	0%				< 0.014
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.1	< 0.0008	< 0.021 UJ	0%				< 0.01
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.09500	< 0.00800	< 0.022 UJ	0%				< 0.00950
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.10000	< 0.00070	< 0.03 UJ	0%				< 0.01000
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.12	< 0.0017	< 0.018 UJ	0%				< 0.012
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.085	< 0.001	< 0.016 UJ	0%				< 0.0085
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.14	< 0.0009	< 0.014 UJ	0%				< 0.014
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.08	< 0.0015	< 0.019 UJ	0%				< 0.008
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.11	< 0.0011	< 0.015 UJ	0%				< 0.011
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.09	< 0.0009	< 0.021 UJ	0%				< 0.009
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.1	< 0.001	< 0.015 UJ	0%				*0.048* J
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.14	< 0.0027	< 0.037 UJ	0%				< 0.014
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.10000	< 0.00110	< 0.033 UJ	0%				< 0.01000
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	**0.84** BJ A(MCL,I,DCL)	< 0.0027	< 0.079 UJ	33%	0.84	0.84	0.84	**0.054** J
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.12	< 0.0011	< 0.02 UJ	0%				< 0.012
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.10000	< 0.00060	< 0.032 UJ	0%				< 0.01000
Toluene	108-88-3	530	1	8.2	8.2	0.253	***4.6*** A(MCL),B	***5.5*** A(MCL),B	***3.8*** J A(MCL),B	100%	4.633333333	3.8	5.5	***7.9***
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.095	< 0.001	< 0.023 UJ	0%				< 0.0095
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.10000	< 0.00090	< 0.019 UJ	0%				< 0.01000
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.12	< 0.0014	< 0.03 UJ	0%				< 0.012
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.1	< 0.001	< 0.017 UJ	0%				< 0.01

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] Dibromochloromethane = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.

[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.

[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate

A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	W-808S /2/2012	MW-808S 7/17/2013	MW-808S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)													
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019		< 0.02	< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066		< 0.02	< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	A(MCL,I,DCL),B	***6.9*** A(MCL,I,DCL),B	***36*** A(MCL,I,DCL),B	100%	41.63	6.9	82
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE		< 0.0500	< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23		< 0.0013	< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24		< 0.0012	< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047		< 0.00120	0.0012 [J]	33%	0.0012	0.0012	0.0012
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE		< 0.0013	< 0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE		< 0.0011	< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14		< 0.0008	< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE		< 0.00800	< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE		< 0.00070	< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE		< 0.0017	< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047		< 0.001	< 0.00016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91		< 0.0009	< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065		< 0.0015	< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36		< 0.0011	< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE		< 0.0009	< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	B	0.004 [J]	*0.057* B	100%	0.036	0.004	0.057
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016		< 0.0027	< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE		< 0.00110	< 0.00033 [UJ]	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	A(MCL)	< 0.0027	< 0.00031	33%	0.054	0.054	0.054
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38		< 0.0011	< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045		< 0.00060	< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	A(MCL),B	*0.34* B	***1.2*** A(MCL),B	100%	3.15	0.34	7.9
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97		< 0.001	< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076		< 0.00090	< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE		< 0.0014	< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93		< 0.001	< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-809D 11/2/2012	MW-809D 7/18/2013	MW-809D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-809M 11/2/2012	
VOCs (mg/L)															
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.85	< 0.02	< 1 UJ	0%				< 0.085	<
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.95	< 0.02	< 1.6 UJ	0%				< 0.095	<
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***37*** A(MCL,I,DCL),B	***28*** A(MCL,I,DCL),B	***34*** J A(MCL,I,DCL),B	100%	33	28	37	***6.7*** A(MCL,I,DCL),B	
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 2.5000	< 0.0500	< 2.5 UJ	0%				< 0.2500	<
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.16	< 0.0013	< 0.14 UJ	0%				< 0.016	<
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.09	< 0.0012	< 0.08 UJ	0%				< 0.009	<
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.10000	< 0.00120	< 0.08 UJ	0%				< 0.01000	<
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.12	< 0.0013	< 0.2 UJ	0%				< 0.012	<
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.14	< 0.0011	< 0.19 UJ	0%				< 0.014	<
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.1	< 0.0008	< 0.1 UJ	0%				< 0.01	<
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.09500	< 0.00800	< 0.11 UJ	0%				< 0.00950	<
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.10000	< 0.00070	< 0.15 UJ	0%				< 0.01000	<
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.12	< 0.0017	< 0.09 UJ	0%				< 0.012	<
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.085	< 0.001	< 0.08 UJ	0%				< 0.0085	<
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.14	< 0.0009	< 0.07 UJ	0%				< 0.014	<
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.08	< 0.0015	< 0.095 UJ	0%				< 0.008	<
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.11	< 0.0011	< 0.075 UJ	0%				< 0.011	<
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.09	< 0.0009	< 0.1 UJ	0%				< 0.009	<
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.1	< 0.001	< 0.075 UJ	0%				< 0.01	<
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.14	< 0.0027	< 0.18 UJ	0%				< 0.014	<
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.10000	< 0.00110	< 0.16 UJ	0%				< 0.01000	<
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	**0.58** J A(MCL,I,DCL)	< 0.0027	< 0.26 UJ	33%	0.58	0.58	0.58	**0.054** J A(MCL)	<
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.12	< 0.0011	< 0.1000 UJ	0%				< 0.012	<
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.10000	< 0.00060	< 0.16 UJ	0%				< 0.01000	<
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.095	< 0.001	< 0.075 UJ	0%				0.05	
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.095	< 0.001	< 0.12 UJ	0%				< 0.0095	<
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.10000	< 0.00090	< 0.095 UJ	0%				< 0.01000	<
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.12	< 0.0014	< 0.15 UJ	0%				< 0.012	<
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.1	< 0.001	< 0.085 UJ	0%				< 0.01	<

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-809M 7/18/2013	MW-809M-Dup 7/18/2013	MW-809M 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)													
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	0.02	< 0.02	< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	0.02	< 0.02	< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***15*** A(MCL,I,DCL),B	***15*** A(MCL,I,DCL),B	***6.1*** A(MCL,I,DCL),B	100%	10.7	6.1	15
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	0.0500	< 0.0500	< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	0.0013	< 0.0013	< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	0.0012	< 0.0012	< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.00120	< 0.00120	< 0.00016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	0.0013	< 0.0013	< 0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	0.0011	< 0.0011	< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14	0.0008	< 0.0008	< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	0.00800	< 0.00800	< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	0.00070	< 0.00070	< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	0.0017	< 0.0017	< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.001	< 0.001	< 0.00016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	0.0009	< 0.0009	< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	0.0015	< 0.0015	< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	0.0011	< 0.0011	< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	0.0009	< 0.0009	< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.001	< 0.001	< 0.00015	0%			
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	0.0027	< 0.0027	< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00110	< 0.00110	< 0.00033 UJ	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.0027	< 0.0027	< 0.00031	25%	0.054	0.054	0.054
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	0.0011	< 0.0011	< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	0.00060	< 0.00060	< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.12	0.12	0.042	100%	0.083	0.042	0.12
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	0.001	< 0.001	< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.00090	< 0.00090	< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	0.0014	< 0.0014	< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	0.001	< 0.001	< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-809S 11/2/2012	MW-809S 7/15/2013	MW-809S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-810D 10/31/2012	MW-810D 7/16/2013	MW-810D 9/14/2017	% Detect
VOCs (mg/L)																	
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.002	< 0.0021	0%				< 0.0017	< 0.002	< 0.0021 UJ	0%
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.002	< 0.0033	0%				< 0.0019	< 0.002	< 0.0033 UJ	0%
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	< 0.00017	< 0.00008	***2.2*** A(MCL,I,DCL),B	33%	2.2	2.2	2.2	0.00064 J	< 0.00008	< 0.00018 UJ	33%
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.005	0%				< 0.0050	< 0.0050	< 0.005 UJ	0%
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00013	< 0.00027	0%				< 0.00031	< 0.00013	< 0.00027 UJ	0%
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00012	< 0.00016	0%				< 0.00018	< 0.00012	< 0.00016 UJ	0%
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.00064 J	0.00028 J	0.0013 J	100%	0.00074	0.00028	0.0013	< 0.00020	< 0.00012	< 0.00016 UJ	0%
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00013	< 0.00041	0%				< 0.00025	< 0.00013	< 0.00041 UJ	0%
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00011	< 0.00038	0%				< 0.00027	< 0.00011	< 0.00038 UJ	0%
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00008	< 0.00021	0%				< 0.00021	< 0.00008	< 0.00021 UJ	0%
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00080	< 0.00022	0%				< 0.00019	< 0.00080	< 0.00022 UJ	0%
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00007	< 0.0003	0%				< 0.00020	< 0.00007	< 0.0003 UJ	0%
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00017	< 0.00018	0%				< 0.00024	< 0.00017	< 0.00018 UJ	0%
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00017	< 0.0001	< 0.00016	0%				< 0.00017	< 0.0001	< 0.00016 UJ	0%
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00009	< 0.00014	0%				< 0.00028	< 0.00009	< 0.00014 UJ	0%
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00015	< 0.00019	0%				< 0.00016	< 0.00015	< 0.00019 UJ	0%
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00011	< 0.00015	0%				< 0.00022	< 0.00011	< 0.00015 UJ	0%
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00009	< 0.00021	0%				< 0.00018	< 0.00009	< 0.00021 UJ	0%
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.004	< 0.0001	0.0048 J	67%	0.0088	0.004	0.0048	< 0.00021	< 0.0001	< 0.00015 UJ	0%
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00027	< 0.00037	0%				< 0.00029	< 0.00027	< 0.00037 UJ	0%
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00024 J	< 0.00011	< 0.00033	33%	0.00024	0.00024	0.00024	< 0.00020	< 0.00011	< 0.00033 UJ	0%
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	< 0.00027	< 0.00051 U	0%				< 0.00014	< 0.00027	< 0.00031 UJ	0%
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00011	< 0.0002	0%				< 0.00025	< 0.00011	< 0.0002 UJ	0%
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00006	< 0.00032	0%				< 0.00020	< 0.00006	< 0.00032 UJ	0%
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00019	< 0.0001	0.00038 J	33%	0.00038	0.00038	0.00038	< 0.00019	< 0.0001	< 0.00015 UJ	0%
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.0001	< 0.00023	0%				< 0.00019	< 0.0001	< 0.00023 UJ	0%
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00009	< 0.00019	0%				< 0.00020	< 0.00009	< 0.00019 UJ	0%
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00014	< 0.0003	0%				< 0.00024	< 0.00014	< 0.0003 UJ	0%
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.0001	< 0.00017	0%				< 0.00021	< 0.0001	< 0.00017 UJ	0%

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Average	Minimum Detected	Maximum Detected	MW-810S 10/31/2012	MW-810S 7/16/2013	MW-810S 9/14/2017	MW-810S DUP 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)																	
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019				< 0.0017	< 0.002	< 0.0021	< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066				< 0.0019	< 0.002	< 0.0033	< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	0.00064	0.00064	0.00064	0.00078 [J]	< 0.00008	< 0.00018	< 0.00018	25%	0.00078	0.00078	0.00078
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE				< 0.0050	< 0.0050	< 0.005	< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23				< 0.00031	< 0.00013	< 0.00027	< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24				< 0.00018	< 0.00012	< 0.00016	< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047				< 0.00020	< 0.00012	< 0.00016	< 0.00016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE				< 0.00025	< 0.00013	< 0.00041	< 0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE				< 0.00027	< 0.00011	< 0.00038	< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14				< 0.00021	< 0.00008	< 0.00021	< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE				< 0.00019	< 0.00080	< 0.00022	< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE				< 0.00020	< 0.00007	< 0.0003	< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE				< 0.00024	< 0.00017	< 0.00018	< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047				< 0.00017	< 0.0001	< 0.00016	< 0.00016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91				< 0.00028	< 0.00009	< 0.00014	< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065				< 0.00016	< 0.00015	< 0.00019	< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36				< 0.00022	< 0.00011	< 0.00015	< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE				< 0.00018	< 0.00009	< 0.00021	< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014				< 0.00021	< 0.0001	< 0.00015	< 0.00015	0%			
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016				< 0.00029	< 0.00027	< 0.00037	< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE				0.00029 [J]	< 0.00011	< 0.00033	< 0.00033	25%	0.00029	0.00029	0.00029
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94				< 0.00014	< 0.00027	< 0.00031	< 0.00031	0%			
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38				< 0.00025	< 0.00011	< 0.0002	< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045				< 0.00020	< 0.00006	< 0.00032	< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253				< 0.00019	< 0.0001	< 0.00015	< 0.00015	0%			
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97				< 0.00019	< 0.0001	< 0.00023	< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076				< 0.00020	< 0.00009	< 0.00019	< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE				< 0.00024	< 0.00014	< 0.0003	< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93				< 0.00021	< 0.0001	< 0.00017	< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-811S 10/29/2012	MW-811S 7/16/2013	MW-811S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-812S 10/31/2012	MW-812S 7/16/2013	MW-812S 9/13/2017	% Detect	Average	Minimum Detected
VOCs (mg/L)																			
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.002	< 0.0021 UJ	0%				< 0.0017	< 0.002	< 0.0021	0%		
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.002	< 0.0033 UJ	0%				< 0.0019	< 0.002	< 0.0033	0%		
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	0.0022	0.0016	< 0.00018 UJ	67%	0.0019	0.0016	0.0022	0.003	0.0014	< 0.00018	67%	0.0022	0.0014
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.005 UJ	0%				< 0.0050	< 0.0050	< 0.005	0%		
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00013	< 0.00027 UJ	0%				< 0.00031	< 0.00013	< 0.00027	0%		
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00012	< 0.00016 UJ	0%				< 0.00018	< 0.00012	< 0.00016	0%		
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00012	< 0.00016 UJ	0%				< 0.00020	< 0.00012	< 0.00016	0%		
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00013	< 0.00041 UJ	0%				< 0.00025	< 0.00013	< 0.00041	0%		
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00011	< 0.00038 UJ	0%				< 0.00027	< 0.00011	< 0.00038	0%		
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00008	< 0.00021 UJ	0%				< 0.00021	< 0.00008	< 0.00021	0%		
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00080	< 0.00022 UJ	0%				< 0.00019	< 0.00080	< 0.00022	0%		
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00007	< 0.0003 UJ	0%				< 0.00020	< 0.00007	< 0.0003	0%		
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00017	< 0.00018 UJ	0%				< 0.00024	< 0.00017	< 0.00018	0%		
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00017	< 0.0001	< 0.00016 UJ	0%				< 0.00017	< 0.0001	0.00021 J	33%	0.00021	0.00021
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00009	< 0.00014 UJ	0%				< 0.00028	< 0.00009	< 0.00014	0%		
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00015	< 0.00019 UJ	0%				< 0.00016	< 0.00015	< 0.00019	0%		
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00011	< 0.00015 UJ	0%				< 0.00022	< 0.00011	< 0.00015	0%		
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00009	< 0.00021 UJ	0%				< 0.00018	< 0.00009	< 0.00021	0%		
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00021	< 0.0001	< 0.00015 UJ	0%				< 0.00021	< 0.0001	< 0.00015	0%		
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00027	< 0.00037 UJ	0%				< 0.00029	< 0.00027	< 0.00037	0%		
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00020	< 0.00011	< 0.00033 UJ	0%				< 0.00020	< 0.00011	< 0.00033	0%		
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	< 0.00027	< 0.00031 UJ	0%				< 0.00014	< 0.00027	< 0.00031	0%		
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00011	< 0.0002 UJ	0%				< 0.00025	< 0.00011	< 0.0002	0%		
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00006	< 0.00032 UJ	0%				< 0.00020	< 0.00006	< 0.00032	0%		
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00019	< 0.0001	< 0.00015 UJ	0%				< 0.00019	< 0.0001	< 0.00015	0%		
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.0001	< 0.00023 UJ	0%				< 0.00019	< 0.0001	< 0.00023	0%		
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00009	0.00057 J	33%	0.00057	0.00057	0.00057	< 0.00020	< 0.00009	< 0.00019	0%		
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00014	< 0.0003 UJ	0%				< 0.00024	< 0.00014	< 0.0003	0%		
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.0001	< 0.00017 UJ	0%				< 0.00021	< 0.0001	< 0.00017	0%		

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected	MW-813S 10/31/2012	MW-813S 7/15/2013	MW-813S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)														
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019		< 0.0017	< 0.002	< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066		< 0.0019	< 0.002	< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	0.003	< 0.00017	0.0007 J	< 0.00018	33%	0.0007	0.0007	0.0007
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE		< 0.0050	< 0.0050	< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23		< 0.00031	< 0.00013	< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24		< 0.00018	< 0.00012	< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047		< 0.00020	< 0.00012	< 0.00016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE		< 0.00025	< 0.00013	< 0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE		< 0.00027	< 0.00011	< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14		< 0.00021	< 0.00008	< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE		< 0.00019	< 0.00080	< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE		< 0.00020	< 0.00007	< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE		< 0.00024	< 0.00017	< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.00021	0.00036 J	< 0.0001	0.00022 J	67%	0.00029	0.00022	0.00036
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91		< 0.00028	< 0.00009	< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065		< 0.00016	< 0.00015	< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36		< 0.00022	< 0.00011	< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE		< 0.00018	< 0.00009	< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014		< 0.00021	< 0.0001	< 0.00015	0%			
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016		< 0.00029	< 0.00027	< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE		< 0.00020	< 0.00011	< 0.00033	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94		< 0.00014	< 0.00027	< 0.00031	0%			
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38		< 0.00025	< 0.00011	< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045		< 0.00020	< 0.00006	< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253		< 0.00019	< 0.0001	< 0.00015	0%			
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97		< 0.00019	< 0.0001	< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076		< 0.00020	< 0.00009	< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE		< 0.00024	< 0.00014	< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93		< 0.00021	< 0.0001	< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-814S 10/29/2012	MW-814S 7/16/2013	MW-814S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-815D 10/29/2012	MW-815D 7/15/2013	MW-815D 9/11/2017	% Detect	Average
VOCs (mg/L)																		
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.002	< 0.0021	0%				< 0.0017	< 0.002	< 0.0021	0%	
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.002	< 0.0033	0%				< 0.0019	< 0.002	< 0.0033	0%	
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	0.00045 J	**0.0065** A(MCL)	0.001 J	100%	0.00265	0.00045	0.0065	< 0.00017	< 0.00008	< 0.0012 U	0%	
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.005	0%				< 0.0050	< 0.0050	< 0.005	0%	
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00013	< 0.00027	0%				< 0.00031	< 0.00013	< 0.00027	0%	
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00012	< 0.00016	0%				< 0.00018	< 0.00012	< 0.00016	0%	
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00012	< 0.00016	0%				< 0.00020	< 0.00012	< 0.00016	0%	
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00013	< 0.00041	0%				< 0.00025	< 0.00013	< 0.00041	0%	
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00011	< 0.00038	0%				< 0.00027	< 0.00011	< 0.00038	0%	
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00008	< 0.00021	0%				< 0.00021	< 0.00008	< 0.00021	0%	
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00080	< 0.00022	0%				< 0.00019	< 0.00080	< 0.00022	0%	
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00007	< 0.0003	0%				< 0.00020	< 0.00007	< 0.0003	0%	
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00017	< 0.00018	0%				< 0.00024	< 0.00017	< 0.00018	0%	
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.00022 J	0.00057 J	0.00026 J	100%	0.00035	0.00022	0.00057	< 0.00017	< 0.0001	< 0.00016	0%	
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00009	< 0.00014	0%				< 0.00028	< 0.00009	< 0.00014	0%	
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00015	< 0.00019	0%				< 0.00016	< 0.00015	< 0.00019	0%	
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00011	< 0.00015	0%				< 0.00022	< 0.00011	< 0.00015	0%	
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00009	< 0.00021	0%				< 0.00018	< 0.00009	< 0.00021	0%	
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00021	< 0.0001	< 0.00015	0%				< 0.00021	< 0.0001	< 0.00015	0%	
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00027	< 0.00037	0%				< 0.00029	< 0.00027	< 0.00037	0%	
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00020	< 0.00011	< 0.00033	0%				< 0.00020	< 0.00011	< 0.00033	0%	
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	< 0.00027	< 0.00031	0%				< 0.00014	< 0.00027	< 0.00038 U	0%	
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00011	< 0.0002	0%				< 0.00025	< 0.00011	< 0.0002	0%	
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00006	< 0.00032	0%				< 0.00020	< 0.00006	< 0.00032	0%	
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00019	< 0.0001	< 0.00015	0%				< 0.00019	< 0.0001	< 0.00039 U	0%	
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.0001	< 0.00023	0%				< 0.00019	< 0.0001	< 0.00023	0%	
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.00036 J	0.00065 J	0.00032 J	100%	0.0004	0.00032	0.00065	< 0.00020	< 0.00009	< 0.00019	0%	
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00014	< 0.0003	0%				< 0.00024	< 0.00014	< 0.0003	0%	
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.0001	< 0.00017	0%				< 0.00021	< 0.0001	< 0.00017	0%	

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected	MW-815S 10/29/2012	MW-815S 7/17/2013	MW-815S 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)															
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019			< 0.0017	< 0.002	< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066			< 0.0019	< 0.002	< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114			< 0.00017	< 0.00008	< 0.001 U	0%			
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE			< 0.0050	< 0.0050	< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23			< 0.00031	< 0.00013	< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24			< 0.00018	< 0.00012	< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047			< 0.00020	< 0.00012	< 0.00016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE			< 0.00025	< 0.00013	< 0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE			< 0.00027	< 0.00011	< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14			< 0.00021	< 0.00008	< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE			< 0.00019	< 0.00080	< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE			< 0.00020	< 0.00007	< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE			< 0.00024	< 0.00017	< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047			< 0.00017	< 0.0001	< 0.00016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91			< 0.00028	< 0.00009	< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065			< 0.00016	< 0.00015	< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36			< 0.00022	< 0.00011	< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE			< 0.00018	< 0.00009	< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014			< 0.00021	< 0.0001	< 0.00015	0%			
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016			< 0.00029	< 0.00027	< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE			0.00023 J	< 0.00011	< 0.00033	33%	0.00023	0.00023	0.00023
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94			< 0.00014	< 0.00027	< 0.00076 U	0%			
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38			< 0.00025	< 0.00011	< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045			< 0.00020	< 0.00006	< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253			< 0.00019	< 0.0001	< 0.00029 U	0%			
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97			< 0.00019	< 0.0001	< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076			< 0.00020	< 0.00009	< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE			< 0.00024	< 0.00014	< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93			< 0.00021	< 0.0001	< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] Dibromochloromethane = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.

[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.

[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate

A(GW)=IDEM DQO Exceedance of the GW Solubility

A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level

A(I)=IDEM DQO Exceedance of the Industrial Level

A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-816D 11/1/2012	MW-816D 7/17/2013	MW-816D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-816S 11/1/2012
VOCs (mg/L)														
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.02	< 0.0021 UJ	0%				< 0.0017
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.02	< 0.0033 UJ	0%				< 0.0019
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***5.8*** A(MCL,I,DCL),B	***8*** A(MCL,I,DCL),B	***12*** J A(MCL,I,DCL),B	100%	8.6	5.8	12	**0.039** A(MCL)
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0500	< 0.005 UJ	0%				< 0.0050
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.0013	< 0.00027 UJ	0%				< 0.00031
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.0012	< 0.00016 UJ	0%				< 0.00018
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00120	< 0.00016 UJ	0%				0.00020 J
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.0013	< 0.00041 UJ	0%				< 0.00025
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.0011	< 0.00038 UJ	0%				< 0.00027
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.0008	< 0.00021 UJ	0%				< 0.00021
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00800	< 0.00022 UJ	0%				< 0.00019
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00070	< 0.0003 UJ	0%				< 0.00020
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.0017	< 0.00018 UJ	0%				< 0.00024
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00017	< 0.001	< 0.00016 UJ	0%				0.00052 J
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.0009	< 0.00014 UJ	0%				< 0.00028
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.0015	< 0.00019 UJ	0%				< 0.00016
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.0011	< 0.00015 UJ	0%				< 0.00022
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.0009	< 0.00021 UJ	0%				< 0.00018
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00021	< 0.001	0.0002 J	33%	0.0002	0.0002	0.0002	0.00044 J
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.0027	< 0.00037 UJ	0%				< 0.00029
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00020	< 0.00110	< 0.00033 UJ	0%				0.00027 J
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	0.0039 J	< 0.00031 UJ	33%	0.0039	0.0039	0.0039	< 0.00014
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.0011	< 0.0002 UJ	0%				< 0.00025
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00060	< 0.00032 UJ	0%				< 0.00020
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.0069	0.0066 J	0.0082 J	100%	0.007233333	0.0066	0.0082	0.0033
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.001	< 0.00023 UJ	0%				< 0.00019
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00090	< 0.00019 UJ	0%				< 0.00020
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.0014	< 0.0003 UJ	0%				< 0.00024
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.001	< 0.00017 UJ	0%				< 0.00021

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-816S 7/16/2013	MW-816S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)												
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	0.002	< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	0.002	< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	**0.034** A(MCL)	**0.069** A(MCL,I,DCL)	100%	0.047333333	0.034	0.069
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	0.0050	< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	0.00013	< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	0.00012	< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.00012	< 0.00016	33%	0.00016	0.00012	0.0002
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	0.00013	< 0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	0.00011	< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14	0.00008	< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	0.00080	< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	0.00007	< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	0.00017	< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.0001	0.00028 [J]	67%	0.0003	0.0001	0.00052
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	0.00009	< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	0.00015	< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	0.00011	< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	0.00009	< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.0001	*0.028* B	67%	0.009513333	0.0001	0.028
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	0.00027	< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00011	< 0.00033	33%	0.000236667	0.00011	0.00033
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.00027	< 0.0004 [U]	0%	0.00027	0.00014	0.0004
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	0.00011	< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	0.00006	< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.0017	< 0.0046 [U]	67%	0.0032	0.0017	0.0046
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	0.0001	< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.00009	< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	0.00014	< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	0.0001	< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-817D 11/1/2012	MW-817D Dup 11/1/2012	MW-817D 7/17/2013	MW-817D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	
VOCs (mg/L)															
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.017	< 0.0017	< 0.002	< 0.0021 UJ	0%				<
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.019	< 0.0019	< 0.002	< 0.0033 UJ	0%				<
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***1*** A(MCL,I,DCL),B	***0.85*** A(MCL,I,DCL),B	***3.1*** A(MCL,I,DCL),B	**0.11** J A(MCL,I,DCL)	100%	1.265	0.11	3.1	
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0500	< 0.0050	< 0.0050	< 0.005 UJ	0%				<
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.0031	< 0.00031	< 0.00013	< 0.00027 UJ	0%				<
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.0018	< 0.00018	< 0.00012	< 0.00016 UJ	0%				<
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00200	< 0.00020	< 0.00012	< 0.00016 UJ	0%				<
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.0025	< 0.00025	< 0.00013	< 0.00041 UJ	0%				<
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.0027	< 0.00027	< 0.00011	< 0.00038 UJ	0%				<
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.0021	< 0.00021	< 0.00008	< 0.00021 UJ	0%				<
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00190	< 0.00019	< 0.00080	< 0.00022 UJ	0%				<
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00200	< 0.00020	< 0.00007	< 0.0003 UJ	0%				<
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.0024	< 0.00024	< 0.00017	< 0.00018 UJ	0%				<
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.0017	< 0.00017	< 0.0001	< 0.00016 UJ	0%				
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.0028	< 0.00028	< 0.00009	< 0.00014 UJ	0%				<
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.0016	< 0.00016	< 0.00015	< 0.00019 UJ	0%				<
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.0022	< 0.00022	< 0.00011	< 0.00015 UJ	0%				<
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.0018	< 0.00018	< 0.00009	< 0.00021 UJ	0%				<
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.0021	< 0.00021	< 0.0001	< 0.00015 UJ	0%				
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.0029	< 0.00029	< 0.00027	< 0.00037 UJ	0%				<
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00200	0.00048 J	< 0.00011	< 0.00033 UJ	25%	0.00073	0.00011	0.002	
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.0038 J	0.0005 J	< 0.00027	< 0.00031 UJ	50%	0.00122	0.00027	0.0038	
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.0025	< 0.00025	< 0.00011	< 0.0002 UJ	0%				<
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00200	< 0.00020	< 0.00006	< 0.00032 UJ	0%				<
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.0019	0.00075 J	0.00082 J	0.0013 J	75%	0.0011925	0.00075	0.0019	
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.0019	< 0.00019	< 0.0001	< 0.00023 UJ	0%				<
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00200	< 0.00020	< 0.00009	< 0.00019 UJ	0%				<
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.0024	< 0.00024	< 0.00014	< 0.0003 UJ	0%				<
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.0021	< 0.00021	< 0.0001	< 0.00017 UJ	0%				<

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-817S 11/1/2012	MW-817S 7/17/2013	MW-817S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)													
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	0.0017	< 0.002	< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	0.0019	< 0.002	< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***0.21*** A(MCL,I,DCL),B	**0.075** A(MCL,I,DCL)	0.0035 [J]	100%	0.096166667	0.0035	0.21
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	0.0050	< 0.0050	< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	0.00031	< 0.00013	< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	0.00018	< 0.00012	< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.00020	< 0.00012	< 0.00016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	0.00025	< 0.00013	< 0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	0.00027	< 0.00011	< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14	0.00021	< 0.00008	< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	0.00019	< 0.00080	< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	0.00020	< 0.00007	< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	0.00024	< 0.00017	< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.0003 [J]	< 0.0001	< 0.00016	33%	0.000186667	0.0001	0.0003
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	0.00028	< 0.00009	< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	0.00016	< 0.00015	< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	0.00022	< 0.00011	< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	0.00018	< 0.00009	< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.006	0.0038	0.00025 [J]	100%	0.00335	0.00025	0.006
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	0.00029	< 0.00027	< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00023 [J]	< 0.00011	< 0.00033	33%	0.000223333	0.00011	0.00033
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.00028 [J]	< 0.00027	< 0.00031	33%	0.000286667	0.00027	0.00031
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	0.00025	< 0.00011	< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	0.00020	< 0.00006	< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.0026	0.0026	0.00021 [J]	100%	0.001803333	0.00021	0.0026
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	0.00019	< 0.0001	< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.00020	< 0.00009	< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	0.00024	< 0.00014	< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	0.00021	< 0.0001	< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-818S 11/1/2012	MW-818S 7/17/2013	MW-818S 9/14/2017	MW-818S DUP 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-819D 11/2/2012	MW-819D 7/17/2013	
VOCs (mg/L)																	
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.002	< 0.021	< 0.021	0%				< 0.017	< 0.02	<
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.002	< 0.033	< 0.033	0%				< 0.019	< 0.02	<
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	**0.028** A(MCL)	**0.0077** A(MCL)	< 0.0018	< 0.0018	50%	0.0098	0.0018	0.028	***69*** A(MCL,I,DCL),B	***61*** A(MCL,I,DCL),B	
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.05	< 0.05	0%				< 0.0500	< 0.0500	<
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00013	< 0.0027	< 0.0027	0%				< 0.0031	< 0.0013	<
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00012	< 0.0016	< 0.0016	0%				< 0.0018	< 0.0012	<
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00012	< 0.0016	< 0.0016	0%				< 0.00200	< 0.00120	<
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00013	< 0.0041	< 0.0041	0%				< 0.0025	< 0.0013	<
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00011	< 0.0038	< 0.0038	0%				< 0.0027	< 0.0011	<
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00008	< 0.0021	< 0.0021	0%				< 0.0021	< 0.0008	<
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00080	< 0.0022	< 0.0022	0%				< 0.00190	< 0.00800	<
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00007	< 0.003	< 0.003	0%				< 0.00200	< 0.00070	<
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00017	< 0.0018	< 0.0018	0%				< 0.0024	< 0.0017	<
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00017	< 0.0001	< 0.0016	< 0.0016	0%				< 0.0017	< 0.001	<
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00009	< 0.0014	< 0.0014	0%				< 0.0028	< 0.0009	<
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00015	< 0.0019	< 0.0019	0%				< 0.0016	< 0.0015	<
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00011	< 0.0015	< 0.0015	0%				< 0.0022	< 0.0011	<
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00009	< 0.0021	< 0.0021	0%				< 0.0018	< 0.0009	<
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	*0.033* B	0.013	*0.015* [J] B	*0.014* [J] B	100%	0.0188	0.013	0.033	0.0031 [J]	0.0033 [J]	<
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00027	< 0.0037	< 0.0037	0%				< 0.0029	< 0.0027	<
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00041 [J]	< 0.00011	< 0.0033	< 0.0033	25%	0.0018	0.00011	0.0033	< 0.00200	< 0.00110	<
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.00031 [J]	< 0.00027	< 0.007 [U]	< 0.0065 [U]	25%	0.0035	0.00027	0.007	0.0023 [J]	< 0.0027	<
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00011	< 0.002	< 0.002	0%				< 0.0025	< 0.0011	<
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00006	< 0.0032	< 0.0032	0%				< 0.00200	< 0.00060	<
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.038	0.016	0.014 [J]	0.012 [J]	100%	0.0200	0.012	0.038	0.0033 [J]	< 0.001	<
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.0001	< 0.0023	< 0.0023	0%				< 0.0019	< 0.001	<
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00009	< 0.0019	< 0.0019	0%				< 0.00200	< 0.00090	<
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00014	< 0.003	< 0.003	0%				< 0.0024	< 0.0014	<
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.0001	< 0.0017	< 0.0017	0%				< 0.0021	< 0.001	<

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-819D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)											
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	0.021 UJ	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	0.033 UJ	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***5.7*** J A(MCL,I,DCL),B	100%	45.23333333	5.7	69
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	0.05 UJ	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	0.0027 UJ	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	0.0016 UJ	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.0016 UJ	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	0.0041 UJ	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	0.0038 UJ	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14	0.0021 UJ	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	0.0022 UJ	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	0.003 UJ	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	0.0018 UJ	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.0016 UJ	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	0.0014 UJ	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	0.0019 UJ	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	0.0015 UJ	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	0.0021 UJ	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.0015 UJ	67%	0.002633333	0.0015	0.0033
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	0.0037 UJ	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.0033 UJ	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.01 UJ	33%	0.005	0.0023	0.01
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	0.0020 UJ	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	0.0032 UJ	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.0015 UJ	33%	0.001933333	0.001	0.0033
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	0.0023 UJ	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.0019 UJ	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	0.003 UJ	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	0.0017 UJ	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] Dibromochloromethane = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.

[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.

[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate

A(GW)=IDEM DQO Exceedance of the GW Solubility

A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level

A(I)=IDEM DQO Exceedance of the Industrial Level

A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-819S 11/2/2012	MW-819S 7/17/2013	MW-819S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	M 1
VOCs (mg/L)														
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.017	< 0.02	< 0.0021	0%				< 0.85
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.019	< 0.02	< 0.0033	0%				< 0.95
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***26*** A(MCL,I,DCL),B	***11*** A(MCL,I,DCL),B	***57*** A(MCL,I,DCL),B	100%	31.33333333	11	57	***7***
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0500	< 0.0500	< 0.005	0%				< 2.5000
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.0031	< 0.0013	< 0.00027	0%				< 0.16
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.0018	< 0.0012	< 0.00016	0%				< 0.09
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.00310 [J]	< 0.00120	0.0035 [J]	67%	0.0026	0.0012	0.0035	< 0.10000
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.0025	< 0.0013	< 0.00041	0%				< 0.12
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.0027	< 0.0011	< 0.00038	0%				< 0.14
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.0021	< 0.0008	< 0.00021	0%				< 0.1
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00190	< 0.00800	< 0.00022	0%				< 0.09500
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00200	< 0.00070	< 0.0003	0%				< 0.10000
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.0024	< 0.0017	< 0.00018	0%				< 0.12
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.0017	< 0.001	0.0017 [J]	33%	0.001466667	0.001	0.0017	< 0.085
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.0028	< 0.0009	< 0.00014	0%				< 0.14
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.0016	< 0.0015	< 0.00019	0%				< 0.08
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.0022	< 0.0011	< 0.00015	0%				< 0.11
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.0018	< 0.0009	< 0.00021	0%				< 0.09
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	***1.3*** A(MCL),B	***0.99*** A(MCL),B	***1.3*** A(MCL),B	100%	1.196666667	0.99	1.3	*0.48* [J]
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.0029	< 0.0027	< 0.00037	0%				< 0.14
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00200	< 0.00110	< 0.00033	0%				< 0.10000
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.0025 [J]	< 0.0027	< 0.0004 [U]	33%	0.001866667	0.0004	0.0027	**0.56** [J]
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.0025	< 0.0011	< 0.0002	0%				< 0.12
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00200	< 0.00060	< 0.00032	0%				< 0.10000
Toluene	108-88-3	530	1	8.2	8.2	0.253	***15*** A(MCL,I,DCL),B	***6.6*** A(MCL),B	***17*** A(MCL,I,DCL),B	100%	12.86666667	6.6	17	< 0.095
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.0019	< 0.001	< 0.00023	0%				< 0.095
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00200	< 0.00090	< 0.00019	0%				< 0.10000
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.0024	< 0.0014	< 0.0003	0%				< 0.12
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.0021	< 0.001	< 0.00017	0%				< 0.1

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	W-820S 1/2/2012	MW-820S 7/18/2013	MW-820S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)													
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019		< 0.02	< 0.021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066		< 0.02	< 0.033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	A(MCL,I,DCL),B	***1.7*** A(MCL,I,DCL),B	***3.5*** A(MCL,I,DCL),B	100%	4.066666667	1.7	7
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE		< 0.0500	< 0.05	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23		< 0.0013	< 0.0027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24		< 0.0012	< 0.0016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047		< 0.00120	< 0.0016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE		< 0.0013	< 0.0041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE		< 0.0011	< 0.0038 UJ	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14		< 0.0008	< 0.0021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE		< 0.00800	< 0.0022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE		< 0.00070	< 0.003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE		< 0.0017	< 0.0018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047		< 0.001	< 0.0016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91		< 0.0009	< 0.0014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065		< 0.0015	< 0.0019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36		< 0.0011	< 0.0015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE		< 0.0009	< 0.0021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	B	*0.48* B	*0.27* B	100%	0.41	0.27	0.48
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016		< 0.0027	< 0.0037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE		< 0.00110	< 0.0033	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	A(MCL,I,DCL)	**0.018** J A(MCL)	< 0.031 U	67%	0.203	0.018	0.56
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38		< 0.0011	< 0.002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045		< 0.00060	< 0.0032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253		0.013	0.21	67%	0.106	0.013	0.21
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97		< 0.001	< 0.0023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076		< 0.00090	< 0.0019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE		< 0.0014	< 0.003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93		< 0.001	< 0.0017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-821D 11/2/2012	MW-821D 7/18/2013	MW-821D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-821S 11/2/2012
VOCs (mg/L)														
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.017	< 0.4	< 0.0021 UJ	0%				< 0.085
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.019	< 0.4	< 0.0033 UJ	0%				< 0.095
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***110*** A(MCL,I,DCL),B	***280*** A(MCL,I,DCL),B	***300*** J A(MCL,I,DCL),B	100%	230	110	300	***19*** A(MCL,I,DCL),B
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0500	< 1.0000	< 0.005 UJ	0%				< 0.2500
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.0031	< 0.026	< 0.00027 UJ	0%				< 0.016
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.0018	< 0.024	< 0.00016 UJ	0%				< 0.009
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00200	< 0.02400	< 0.00016 UJ	0%				< 0.01000
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.0025	< 0.026	< 0.00041 UJ	0%				< 0.012
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.0027	< 0.022	< 0.00038 UJ	0%				< 0.014
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.0021	< 0.016	< 0.00021 UJ	0%				< 0.01
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00190	< 0.16000	< 0.00022 UJ	0%				< 0.00950
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00200	< 0.01400	< 0.0003 UJ	0%				< 0.01000
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.0024	< 0.034	< 0.00018 UJ	0%				< 0.012
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.0017	< 0.02	< 0.00016 UJ	0%				< 0.0085
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.0028	< 0.018	< 0.00014 UJ	0%				< 0.014
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.0016	< 0.03	< 0.00019 UJ	0%				< 0.008
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.0022	< 0.022	< 0.00015 UJ	0%				< 0.011
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.0018	< 0.018	< 0.00021 UJ	0%				< 0.009
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.0041 J	< 0.02	0.0013 J	67%	0.008466667	0.0013	0.02	*0.67* B
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.0029	< 0.054	< 0.00037 UJ	0%				< 0.014
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00200	< 0.02200	< 0.00033 UJ	0%				< 0.01000
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.0023 J	**0.29** J A(MCL)	< 0.00083 UJ	67%	0.09771	0.00083	0.29	**0.047** J A(MCL)
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.0025	< 0.022	< 0.0002 UJ	0%				< 0.012
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00200	< 0.01200	< 0.00032 UJ	0%				< 0.01000
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.0031 J	< 0.02	0.0079 J	67%	0.010333333	0.0031	0.02	***3.6*** A(MCL),B
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.0019	< 0.02	< 0.00023 UJ	0%				< 0.0095
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00200	< 0.01800	< 0.00019 UJ	0%				< 0.01000
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.0024	< 0.028	< 0.0003 UJ	0%				< 0.012
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.0021	< 0.02	< 0.00017 UJ	0%				< 0.01

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-821S 7/18/2013	MW-821S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)												
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	0.02	< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	0.02	< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***5.5*** A(MCL,I,DCL),B	***5.7*** A(MCL,I,DCL),B	100%	10.1	5.5	19
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	0.0500	< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	0.0013	< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	0.0012	< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.00120	0.0021 [J]	33%	0.0044	0.0012	0.01
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	0.0013	0.0007 [J]	33%	0.0047	0.0007	0.012
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	0.0011	< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14	0.0008	< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	0.00800	< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	0.00070	< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	0.0017	< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.001	0.0077	33%	0.0057	0.001	0.0085
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	0.0009	< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	0.0015	< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	0.0011	< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	0.0009	< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	*0.13* B	*0.21* B	100%	0.34	0.13	0.67
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	0.0027	< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00110	< 0.00033	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	**0.016** [J] A(MCL)	< 0.00056 [U]	67%	0.021	0.00056	0.047
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	0.0011	< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	0.00060	< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	*0.47* B	0.25	100%	1.44	0.25	3.6
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	0.001	< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.00090	< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	0.0014	< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	0.001	< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-822D 10/31/2012	MW-822D 7/16/2013	MW-822D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-822S 10/31/2012	MW-822S 7/16/2013	MW-822S 9/13/2017	MW-822S DUP 9/13/2017	% Detect	Average
VOCs (mg/L)																			
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.002	< 0.0021	0%				< 0.0017	< 0.002	< 0.0021	< 0.0021	0%	
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.002	< 0.0033	0%				< 0.0019	< 0.002	< 0.0033	< 0.0033	0%	
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	0.00037 J	< 0.00008	< 0.00018	33%	0.00021	0.00008	0.00037	< 0.00017	< 0.00008	< 0.00018	< 0.00018	0%	
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.005	0%				< 0.0050	< 0.0050	< 0.005	< 0.005	0%	
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00013	< 0.00027	0%				< 0.00031	< 0.00013	< 0.00027	< 0.00027	0%	
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00012	< 0.00016	0%				< 0.00018	< 0.00012	< 0.00016	< 0.00016	0%	
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00012	< 0.00016	0%				< 0.00020	< 0.00012	< 0.00016	< 0.00016	0%	
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00013	< 0.00041	0%				< 0.00025	< 0.00013	< 0.00041	< 0.00041	0%	
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00011	< 0.00038	0%				< 0.00027	< 0.00011	< 0.00038	< 0.00038	0%	
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00008	< 0.00021	0%				< 0.00021	< 0.00008	< 0.00021	< 0.00021	0%	
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00080	< 0.00022	0%				< 0.00019	< 0.00080	< 0.00022	< 0.00022	0%	
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00007	< 0.0003	0%				< 0.00020	< 0.00007	< 0.0003	< 0.0003	0%	
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00017	< 0.00018	0%				< 0.00024	< 0.00017	< 0.00018	< 0.00018	0%	
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00017	< 0.0001	< 0.00016	0%				< 0.00017	< 0.0001	< 0.00016	< 0.00016	0%	
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00009	< 0.00014	0%				< 0.00028	< 0.00009	< 0.00014	< 0.00014	0%	
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00015	< 0.00019	0%				< 0.00016	< 0.00015	< 0.00019	< 0.00019	0%	
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00011	< 0.00015	0%				< 0.00022	< 0.00011	< 0.00015	< 0.00015	0%	
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00009	< 0.00021	0%				< 0.00018	< 0.00009	< 0.00021	< 0.00021	0%	
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00021	< 0.0001	< 0.00015	0%				< 0.00021	< 0.0001	< 0.00015	< 0.00015	0%	
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00027	< 0.00037	0%				< 0.00029	< 0.00027	< 0.00037	< 0.00037	0%	
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00031 J	< 0.00011	< 0.00033	33%	0.00025	0.00011	0.00033	0.00070 J	< 0.00011	< 0.00033	< 0.00033	25%	0.0003675
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	< 0.00027	< 0.00031	0%				< 0.00014	< 0.00027	< 0.00031	< 0.00031	0%	
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00011	< 0.0002	0%				< 0.00025	< 0.00011	< 0.0002	< 0.0002	0%	
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00006	< 0.00032	0%				< 0.00020	< 0.00006	< 0.00032	< 0.00032	0%	
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00019	< 0.0001	< 0.00015	0%				< 0.00019	< 0.0001	< 0.00015	< 0.00015	0%	
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.0001	< 0.00023	0%				< 0.00019	< 0.0001	< 0.00023	< 0.00023	0%	
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00009	< 0.00019	0%				< 0.00020	< 0.00009	< 0.00019	< 0.00019	0%	
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00014	< 0.0003	0%				< 0.00024	< 0.00014	< 0.0003	< 0.0003	0%	
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.0001	< 0.00017	0%				< 0.00021	< 0.0001	< 0.00017	< 0.00017	0%	

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected	MW-823D 11/1/2012	MW-823D 7/17/2013	MW-823D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)															
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019			< 0.0017	< 0.02	< 0.21 UJ	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066			< 0.0019	< 0.02	< 0.33 UJ	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114			***31*** A(MCL,I,DCL),B	***22*** A(MCL,I,DCL),B	***48*** J A(MCL,I,DCL),B	100%	33.66666667	22	48
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE			< 0.0050	< 0.0500	< 0.5 UJ	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23			< 0.00031	< 0.0013	< 0.027 UJ	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24			< 0.00018	< 0.0012	< 0.016 UJ	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047			0.00032 J	< 0.00120	< 0.016 UJ	33%	0.00584	0.00032	0.016
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE			< 0.00025	< 0.0013	< 0.041 UJ	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE			< 0.00027	< 0.0011	< 0.038 UJ	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14			< 0.00021	< 0.0008	< 0.021 UJ	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE			< 0.00019	< 0.00800	< 0.022 UJ	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE			< 0.00020	< 0.00070	< 0.03 UJ	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE			< 0.00024	< 0.0017	< 0.018 UJ	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047			< 0.00017	< 0.001	< 0.016 UJ	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91			< 0.00028	< 0.0009	< 0.014 UJ	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065			< 0.00016	< 0.0015	< 0.019 UJ	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36			< 0.00022	< 0.0011	< 0.015 UJ	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE			< 0.00018	< 0.0009	< 0.021 UJ	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014			0.005	< 0.001	< 0.015 UJ	33%	0.007	0.001	0.015
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016			< 0.00029	< 0.0027	< 0.037 UJ	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00011	0.0007	< 0.00020	< 0.00110	< 0.033 UJ	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94			0.00022 J	< 0.0027	< 0.11 UJ	33%	0.03764	0.00022	0.11
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38			< 0.00025	< 0.0011	< 0.02 UJ	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045			< 0.00020	< 0.00060	< 0.032 UJ	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253			0.013	0.015	< 0.015 UJ	67%	0.014333333	0.013	0.015
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97			< 0.00019	< 0.001	< 0.023 UJ	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076			< 0.00020	< 0.00090	< 0.019 UJ	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE			< 0.00024	< 0.0014	< 0.03 UJ	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93			< 0.00021	< 0.001	< 0.017 UJ	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-823S 11/1/2012	MW-823S 7/17/2013	MW-823S-Dup 7/17/2013	MW-823S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-824D 11/1/2012	M 7
VOCs (mg/L)																
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.002	< 0.02	< 0.021	0%				< 0.0017	< 0.02
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.002	< 0.02	< 0.033	0%				< 0.0019	< 0.02
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***1.9*** A(MCL,I,DCL),B	**0.033** A(MCL)	**0.051** A(MCL)	***1.8*** A(MCL,I,DCL),B	100%	0.946	0.033	1.9	***43*** A(MCL,I,DCL),B	***31***
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.0500	< 0.05	0%				< 0.0050	< 0.0500
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00013	< 0.0013	< 0.0027	0%				< 0.00031	< 0.0013
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00012	< 0.0012	< 0.0016	0%				< 0.00018	< 0.0012
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00012	< 0.00120	< 0.0016	0%				0.00078 [J]	< 0.00120
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00013	< 0.0013	< 0.0041	0%				< 0.00025	< 0.0013
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00011	< 0.0011	< 0.0038	0%				< 0.00027	< 0.0011
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00008	< 0.0008	< 0.0021	0%				< 0.00021	< 0.0008
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00080	< 0.00800	< 0.0022	0%				< 0.00019	< 0.00800
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00007	< 0.00070	< 0.003	0%				< 0.00020	< 0.00070
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00017	< 0.0017	< 0.0018	0%				< 0.00024	< 0.0017
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00017	< 0.0001	< 0.001	< 0.0016	0%				< 0.00017	< 0.001
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00009	< 0.0009	< 0.0014	0%				< 0.00028	< 0.0009
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00015	< 0.0015	< 0.0019	0%				< 0.00016	< 0.0015
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00011	< 0.0011	< 0.0015	0%				< 0.00022	< 0.0011
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00009	< 0.0009	< 0.0021	0%				< 0.00018	< 0.0009
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00021	< 0.0001	< 0.001	< 0.0015	0%				0.00057 [J]	< 0.001
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00027	< 0.0027	< 0.0037	0%				< 0.00029	< 0.0027
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00020	< 0.00011	< 0.00110	< 0.0033	0%				< 0.00020	< 0.00110
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.00031 [J]	< 0.00027	0.0043 [J]	< 0.01 [U]	50%	0.004	0.00027	0.01	0.00023 [J]	**0.0087**
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00011	< 0.0011	< 0.002	0%				< 0.00025	< 0.0011
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00006	< 0.00060	< 0.0032	0%				< 0.00020	< 0.00060
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00019	< 0.0001	< 0.001	0.0024 [J]	25%	0.001	0.0001	0.0024	0.002	< 0.001
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.0001	< 0.001	< 0.0023	0%				< 0.00019	< 0.001
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00009	< 0.00090	< 0.0019	0%				< 0.00020	< 0.00090
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00014	< 0.0014	< 0.003	0%				< 0.00024	< 0.0014
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.0001	< 0.001	< 0.0017	0%				< 0.00021	< 0.001

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	W-824D /18/2013	MW-824D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)												
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019		< 0.0021 UJ	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066		< 0.0033 UJ	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	A(MCL,I,DCL),B	***71*** J A(MCL,I,DCL),B	100%	48	31	71
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE		< 0.005 UJ	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23		< 0.00027 UJ	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24		< 0.00016 UJ	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047		< 0.00016 UJ	33%	0.00071	0.00016	0.0012
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE		< 0.00041 UJ	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE		< 0.00038 UJ	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14		< 0.00021 UJ	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE		< 0.00022 UJ	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE		< 0.0003 UJ	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE		< 0.00018 UJ	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047		< 0.00016 UJ	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91		< 0.00014 UJ	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065		< 0.00019 UJ	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36		< 0.00015 UJ	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE		< 0.00021 UJ	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014		0.00024 J	67%	0.001	0.00024	0.001
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016		< 0.00037 UJ	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE		< 0.00033 UJ	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	J A(MCL)	< 0.00043 UJ	67%	0.00312	0.00023	0.0087
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38		< 0.0002 UJ	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045		< 0.00032 UJ	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253		0.0012 J	67%	0.0014	0.001	0.002
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97		< 0.00023 UJ	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076		< 0.00019 UJ	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE		< 0.0003 UJ	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93		< 0.00017 UJ	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-824S 11/1/2012	MW-824S 7/15/2013	MW-824S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-825S 11/1/2012	MW-825S 7/15/2013	MW-825S-Dup 7/15/2013	
VOCs (mg/L)																	
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0017	< 0.002	< 0.0021	0%				< 0.0017	< 0.002	< 0.002	<
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0019	< 0.002	< 0.0033	0%				< 0.0019	< 0.002	< 0.002	<
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	0.0004 J	***1.4*** A(MCL,I,DCL),B	0.0043 J	100%	0.468	0.0004	1.4	**0.024** A(MCL)	**0.047** A(MCL)	**0.046** A(MCL)	
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0050	< 0.0050	< 0.005	0%				< 0.0050	< 0.0050	< 0.0050	<
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00031	< 0.00013	< 0.00027	0%				< 0.00031	< 0.00013	< 0.00013	<
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00018	< 0.00012	< 0.00016	0%				< 0.00018	< 0.00012	< 0.00012	<
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00020	< 0.00012	0.0002 J	33%	0.00017	0.00012	0.0002	< 0.00020	< 0.00012	< 0.00012	<
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00025	< 0.00013	< 0.00041	0%				< 0.00025	< 0.00013	< 0.00013	<
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00027	< 0.00011	< 0.00038	0%				< 0.00027	< 0.00011	< 0.00011	<
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	< 0.00008	< 0.00021	0%				< 0.00021	< 0.00008	< 0.00008	<
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00019	< 0.00080	< 0.00022	0%				< 0.00019	< 0.00080	< 0.00080	<
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00020	< 0.00007	< 0.0003	0%				< 0.00020	< 0.00007	< 0.00007	<
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00024	< 0.00017	< 0.00018	0%				< 0.00024	< 0.00017	< 0.00017	<
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00017	< 0.0001	< 0.00016	0%				0.00059 J	0.00063 J	0.00068 J	
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00028	< 0.00009	< 0.00014	0%				< 0.00028	< 0.00009	< 0.00009	<
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00016	< 0.00015	< 0.00019	0%				< 0.00016	< 0.00015	< 0.00015	<
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00022	< 0.00011	< 0.00015	0%				< 0.00022	< 0.00011	< 0.00011	<
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00018	< 0.00009	< 0.00021	0%				< 0.00018	< 0.00009	< 0.00009	<
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00021	< 0.0001	0.00022 J	33%	0.00018	0.0001	0.00022	0.0012	0.0025	0.0025	
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00029	< 0.00027	< 0.00037	0%				< 0.00029	< 0.00027	< 0.00027	<
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00032 J	< 0.00011	< 0.00033	33%	0.00025	0.00011	0.00033	0.00022 J	< 0.00011	< 0.00011	<
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00014	< 0.00027	< 0.00031	0%	0.00024	0.00014	0.00031	< 0.00014	< 0.00027	< 0.00027	<
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.00025	< 0.00011	< 0.0002	0%				< 0.00025	< 0.00011	< 0.00011	<
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00020	< 0.00006	< 0.00032	0%				< 0.00020	0.00023 J	< 0.00006	<
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00019	< 0.0001	0.00021 J	33%	0.00017	0.0001	0.00021	0.01	0.022	0.022	
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00019	< 0.0001	< 0.00023	0%				< 0.00019	< 0.0001	< 0.0001	<
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00020	< 0.00009	< 0.00019	0%				0.00021 J	< 0.00009	< 0.00009	<
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.00024	< 0.00014	< 0.0003	0%				< 0.00024	< 0.00014	< 0.00014	<
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00021	< 0.0001	< 0.00017	0%				< 0.00021	< 0.0001	< 0.0001	<

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-825S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)											
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	**0.032** A(MCL)	100%	0.03725	0.024	0.047
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.00016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14	0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.00056 [J]	100%	0.000615	0.00056	0.00068
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0.0021 [J]	100%	0.002075	0.0012	0.0025
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00033	25%	0.0001925	0.00011	0.00033
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.00055 [U]	0%	0.0003075	0.00014	0.00055
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	0.00032	25%	0.0002025	0.00006	0.00032
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.015	100%	0.01725	0.01	0.022
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.00019	25%	0.000145	0.00009	0.00021
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-826M 11/2/2012	MW-826M 7/16/2013	MW-826M 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-826S 11/2/2012	MW-826S 7/16/2013	MW-826S 9/14/2017
VOCs (mg/L)																
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0085	< 0.002	< 0.0021 UJ	0%				< 0.0017	< 0.002	< 0.0021
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0095	< 0.002	< 0.0033 UJ	0%				< 0.0019	< 0.002	< 0.0033
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	**0.0094** A(MCL)	**0.0072** A(MCL)	**0.0098** J A(MCL)	100%	0.0088	0.0072	0.0098	< 0.00017	< 0.00008	< 0.00018
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.0250	< 0.0050	< 0.005 UJ	0%				< 0.0050	< 0.0050	< 0.005
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.0016	< 0.00013	< 0.00027 UJ	0%				< 0.00031	< 0.00013	< 0.00027
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.0009	< 0.00012	< 0.00016 UJ	0%				< 0.00018	< 0.00012	< 0.00016
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00100	< 0.00012	< 0.00016 UJ	0%				< 0.00020	< 0.00012	< 0.00016
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.0012	< 0.00013	< 0.00041 UJ	0%				< 0.00025	< 0.00013	< 0.00041
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.0014	< 0.00011	< 0.00038 UJ	0%				< 0.00027	< 0.00011	< 0.00038
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.001	< 0.00008	< 0.00021 UJ	0%				< 0.00021	< 0.00008	< 0.00021
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00095	< 0.00080	< 0.00022 UJ	0%				< 0.00019	< 0.00080	< 0.00022
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.00100	< 0.00007	< 0.0003 UJ	0%				< 0.00020	< 0.00007	< 0.0003
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.0012	< 0.00017	< 0.00018 UJ	0%				< 0.00024	< 0.00017	< 0.00018
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00085	< 0.0001	< 0.00016 UJ	0%				< 0.00017	< 0.0001	< 0.00016
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.0014	< 0.00009	< 0.00014 UJ	0%				< 0.00028	< 0.00009	< 0.00014
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.0008	< 0.00015	< 0.00019 UJ	0%				< 0.00016	< 0.00015	< 0.00019
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.0011	< 0.00011	< 0.00015 UJ	0%				< 0.00022	< 0.00011	< 0.00015
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.0009	< 0.00009	< 0.00021 UJ	0%				< 0.00018	< 0.00009	< 0.00021
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.001	< 0.0001	< 0.00015 UJ	0%				< 0.00021	< 0.0001	< 0.00015
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.0014	< 0.00027	< 0.00037 UJ	0%				< 0.00029	< 0.00027	< 0.00037
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00100	< 0.00011	< 0.00033 UJ	0%				< 0.00020	< 0.00011	< 0.00033
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.0044 J	< 0.00027	< 0.00031 UJ	33%	0.00166	0.00027	0.0044	< 0.00014	< 0.00027	< 0.00031
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.0012	< 0.00011	< 0.0002 UJ	0%				< 0.00025	< 0.00011	< 0.0002
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00100	< 0.00006	< 0.00032 UJ	0%				< 0.00020	< 0.00006	< 0.00032
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00095	< 0.0001	< 0.00015 UJ	0%				< 0.00019	< 0.0001	0.00019 J
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00095	< 0.0001	< 0.00023 UJ	0%				< 0.00019	< 0.0001	< 0.00023
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00100	< 0.00009	< 0.00019 UJ	0%				< 0.00020	< 0.00009	< 0.00019
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.0012	< 0.00014	< 0.0003 UJ	0%				< 0.00024	< 0.00014	< 0.0003
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.001	< 0.0001	< 0.00017 UJ	0%				< 0.00021	< 0.0001	< 0.00017

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	% Detect	Average	Minimum Detected	Maximum Detected	MW-827S 10/31/2012	MW-827S-Dup 10/31/2012	MW-827S 7/16/2013	MW-827S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)																		
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	0%				< 0.0017	< 0.0017	< 0.002	< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	0%				< 0.0019	< 0.0019	< 0.002	< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	0%				0.0016	0.0016	0.0013	0.0015 J	100%	0.0015	0.0013	0.0016
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	0%				< 0.0050	< 0.0050	< 0.0050	< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	0%				< 0.00031	< 0.00031	< 0.00013	< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	0%				< 0.00018	< 0.00018	< 0.00012	< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0%				< 0.00020	< 0.00020	< 0.00012	< 0.00016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	0%				< 0.00025	< 0.00025	< 0.00013	< 0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	0%				< 0.00027	< 0.00027	< 0.00011	< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14	0%				< 0.00021	< 0.00021	< 0.00008	< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	0%				< 0.00019	< 0.00019	< 0.00080	< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	0%				< 0.00020	< 0.00020	< 0.00007	< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	0%				< 0.00024	< 0.00024	< 0.00017	< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0%				< 0.00017	< 0.00017	< 0.0001	< 0.00016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	0%				< 0.00028	< 0.00028	< 0.00009	< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	0%				< 0.00016	< 0.00016	< 0.00015	< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	0%				< 0.00022	< 0.00022	< 0.00011	< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	0%				< 0.00018	< 0.00018	< 0.00009	< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	0%				< 0.00021	< 0.00021	0.0009 J	< 0.00015	25%	0.0004	0.0002	0.0009
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	0%				< 0.00029	< 0.00029	< 0.00027	< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0%				0.00035 J	< 0.00020	< 0.00011	< 0.00033	25%	0.0002	0.0001	0.0004
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0%				< 0.00014	< 0.00014	< 0.00027	< 0.00031	0%			
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	0%				< 0.00025	< 0.00025	< 0.00011	< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	0%				< 0.00020	< 0.00020	< 0.00006	< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	33%	0.00016	0.0001	0.00019	< 0.00019	< 0.00019	< 0.0001	< 0.00015	0%			
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	0%				< 0.00019	< 0.00019	< 0.0001	< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0%				< 0.00020	< 0.00020	< 0.00009	< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	0%				< 0.00024	< 0.00024	< 0.00014	< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	0%				< 0.00021	< 0.00021	< 0.0001	< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-828S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-829S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-830S 9/12/2017	MW
VOCs (mg/L)																		
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0021	0%				< 0.0021	0%				< 0.0021	< 0.0021
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0033	0%				< 0.0033	0%				< 0.0033	< 0.0033
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***40*** A(MCL,I,DCL),B	100%	40	40	40	< 0.0011 U	0%	0.0011	0.0011	0.0011	**0.011** A(MCL)	***0.12***
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.005	0%				< 0.005	0%				< 0.005	< 0.005
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00027	0%				< 0.00027	0%				< 0.00027	< 0.00027
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00016	0%				< 0.00016	0%				< 0.00016	< 0.00016
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.004 J	100%	0.004	0.004	0.004	< 0.00016	0%				< 0.00016	< 0.00016
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00041	0%				< 0.00041	0%				< 0.00041	< 0.00041
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00038	0%				< 0.00038	0%				< 0.00038	< 0.00038
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	0%				< 0.00021	0%				< 0.00021	< 0.00021
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00022	0%				< 0.00022	0%				< 0.00022	< 0.00022
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.0003	0%				< 0.0003	0%				< 0.0003	< 0.0003
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00018	0%				< 0.00018	0%				< 0.00018	< 0.00018
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00016	0%				< 0.00016	0%				< 0.00016	< 0.00016
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00014	0%				< 0.00014	0%				< 0.00014	< 0.00014
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00019	0%				< 0.00019	0%				< 0.00019	< 0.00019
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00015	0%				< 0.00015	0%				< 0.00015	< 0.00015
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00021	0%				< 0.00021	0%				< 0.00021	< 0.00021
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	***0.99*** A(MCL),B	100%	0.99	0.99	0.99	< 0.00015	0%				0.00076 J	0.00071
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00037	0%				< 0.00037	0%				< 0.00037	< 0.00037
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00033	0%				< 0.00033	0%				< 0.00033	< 0.00033
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00031	0%				< 0.00068 U	0%	0.00068	0.00068	0.00068	< 0.00063 U	< 0.00081
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.0002	0%				< 0.0002	0%				< 0.0002	< 0.0002
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00032	0%				< 0.00032	0%				< 0.00032	< 0.00032
Toluene	108-88-3	530	1	8.2	8.2	0.253	***33*** A(MCL,I,DCL),B	100%	33	33	33	< 0.00025 U	0%	0.00025	0.00025	0.00025	0.00063 J	0.00051
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00023	0%				< 0.00023	0%				< 0.00023	< 0.00023
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00019	0%				< 0.00019	0%				< 0.00019	< 0.00019
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.0003	0%				< 0.0003	0%				< 0.0003	< 0.0003
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00017	0%				< 0.00017	0%				< 0.00017	< 0.00017

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	W-830S DUP 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-831S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)																
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019		0%				< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066		0%				< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	A(MCL,I,DCL),B	100%	0.066	0.011	0.12	< 0.00018	0%			
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE		0%				< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23		0%				< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24		0%				< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047		0%				0.00022 [J]	100%	0.00022	0.00022	0.00022
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE		0%				< 0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE		0%				< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14		0%				< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE		0%				< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE		0%				< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE		0%				< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047		0%				0.00054 [J]	100%	0.00054	0.00054	0.00054
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91		0%				< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065		0%				< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36		0%				< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE		0%				< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	[J]	100%	0.00074	0.00071	0.00076	< 0.00015	0%			
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016		0%				< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE		0%				< 0.00033	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	[U]	0%	0.00072	0.00063	0.00081	< 0.00031	0%			
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38		0%				< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045		0%				< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	[J]	100%	0.00057	0.00051	0.00063	< 0.00015	0%			
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97		0%				< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076		0%				< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE		0%				< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93		0%				< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-832D 9/11/2017	MW-832D DUP 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-832S 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	
VOCs (mg/L)																		
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0021 UJ	< 0.0021 UJ	0%				< 0.0021	0%				<
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0033 UJ	< 0.0033 UJ	0%				< 0.0033	0%				<
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***110*** J A(MCL,I,DCL),B	***100*** J A(MCL,I,DCL),B	100%	105	100	110	***0.66*** A(MCL,I,DCL),B	100%	0.66	0.66	0.66	
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.005 UJ	< 0.005 UJ	0%				< 0.005	0%				<
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00027 UJ	< 0.00027 UJ	0%				< 0.00027	0%				<
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00016 UJ	< 0.00016 UJ	0%				< 0.00016	0%				<
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00016 UJ	0.00022 J	50%	0.00019	0.00016	0.00022	< 0.00016	0%				<
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00041 UJ	< 0.00041 UJ	0%				< 0.00041	0%				<
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00038 UJ	< 0.00038 UJ	0%				< 0.00038	0%				<
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021 UJ	< 0.00021 UJ	0%				< 0.00021	0%				<
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00022 UJ	< 0.00022 UJ	0%				< 0.00022	0%				<
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.0003 UJ	< 0.0003 UJ	0%				< 0.0003	0%				<
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00018 UJ	< 0.00018 UJ	0%				< 0.00018	0%				<
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00016 UJ	< 0.00016 UJ	0%				< 0.00016	0%				<
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00014 UJ	< 0.00014 UJ	0%				< 0.00014	0%				<
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00019 UJ	< 0.00019 UJ	0%				< 0.00019	0%				<
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00015 UJ	< 0.00015 UJ	0%				< 0.00015	0%				<
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00021 UJ	< 0.00021 UJ	0%				< 0.00021	0%				<
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00015 UJ	< 0.00015 UJ	0%				< 0.00015	0%				
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00037 UJ	< 0.00037 UJ	0%				< 0.00037	0%				<
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00033 UJ	< 0.00033 UJ	0%				< 0.00033	0%				<
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00038 UJ	< 0.00085 UJ	0%	0.00062	0.00038	0.00085	< 0.001 U	0%	0.001	0.001	0.001	
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.0002 UJ	< 0.0002 UJ	0%				< 0.0002	0%				<
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00032 UJ	< 0.00032 UJ	0%				< 0.00032	0%				<
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.0014 J	0.0013 J	100%	0.00135	0.00130	0.00140	< 0.00015	0%				
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00023 UJ	< 0.00023 UJ	0%				< 0.00023	0%				<
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00019 UJ	< 0.00019 UJ	0%				< 0.00019	0%				<
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.0003 UJ	< 0.0003 UJ	0%				< 0.0003	0%				<
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00017 UJ	< 0.00017 UJ	0%				< 0.00017	0%				<

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-833S 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-834D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)																
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	0.0021	0%				< 0.0021	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	0.0033	0%				< 0.0033	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	***0.16*** A(MCL,I,DCL),B	100%	0.16	0.16	0.16	0.00026 [J]	100%	0.00026	0.00026	0.00026
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	0.005	0%				< 0.005	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	0.00027 [UJ]	0%				< 0.00027	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	0.00016	0%				< 0.00016	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	0.00016	0%				< 0.00016	0%			
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	0.00041	0%				< 0.00041	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	0.00038	0%				< 0.00038	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14	0.00021	0%				< 0.00021	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	0.00022	0%				< 0.00022	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	0.0003	0%				< 0.0003	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	0.00018	0%				< 0.00018	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	0.00016	0%				< 0.00016	0%			
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	0.00014	0%				< 0.00014	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	0.00019	0%				< 0.00019	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	0.00015	0%				< 0.00015	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	0.00021	0%				< 0.00021	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	***0.7*** A(MCL),B	100%	0.7	0.7	0.7	< 0.00015	0%			
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	0.00037	0%				< 0.00037	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	0.00033	0%				< 0.00033	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	0.00051 [U]	0%	0.00051	0.00051	0.00051	< 0.00031	0%			
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	0.0002	0%				< 0.0002	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	0.00032	0%				< 0.00032	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	***1.3*** A(MCL),B	100%	1.3	1.3	1.3	< 0.00015	0%			
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	0.00023	0%				< 0.00023	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.00019	0%				< 0.00019	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	0.0003	0%				< 0.0003	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	0.00017	0%				< 0.00017	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-835D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-836S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-837S 9/13/2017	MW-837S DUP 9/13/2017	% Detect	Average	Minimum Detected
VOCs (mg/L)																					
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019	< 0.0021	0%				< 0.0021	0%				< 0.0021	< 0.0021	0%		
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066	< 0.0033	0%				< 0.0033	0%				< 0.0033	< 0.0033	0%		
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	< 0.00018	0%				0.001 J	100%	0.001	0.001	0.001	0.0010 J	0.0011 J	100%	0.0011	0.0010
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE	< 0.005	0%				< 0.005	0%				< 0.005	< 0.005	0%		
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23	< 0.00027	0%				< 0.00027	0%				< 0.00027	< 0.00027	0%		
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24	< 0.00016	0%				< 0.00016	0%				< 0.00016	< 0.00016	0%		
Chlorobenzene	108-90-7	470	0.1	2	2	0.047	< 0.00016	0%				< 0.00016	0%				< 0.00016	< 0.00016	0%		
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE	< 0.00041	0%				< 0.00041	0%				< 0.00041	< 0.00041	0%		
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE	< 0.00038	0%				< 0.00038	0%				< 0.00038	< 0.00038	0%		
Chloroform	67-66-3	7,900	0.08	1	1	0.14	< 0.00021	0%				< 0.00021	0%				< 0.00021	< 0.00021	0%		
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE	< 0.00022	0%				< 0.00022	0%				< 0.00022	< 0.00022	0%		
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE	< 0.0003	0%				< 0.0003	0%				< 0.0003	< 0.0003	0%		
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE	< 0.00018	0%				< 0.00018	0%				< 0.00018	< 0.00018	0%		
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047	< 0.00016	0%				0.0003 J	100%	0.0003	0.0003	0.0003	< 0.00016	< 0.00016	0%		
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91	< 0.00014	0%				< 0.00014	0%				< 0.00014	< 0.00014	0%		
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065	< 0.00019	0%				< 0.00019	0%				< 0.00019	< 0.00019	0%		
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36	< 0.00015	0%				< 0.00015	0%				< 0.00015	< 0.00015	0%		
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE	< 0.00021	0%				< 0.00021	0%				< 0.00021	< 0.00021	0%		
Ethylbenzene	100-41-4	170	0.7	10	10	0.014	< 0.00015	0%				< 0.00015	0%				< 0.00015	< 0.00015	0%		
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016	< 0.00037	0%				< 0.00037	0%				< 0.00037	< 0.00037	0%		
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE	< 0.00033	0%				< 0.00033	0%				< 0.00033 UJ	< 0.00033 UJ	0%		
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94	< 0.00031	0%				< 0.00031	0%				< 0.00031	< 0.00031	0%		
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38	< 0.0002	0%				< 0.0002	0%				< 0.0002	< 0.0002	0%		
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045	< 0.00032	0%				< 0.00032	0%				< 0.00032	< 0.00032	0%		
Toluene	108-88-3	530	1	8.2	8.2	0.253	< 0.00015	0%				0.001 J	100%	0.001	0.001	0.001	0.0004 J	0.0004 J	100%	0.0004	0.0004
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97	< 0.00023	0%				< 0.00023	0%				< 0.00023	< 0.00023	0%		
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	< 0.00019	0%				0.00025 J	100%	0.00025	0.00025	0.00025	0.00041 J	0.00043 J	100%	0.00042	0.00041
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE	< 0.0003	0%				< 0.0003	0%				< 0.0003	< 0.0003	0%		
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93	< 0.00017	0%				< 0.00017	0%				< 0.00017	< 0.00017	0%		

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4A
Groundwater Sample Laboratory Results - VOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected	MW-838S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-839S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
VOCs (mg/L)																	
Acrolein	107-02-8	210,000	NE	0.051	0.051	0.00019		< 0.0021	0%				< 0.0021 UJ	0%			
Acrylonitrile	107-13-1	NE	NE	NE	NE	0.066		< 0.0033	0%				< 0.0033 UJ	0%			
Benzene	71-43-2	1,800	0.005	0.052	0.052	0.114	0.0011	***54*** A(MCL,I,DCL),B	100%	54	54	54	***0.12*** J A(MCL,I,DCL),B	100%	0.12	0.12	0.12
Bis(chloromethyl)ether [TIC]	542-88-1	NE	NE	NE	NE	NE		< 0.005	0%				< 0.005 UJ	0%			
Bromoform	75-25-2	3,100	0.08	0.36	0.36	0.23		< 0.00027	0%				< 0.00027 UJ	0%			
Carbon tetrachloride	56-23-5	790	0.005	0.022	0.022	0.24		< 0.00016	0%				< 0.00016 UJ	0%			
Chlorobenzene	108-90-7	470	0.1	2	2	0.047		0.0087	100%	0.0087	0.0087	0.0087	0.00023 J	100%	0.00023	0.00023	0.00023
Chloroethane	75-0-3	5,700	NE	0.99	0.99	NE		< 0.00041	0%				< 0.00041 UJ	0%			
2-Chloroethyl vinyl ether	110-75-8	NE	NE	NE	NE	NE		< 0.00038	0%				< 0.00038 UJ	0%			
Chloroform	67-66-3	7,900	0.08	1	1	0.14		< 0.00021	0%				< 0.00021 UJ	0%			
Dibromochloromethane	124-48-1	NE	NE	NE	NE	NE		< 0.00022	0%				< 0.00022 UJ	0%			
Dichlorobromomethane[C]	75-27-4	6,700	0.08	0.046	0.08	NE		< 0.0003	0%				< 0.0003 UJ	0%			
Dichlorodifluoromethane	75-71-8	NE	NE	NE	NE	NE		< 0.00018	0%				< 0.00018 UJ	0%			
1,1-Dichloroethane	75-34-3	5,100	NE	10	10	0.047		< 0.00016	0%				0.00038 J	100%	0.00038	0.00038	0.00038
1,2-Dichloroethane	107-6-2	8,500	0.005	0.031	0.031	0.91		< 0.00014	0%				< 0.00014 UJ	0%			
1,1-Dichloroethene	75-35-4	2,300	0.007	5.1	5.1	0.065		< 0.00019	0%				< 0.00019 UJ	0%			
1,2-Dichloropropane	75-87-5	2,800	0.005	0.042	0.042	0.36		< 0.00015	0%				< 0.00015 UJ	0%			
1,3-Dichloropropane	142-28-9	NE	NE	NE	NE	NE		< 0.00021	0%				< 0.00021 UJ	0%			
Ethylbenzene	100-41-4	170	0.7	10	10	0.014		*0.64* B	100%	0.64	0.64	0.64	*0.023* J B	100%	0.023	0.023	0.023
Methyl Bromide (Bromomethane)	74-83-9	15,000	NE	0.14	0.14	0.016		< 0.00037	0%				< 0.00037 UJ	0%			
Methyl Chloride (Chloromethane)	74-87-3	NE	NE	NE	NE	NE		< 0.00033	0%				< 0.00033 UJ	0%			
Methylene chloride	75-9-2	13,000	0.005	0.38	0.38	0.94		< 0.00031	0%				< 0.00031 UJ	0%			
1,1,2,2-Tetrachloroethane	79-34-5	3,000	NE	0.014	0.014	0.38		< 0.0002	0%				< 0.0002 UJ	0%			
Tetrachloroethene	127-18-4	200	0.005	0.055	0.055	0.045		< 0.00032	0%				< 0.00032 UJ	0%			
Toluene	108-88-3	530	1	8.2	8.2	0.253	0.0004	0.027	100%	0.027	0.027	0.027	0.0055 J	100%	0.0055	0.0055	0.0055
trans-1,2-Dichloroethene	156-60-5	6,300	0.1	2	2	0.97		< 0.00023	0%				< 0.00023 UJ	0%			
1,1,1-Trichloroethane	74-55-6	1,300	0.2	29	29	0.076	0.00043	< 0.00019	0%				< 0.00019 UJ	0%			
Trichlorofluoromethane	75-69-4	1,100	NE	31	31	NE		< 0.0003	0%				< 0.0003 UJ	0%			
Vinyl chloride	75-1-4	2,800	0.002	0.004	0.004	0.93		< 0.00017	0%				< 0.00017 UJ	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] Dibromochloromethane = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-801D 10/29/2012	MW-801D Dup 10/29/2012	MW-801D 7/16/2013	MW-801D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-801S 10/29/2012	MW-801S 7/16/2013	MW-801S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																					
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.000029 J	0.00004 J	< 0.000016	< 0.00004	50%	0.00003125	0.000016	0.00004	0.019	0.011	0.023	100%	0.0177	0.0110	0.0230
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	< 0.000013	< 0.000013	< 0.000014	0.000031 J	25%	0.00001775	0.000013	0.000031	0.02	0.011	0.019	100%	0.0167	0.0110	0.0200
Anthracene	120-12-7	0.043	NE	31	31	0.000035	< 0.000015	< 0.000015	< 0.000016	0.000031 J	25%	0.00001925	0.000015	0.000031	*0.0013* B	*0.0014* J B	*0.0013* J B	100%	0.0013	0.0013	0.0014
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	< 0.000015	< 0.000015	< 0.000016	0.000021 J	25%	0.00001675	0.000015	0.000021	*0.00022* B	*0.00022* J B	*0.0003* J B	100%	0.0002	0.0002	0.0003
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.0000099	< 0.0000099	< 0.000011	< 0.000023	0%				*0.000043* J B	*0.00012* J B	< 0.00022	67%	0.0001	0.0000	0.0002
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	< 0.0000099	< 0.0000099	< 0.000011	< 0.00002	0%				0.0001	0.00014 J	< 0.00019	67%	0.0001	0.0001	0.0002
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	< 0.000013	< 0.000014	< 0.000011	0%				< 0.000013	< 0.00014	< 0.00011	0%			
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.000016	< 0.000018	< 0.000016	0%				0.000034 J	< 0.00017	< 0.00016	33%	0.0001	0.0000	0.0002
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	< 0.000013	< 0.000014	< 0.00002	0%				0.00016 J	< 0.00014	< 0.00019	33%	0.0002	0.0001	0.0002
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000015	< 0.000016	< 0.000014	0%				< 0.000015	< 0.00016	< 0.00014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	< 0.0000099	< 0.0000099	0.000012 J	< 0.000023	25%	0.0000137	0.0000099	0.000023	*0.0031* B	*0.0026* J B	*0.003* J B	100%	0.0029	0.0026	0.0031
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	< 0.0000099	0.000011 J	0.000013 J	< 0.00021	50%	0.000060975	0.0000099	0.00021	0.008	0.0092	*0.012*	100%	0.0097	0.0080	0.0120
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.000013	< 0.000014	< 0.000011	0%				< 0.000013	< 0.00014	< 0.00011	0%			
Naphthalene	91-20-3	31	NE	2	2	0.013	0.000074 J	0.000072 J	0.000085 J	0.00043 J	100%	0.00016525	0.000072	0.00043	*0.37* B	*0.2* B	*0.29* B	100%	0.2867	0.2000	0.3700
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000025 J	0.000026 J	0.000036 J	< 0.00012	75%	0.00003225	0.000025	0.000042	*0.0049* B	*0.0058* B	*0.0047* J B	100%	0.0051	0.0047	0.0058
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	< 0.000019	< 0.000019	< 0.000021	0.000021 J	25%	0.00002	0.000019	0.000021	*0.0025* B	*0.0019* J B	*0.0016* J B	100%	0.0020	0.0016	0.0025
SVOCs (mg/L)																					
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00040	< 0.00044	< 0.00061	0%				< 0.00040	< 0.00043	< 0.006	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.00059	< 0.00044	< 0.00075	0%				< 0.00061	< 0.00043	< 0.0074	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00030	< 0.00088	< 0.00065	0%				< 0.00030	< 0.00086	< 0.0064	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00050	< 0.00055	< 0.00064	0%				< 0.00051	< 0.00054	< 0.0063	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00040	< 0.00088	< 0.00076	0%				< 0.00040	< 0.00086	< 0.0075	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.00069	< 0.00077	< 0.00063	0%				< 0.00071	< 0.00075	< 0.0062	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00099	< 0.00099	< 0.00044	< 0.0007	0%				0.0056 J	0.004 J	< 0.0069	67%	0.0055	0.0040	0.0069
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.0014	< 0.00031	0%				< 0.0013	< 0.0014	< 0.003	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00050	< 0.00088	< 0.00048	0%				< 0.00051	< 0.00086	< 0.0047	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00050	< 0.00088	< 0.00059	0%				< 0.00051	< 0.00086	< 0.0058	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00050	< 0.00044	< 0.00073	0%				< 0.00051	< 0.00043	< 0.0072	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.00059	< 0.00055	< 0.00074	0%				< 0.00061	< 0.00054	< 0.0073	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.00059	< 0.00099	< 0.00094	0%				< 0.00061	< 0.00097	< 0.0092	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.00089	< 0.00066	< 0.0013	0%				< 0.00091	< 0.00065	< 0.013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00050	< 0.00077	< 0.00035	0%				< 0.00051	< 0.00075	< 0.0034	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00050	< 0.00066	< 0.00069	0%				< 0.00051	< 0.00065	< 0.0068	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00050	< 0.00066	< 0.00071	0%				< 0.00051	< 0.00065	< 0.007	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0020	< 0.0009	< 0.00086	0%				< 0.0020	< 0.0009	< 0.0084	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.0023	< 0.00022	< 0.052	0%				< 0.0023	< 0.00022	< 0.51	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00059	< 0.00066	< 0.00088	0%				< 0.00061	< 0.00065	< 0.0086	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.00099	< 0.00044	< 0.00079	0%				< 0.001	< 0.00043	< 0.0078	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00059	< 0.00044	< 0.0007	0%				< 0.00061	< 0.00043	< 0.0069	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	< 0.00040	< 0.00040	< 0.00099	< 0.0012	0%				< 0.00040	< 0.00097	< 0.012	0%			
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.00059	< 0.0018	< 0.00094	0%				< 0.00061	< 0.0017	< 0.0092	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00040	< 0.00077	< 0.0013	0%				< 0.00040	< 0.00075	< 0.013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00040	< 0.00077	< 0.0007	0%				< 0.00040	< 0.00075	< 0.0069	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.00073 J	0.00086 J	< 0.00099	< 0.00085	50%	0.0008575	0.00073	0.00099	< 0.0004	< 0.00097	< 0.0083	0%			
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.00059	< 0.0012	< 0.00072	0%				< 0.00061	< 0.0012	< 0.0071	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00050	< 0.00110	< 0.00099	0%				< 0.00051	< 0.00110	< 0.0097	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.00059	< 0.00077	< 0.00099	0%				< 0.00061	< 0.00075	< 0.0097	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00050	< 0.00066	< 0.00041	0%				< 0.00051	< 0.00065	< 0.004	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.00059	< 0.00066	< 0.001	0%				< 0.00061	< 0.00065	< 0.01	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.00059	< 0.00066	< 0.00082	0%				< 0.00061	< 0.00065	< 0.0081	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.00059	< 0.00044	< 0.00081	0%				< 0.00061	< 0.00043	< 0.008	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.00099	< 0.0023	< 0.00094	0%				< 0.001	< 0.0023	< 0.0092	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.00059	< 0.00033	< 0.001	0%				< 0.00061	< 0.00032	< 0.01	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00040	< 0.00055	< 0.00074	0%				< 0.00040	< 0.00054	< 0.0073	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.00059	< 0.00066	< 0.00078	0%				< 0.00061	< 0.00065	< 0.0077	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00069	< 0.00069	< 0.00066	< 0.00032	0%				**0.0016** J A(MCL)	0.00086 J	< 0.0031	67%	0.0019	0.0009	0.0031
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00040	< 0.00040	< 0.00033	< 0.00038	0%				0.01300	0.01300	0.021 J	100%	0.0157	0.0130	0.0210

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
J Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
U Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.
J+ Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
J- Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
UJ Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-802S 10/31/2012	MW-802S-Dup 10/31/2012	MW-802S 7/16/2013	% Detect	Average	Minimum Detected	Maximum Detected	MW-803D 10/31/2012	MW-803D 7/17/2013	MW-803D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.000043 J	0.00003 J	0.000043 J	100%	0.000039	0.00003	0.000043	0.00054 J	0.00042 J	0.000084 J	100%	0.00035	0.000084	0.00054
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.000046 J	0.000038 J	0.000039 J	100%	0.000041	0.000038	0.000046	0.0006	0.00025 J	0.00041 J	100%	0.00042	0.00025	0.0006
Anthracene	120-12-7	0.043	NE	31	31	0.000035	0.000031 J	0.000024 J	0.000027 J	100%	0.000027	0.000024	0.000031	*0.00015* J B	*0.000088* J B	*0.00025* J B	100%	0.00016	0.000088	0.00025
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	< 0.000015	0.000021 J	< 0.000015	33%	0.000017	0.000015	0.000021	*0.000033* J B	*0.000028* J B	*0.000032* J B	100%	0.00003	0.000028	0.000033
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.0000099	< 0.00001	< 0.0000098	0%				< 0.000012	*0.000024* J B	< 0.000023	33%	0.00002	0.000012	0.000024
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000011 J	0.000011 J	< 0.0000098	67%	0.000011	0.0000098	0.000011	0.000024 J	0.000025 J	< 0.00002	67%	0.00002	0.00002	0.000025
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	< 0.000013	0.000013 J	33%	0.000013	0.000013	0.000013	< 0.000015	0.000023 J	< 0.000012	33%	0.00002	0.000012	0.000023
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.000016	< 0.000016	0%				< 0.000019	0.000017 J	< 0.000017	33%	0.00002	0.000017	0.000019
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	< 0.000013	< 0.000013	0%				0.00004 J	0.000021 J	< 0.00002	67%	0.00003	0.00002	0.00004
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000015	< 0.000015	0%				< 0.000018	0.00002 J	< 0.000015	33%	0.00002	0.000015	0.00002
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	< 0.0000099	< 0.00001	0.000014 J	33%	0.000011	0.0000099	0.000014	0.00016 J	0.00012 J	0.000042 J	100%	0.00011	0.000042	0.00016
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.000027 J	0.000026 J	< 0.0000098	67%	0.000021	0.0000098	0.000027	0.00021 J	0.0002 J	< 0.00021	67%	0.00021	0.0002	0.00021
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.000013	< 0.000013	0%				< 0.000015	**0.000023** A(GW)	< 0.000012	33%	0.00002	0.000012	0.000023
Naphthalene	91-20-3	31	NE	2	2	0.013	0.00009 J	0.0001 J	0.00014 J	100%	0.000110	0.00009	0.00014	0.0096	0.006	0.0019	100%	0.00583	0.0019	0.0096
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	< 0.000013	< 0.000013	0.000039 J	33%	0.000022	0.000013	0.000039	0.00027 J	0.00027 J	0.000074 J	100%	0.00020	0.000074	0.00027
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	< 0.000019	< 0.000019	0.000025 J	33%	0.000021	0.000019	0.000025	0.000074 J	0.000073 J	0.000032 J	100%	0.00006	0.000032	0.000074
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00040	< 0.00039	0%				< 0.00048	< 0.00042	< 0.00062	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.0006	< 0.00039	0%				< 0.00071	< 0.00042	< 0.00077	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00030	< 0.00078	0%				< 0.00036	< 0.00084	< 0.00066	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00050	< 0.00049	0%				< 0.00060	< 0.00053	< 0.00065	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00040	< 0.00078	0%				< 0.00048	< 0.00084	< 0.00078	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.0007	< 0.00069	0%				< 0.00083	< 0.00074	< 0.00064	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00099	< 0.001	< 0.00039	0%				< 0.0012	< 0.00042	< 0.00072	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.0013	0%				< 0.0015	< 0.0014	< 0.00032	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00050	< 0.00078	0%				< 0.00060	< 0.00084	< 0.00049	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00050	< 0.00078	0%				< 0.00060	< 0.00084	< 0.0006	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00050	< 0.00039	0%				< 0.00060	< 0.00042	< 0.00075	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.0006	< 0.00049	0%				< 0.00071	< 0.00053	< 0.00076	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.0006	< 0.00088	0%				< 0.00071	< 0.00095	< 0.00096	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.0009	< 0.00059	0%				< 0.0011	< 0.00063	< 0.0014	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00050	< 0.00069	0%				< 0.00060	< 0.00074	< 0.00036	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00050	< 0.00059	0%				< 0.00060	< 0.00063	< 0.00071	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00050	< 0.00059	0%				< 0.00060	< 0.00063	< 0.00073	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0020	< 0.0008	0%				< 0.0024	< 0.0008	< 0.00087	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.0023	< 0.0002	0%				< 0.0027	< 0.00021	< 0.053	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00059	< 0.0006	< 0.00059	0%				< 0.00071	< 0.00063	< 0.00089	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.001	< 0.00039	0%				< 0.0012	< 0.00042	< 0.00081	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.0006	< 0.00039	0%				< 0.00071	< 0.00042	< 0.00072	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	< 0.00040	*0.00077* J B	< 0.00088	33%	0.0007	0.0004	0.00088	*0.00150* J B	< 0.00095	< 0.0013	33%	0.00125	0.00095	0.0015
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.0006	< 0.0016	0%				< 0.00071	< 0.0017	< 0.00096	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00040	< 0.00069	0%				< 0.00048	< 0.00074	< 0.0014	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00040	< 0.00069	0%				< 0.00048	< 0.00074	< 0.00072	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0019 J	0.002 J	< 0.00088	67%	0.0016	0.00088	0.002	0.0048 J	0.0083 J	< 0.00086	67%	0.00465	0.00086	0.0083
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.0006	< 0.0011	0%				< 0.00071	< 0.0012	< 0.00074	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00050	< 0.00098	0%				< 0.00060	< 0.00110	< 0.001	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.0006	< 0.00069	0%				< 0.00071	< 0.00074	< 0.001	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00050	< 0.00059	0%				< 0.00060	< 0.00063	< 0.00042	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.0006	< 0.00059	0%				< 0.00071	< 0.00063	< 0.0011	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.0006	< 0.00059	0%				< 0.00071	< 0.00063	< 0.00084	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.0006	< 0.00039	0%				< 0.00071	< 0.00042	< 0.00083	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.001	< 0.0021	0%				< 0.0012	< 0.0022	< 0.00096	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.0006	< 0.00029	0%				< 0.00071	< 0.00032	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00040	< 0.00049	0%				< 0.00048	< 0.00053	< 0.00076	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.0006	< 0.00059	0%				< 0.00071	< 0.00063	< 0.0008	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00069	< 0.0007	< 0.00059	0%				< 0.00083	< 0.00063	< 0.00033	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00040	< 0.00040	0.00250 J	33%	0.0011	0.0004	0.0025	< 0.00048	< 0.00032	< 0.00039	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
J Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
U Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
J+ Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
J- Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
UJ Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-803M 10/31/2012	MW-803M 7/17/2013	MW-803M 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-803S 10/31/2012	MW-803S 7/17/2013	MW-803S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.035	< 0.000015	0.0052 J	67%	0.01341	0.000015	0.035	0.026	0.017	0.036	100%	0.02633	0.017	0.036
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.0026	0.000023 J	0.00053 J	100%	0.00105	0.000023	0.0026	0.0023	0.0029	0.0031	100%	0.00277	0.0023	0.0031
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.00016* J B	*0.00013* J B	< 0.00015	67%	0.00015	0.00013	0.00016	*0.00021* J B	*0.00016* J B	*0.00032* J B	100%	0.00023	0.00016	0.00032
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.000018 J	< 0.000015	< 0.00012	33%	0.00005	0.000015	0.00012	*0.000028* J B	0.000015 J	*0.000041* J B	100%	0.00003	0.000015	0.000041
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.00001	0.000011 J	< 0.00023	33%	0.00008	0.00001	0.00023	< 0.000011	< 0.0000098	< 0.000023	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000012 J	< 0.00001	< 0.0002	33%	0.00007	0.00001	0.0002	0.000014 J	< 0.0000098	< 0.00002	33%	0.00001	0.0000098	0.00002
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	< 0.000013	< 0.00012	0%				< 0.000014	< 0.000013	< 0.000011	0%			
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.000016	< 0.00017	0%				< 0.000017	< 0.000016	< 0.000016	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	< 0.000013	< 0.0002	0%				< 0.000014	< 0.000013	< 0.00002	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000015	< 0.00015	0%				< 0.000016	< 0.000015	< 0.000014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	< 0.00001	< 0.00001	< 0.00023	0%				< 0.000011	0.00002 J	0.000041 J	67%	0.00002	0.000011	0.000041
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.00056	0.000012 J	< 0.0021	67%	0.00089	0.000012	0.0021	0.0052	0.0051	0.0025	100%	0.00427	0.0025	0.0052
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.000013	< 0.00012	0%				< 0.000014	< 0.000013	< 0.000011	0%			
Naphthalene	91-20-3	31	NE	2	2	0.013	*1.6* B	*1.1* B	*0.58* B	100%	1.09333	0.58	1.6	0.00084	0.0035	0.00081	100%	0.00172	0.00081	0.0035
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000043 J	0.000065 J	< 0.00043	67%	0.00018	0.000043	0.00043	0.000067 J	0.00011 J	0.000093 J	100%	0.00009	0.000067	0.00011
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	< 0.000019	< 0.000019	< 0.00017	0%				< 0.00002	0.000021 J	0.000031 J	67%	0.00002	0.00002	0.000031
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00041	< 0.00062	0%				< 0.00042	< 0.00039	< 0.00061	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.0006	< 0.00041	< 0.00077	0%				< 0.00063	< 0.00039	< 0.00075	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00082	< 0.00066	0%				< 0.00032	< 0.00078	< 0.00065	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00051	< 0.00065	0%				< 0.00053	< 0.00049	< 0.00064	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00082	< 0.00078	0%				< 0.00042	< 0.00078	< 0.00076	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.0007	< 0.00071	< 0.00064	0%				< 0.00074	< 0.00069	< 0.00063	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	0.061	0.041	< 0.00072	67%	0.03424	0.00072	0.061	< 0.0011	< 0.00039	< 0.0007	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.00032	0%				< 0.0014	< 0.0013	< 0.00031	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00082	< 0.00049	0%				< 0.00053	< 0.00078	< 0.00048	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00082	< 0.0006	0%				< 0.00053	< 0.00078	< 0.00059	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00041	< 0.00075	0%				< 0.00053	< 0.00039	< 0.00073	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.0006	< 0.00051	< 0.00076	0%				< 0.00063	< 0.00049	< 0.00074	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.0006	< 0.00092	< 0.00096	0%				< 0.00063	< 0.00088	< 0.00094	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.0009	< 0.00061	< 0.0014	0%				< 0.00095	< 0.00059	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00071	< 0.00036	0%				< 0.00053	< 0.00069	< 0.00035	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00061	< 0.00071	0%				< 0.00053	< 0.00059	< 0.00069	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00061	< 0.00073	0%				< 0.00053	< 0.00059	< 0.00071	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0008	< 0.00087	0%				< 0.0021	< 0.0008	< 0.00086	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.0002	< 0.053	0%				< 0.0024	< 0.0002	< 0.052	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.0006	< 0.00061	< 0.00089	0%				< 0.00063	< 0.00059	< 0.00088	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.00041	< 0.00081	0%				< 0.0011	< 0.00039	< 0.00079	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.0006	< 0.00041	< 0.00072	0%				< 0.00063	< 0.00039	< 0.0007	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	< 0.00040	< 0.00092	< 0.0013	0%				*0.00084* J B	< 0.00088	< 0.0012	33%	0.00097	0.00084	0.0012
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.0006	< 0.0016	< 0.00096	0%				< 0.00063	< 0.0016	< 0.00094	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00071	< 0.0014	0%				< 0.00042	< 0.00069	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00071	< 0.00072	0%				< 0.00042	< 0.00069	< 0.0007	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0021 J	0.0053 J	< 0.00086	67%	0.00275	0.00086	0.0053	0.0025 J	0.0057 J	< 0.00085	67%	0.00302	0.00085	0.0057
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.0006	< 0.0011	< 0.00074	0%				< 0.00063	< 0.0011	< 0.00072	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00100	< 0.001	0%				< 0.00053	< 0.00098	< 0.00099	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.0006	< 0.00071	< 0.001	0%				< 0.00063	< 0.00069	< 0.00099	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00061	< 0.00042	0%				< 0.00053	< 0.00059	< 0.00041	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.0006	< 0.00061	< 0.0011	0%				< 0.00063	< 0.00059	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.0006	< 0.00061	< 0.00084	0%				< 0.00063	< 0.00059	< 0.00082	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.0006	< 0.00041	< 0.00083	0%				< 0.00063	< 0.00039	< 0.00081	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0021	< 0.00096	0%				< 0.0011	< 0.0021	< 0.00094	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.0006	< 0.00031	< 0.001	0%				< 0.00063	< 0.00029	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00051	< 0.00076	0%				< 0.00042	< 0.00049	< 0.00074	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.0006	< 0.00061	< 0.0008	0%				< 0.00063	< 0.00059	< 0.00078	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.0007	< 0.00061	< 0.00033	0%				< 0.00074	< 0.00059	< 0.00032	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.00460 J	0.01300	0.0018 J	100%	0.00647	0.0018	0.013	0.00430 J	0.01700	0.0093 J	100%	0.01020	0.0043	0.017

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
J Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
U Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
J+ Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
J- Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
UJ Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-804S 10/29/2012	MW-804S 7/16/2013	MW-804S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-805D 10/31/2012	MW-805D 7/16/2013	MW-805D-Dup 7/16/2013	MW-805D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																					
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	< 0.000015	0.000034 J	< 0.000039	33%	0.00003	0.000015	0.000039	< 0.000016	0.000053 J	0.00013 J	< 0.000039	50%	0.000060	0.000016	0.00013
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00002 J	0.000015 J	< 0.000014	67%	0.00002	0.000014	0.00002	< 0.000014	0.000047 J	0.00012 J	0.00003 J	75%	0.000053	0.000014	0.00012
Anthracene	120-12-7	0.043	NE	31	31	0.000035	< 0.000015	< 0.000016	0.00002 J	33%	0.00002	0.000015	0.00002	0.000017 J	0.000022 J	*0.000045* J B	0.00003 J	100%	0.000029	0.000017	0.000045
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.000018 J	< 0.000016	< 0.000011	33%	0.00002	0.000011	0.000018	< 0.000016	< 0.000015	< 0.000015	0.00002 J	25%	0.000017	0.000015	0.00002
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.00001	< 0.000011	< 0.000022	0%				< 0.000011	< 0.0000098	< 0.0000098	< 0.000022	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000017 J	< 0.000011	< 0.000019	33%	0.00002	0.000011	0.000019	0.000013 J	< 0.0000098	< 0.0000098	< 0.000019	25%	0.000013	0.0000098	0.000019
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	< 0.000014	< 0.000011	0%				< 0.000014	0.000015 J	< 0.000013	< 0.000011	25%	0.000013	0.000011	0.000015
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.000017	< 0.000016	0%				< 0.000017	< 0.000016	< 0.000016	< 0.000016	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	< 0.000014	< 0.000019	0%				< 0.000014	< 0.000013	< 0.000013	< 0.000019	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000016	< 0.000014	0%				< 0.000016	< 0.000015	< 0.000015	< 0.000014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	< 0.00001	0.000014 J	< 0.000022	33%	0.00002	0.00001	0.000022	< 0.000011	0.000012 J	0.000013 J	< 0.000022	50%	0.000015	0.000011	0.000022
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.000014 J	0.000017 J	< 0.0002	67%	0.00008	0.000014	0.0002	< 0.000011	0.000011 J	0.000013 J	< 0.0002	50%	0.000059	0.000011	0.0002
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.000014	< 0.000011	0%				< 0.000014	< 0.000013	< 0.000013	< 0.000011	0%			
Naphthalene	91-20-3	31	NE	2	2	0.013	0.00018 J	0.00017 J	< 0.00016 U	67%	0.00017	0.00016	0.00018	0.000047 J	0.000066 J	0.00015 J	0.0021	100%	0.000591	0.000047	0.0021
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000033 J	0.000033 J	< 0.000041	67%	0.00004	0.000033	0.000041	< 0.000014	0.000035 J	0.000043 J	< 0.000041	50%	0.000033	0.000014	0.000043
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	< 0.000019	< 0.000021	< 0.000016	0%				< 0.00002	0.000022 J	0.00005 J	< 0.000016	50%	0.000027	0.000016	0.00005
SVOCs (mg/L)																					
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00043	< 0.00059	0%				< 0.00042	< 0.00039	< 0.00039	< 0.0006	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.0006	< 0.00043	< 0.00073	0%				< 0.00063	< 0.00039	< 0.00039	< 0.00074	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00087	< 0.00063	0%				< 0.00032	< 0.00078	< 0.00078	< 0.00064	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00054	< 0.00062	0%				< 0.00053	< 0.00049	< 0.00049	< 0.00063	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00087	< 0.00074	0%				< 0.00042	< 0.00078	< 0.00078	< 0.00075	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.0007	< 0.00076	< 0.00061	0%				< 0.00074	< 0.00069	< 0.00069	< 0.00062	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.001	< 0.00043	< 0.00068	0%				0.0012 J	< 0.00039	0.0011 J	0.0021 J	75%	0.001198	0.00039	0.0021
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0014	< 0.0003	0%				< 0.0014	< 0.0013	< 0.0013	< 0.0003	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00087	< 0.00047	0%				< 0.00053	< 0.00078	< 0.00078	< 0.00047	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00087	< 0.00057	0%				< 0.00053	< 0.00078	< 0.00078	< 0.00058	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00043	< 0.00071	0%				< 0.00053	< 0.00039	< 0.00039	< 0.00072	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.0006	< 0.00054	< 0.00072	0%				< 0.00063	< 0.00049	< 0.00049	< 0.00073	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.0006	< 0.00098	< 0.00091	0%				< 0.00063	< 0.00088	< 0.00088	< 0.00092	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.0009	< 0.00065	< 0.0013	0%				< 0.00095	< 0.00059	< 0.00059	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00076	< 0.00034	0%				< 0.00053	< 0.00069	< 0.00069	< 0.00034	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00065	< 0.00067	0%				< 0.00053	< 0.00059	< 0.00059	< 0.00068	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00065	< 0.00069	0%				< 0.00053	< 0.00059	< 0.00059	< 0.0007	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0009	< 0.00083	0%				< 0.0021	< 0.0008	< 0.0008	< 0.00084	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.00022	< 0.05	0%				< 0.0024	< 0.0002	< 0.0002	< 0.051	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.0008	< 0.00065	< 0.00085	0%				< 0.00063	< 0.00059	< 0.00059	< 0.00086	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.00043	< 0.00077	0%				< 0.0011	< 0.00039	< 0.00039	< 0.00078	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.0006	< 0.00043	< 0.00068	0%				< 0.00063	< 0.00039	< 0.00039	< 0.00069	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00055* J B	< 0.00098	< 0.0012	33%	0.00091	0.00055	0.0012	< 0.00042	*0.00110* J B	< 0.00088	< 0.0012	25%	0.000900	0.00042	0.0012
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.0006	< 0.0017	< 0.00091	0%				< 0.00063	< 0.0016	< 0.0016	< 0.00092	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00076	< 0.0013	0%				< 0.00042	< 0.00069	< 0.00069	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00076	< 0.00068	0%				< 0.00042	< 0.00069	< 0.00069	< 0.00069	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0014 J	0.0038 J	< 0.00082	67%	0.00201	0.00082	0.0038	0.0018 J	< 0.00088	< 0.00088	< 0.00083	25%	0.001198	0.00083	0.0018
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.0006	< 0.0012	< 0.0007	0%				< 0.00063	< 0.0011	< 0.0011	< 0.00071	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00110	< 0.00096	0%				< 0.00053	< 0.00098	< 0.00098	< 0.00097	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.0006	< 0.00076	< 0.00096	0%				< 0.00063	< 0.00069	< 0.00069	< 0.00097	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00065	< 0.0004	0%				< 0.00053	< 0.00059	< 0.00059	< 0.0004	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.0006	< 0.00065	< 0.001	0%				< 0.00063	< 0.00059	< 0.00059	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.0006	< 0.00065	< 0.0008	0%				< 0.00063	< 0.00059	< 0.00059	< 0.00081	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.0006	< 0.00043	< 0.00079	0%				< 0.00063	< 0.00039	< 0.00039	< 0.0008	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0023	< 0.00091	0%				< 0.0011	< 0.0021	< 0.0021	< 0.00092	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.0008	< 0.00033	< 0.00099	0%				< 0.00063	< 0.00029	< 0.00029	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00054	< 0.00072	0%				< 0.00042	< 0.00049	< 0.00049	< 0.00073	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.0008	< 0.00065	< 0.00076	0%				< 0.00063	< 0.00059	< 0.00059	< 0.00077	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.0007	< 0.00065	< 0.00031	0%				< 0.00074	< 0.00059	< 0.00059	< 0.00031	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00040	< 0.00033	< 0.00037	0%				< 0.00042	< 0.00029	< 0.00029	< 0.00037	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
J Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
U Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
J+ Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
J- Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
UJ Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-805S 10/31/2012	MW-805S 7/17/2013	MW-805S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-806D 10/31/2012	MW-806D 7/17/2013	MW-806D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.0054	0.0024	0.0035	100%	0.00377	0.0024	0.0054	0.000099 J	0.000052 J	0.00012 J	100%	0.00009	0.000052	0.00012
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.0001 J	0.00006 J	0.00019 J	100%	0.00012	0.00006	0.00019	0.00018 J	0.00014 J	0.0002 J	100%	0.00017	0.00014	0.0002
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.0001* J B	*0.000084* J B	*0.00014* J B	100%	0.00011	0.000084	0.00014	*0.000089* J B	*0.000046* J B	*0.00011* J B	100%	0.00008	0.000046	0.00011
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.000041* J B	*0.000043* J B	*0.000041* J B	100%	0.00004	0.000041	0.000043	0.000019 J	0.000017 J	0.000021 J	100%	0.00002	0.000017	0.000021
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.00001	*0.000031* J B	< 0.000023	33%	0.00002	0.00001	0.000031	< 0.00001	< 0.0000099	< 0.000023	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000051 J	0.00004 J	0.000062 J	100%	0.00005	0.00004	0.000062	0.000023 J	< 0.0000099	< 0.00002	33%	0.00002	0.0000099	0.000023
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	0.000025 J	0.000052 J	67%	0.00003	0.000013	0.000052	< 0.000013	0.000015 J	< 0.000011	33%	0.00001	0.000011	0.000015
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	0.000018 J	0.000021 J	67%	0.00002	0.000016	0.000021	< 0.000016	< 0.000016	< 0.000016	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.000033 J	0.000023 J	0.000021 J	100%	0.00003	0.000021	0.000033	< 0.000013	< 0.000013	< 0.00002	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	0.000015 J	< 0.000014	33%	0.00001	0.000014	0.000015	< 0.000015	< 0.000015	< 0.000014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.0005 J	0.00034 J	0.0003 J	100%	0.00038	0.0003	0.0005	0.000053 J	0.000021 J	< 0.000023	67%	0.00003	0.000021	0.000053
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.0049	0.003	0.0019	100%	0.00327	0.0019	0.0049	< 0.00001	0.000024 J	< 0.00021	33%	0.00008	0.00001	0.00021
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	**0.000023** A(GW)	< 0.000011	33%	0.00002	0.000011	0.000023	< 0.000013	0.000013 J	< 0.000011	33%	0.00001	0.000011	0.000013
Naphthalene	91-20-3	31	NE	2	2	0.013	0.0023	0.00049 J	*0.024* B	100%	0.00893	0.00049	0.024	0.0045	0.00012 J	0.005	100%	0.00321	0.00012	0.005
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	< 0.000015	0.000032 J	< 0.000014	33%	0.00003	0.000013	0.000042	0.000027 J	0.000047 J	< 0.000014	67%	0.00004	0.000027	0.000047
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.00026 J	0.00018 J	0.00014 J	100%	0.00019	0.00014	0.00026	0.00008 J	< 0.000019	0.000021 J	67%	0.00004	0.000019	0.00008
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00040	< 0.00061	0%				< 0.00041	< 0.00040	< 0.00061	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.0006	< 0.0004	< 0.00075	0%				< 0.00061	< 0.0004	< 0.00075	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00079	< 0.00065	0%				< 0.00031	< 0.00079	< 0.00065	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00050	< 0.00064	0%				< 0.00051	< 0.00050	< 0.00064	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00079	< 0.00076	0%				< 0.00041	< 0.00079	< 0.00076	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.0007	< 0.00069	< 0.00063	0%				< 0.00071	< 0.00069	< 0.00063	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.001	< 0.0004	< 0.0007	0%				< 0.001	< 0.0004	< 0.0007	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.00031	0%				< 0.0013	< 0.0013	< 0.00031	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00079	< 0.00048	0%				< 0.00051	< 0.00079	< 0.00048	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00079	< 0.00059	0%				< 0.00051	< 0.00079	< 0.00059	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00040	< 0.00073	0%				< 0.00051	< 0.00040	< 0.00073	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.0006	< 0.0005	< 0.00074	0%				< 0.00061	< 0.0005	< 0.00074	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.0006	< 0.00089	< 0.00094	0%				< 0.00061	< 0.00089	< 0.00094	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.0009	< 0.00059	< 0.0013	0%				< 0.00092	< 0.00059	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00069	< 0.00035	0%				< 0.00051	< 0.00069	< 0.00035	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00059	< 0.00069	0%				< 0.00051	< 0.00059	< 0.00069	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00059	< 0.00071	0%				< 0.00051	< 0.00059	< 0.00071	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0008	< 0.00086	0%				< 0.0020	< 0.0008	< 0.00086	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.0002	< 0.052	0%				< 0.0023	< 0.0002	< 0.052	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.0006	< 0.00059	< 0.00088	0%				< 0.00061	< 0.00059	< 0.00088	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.0004	< 0.00079	0%				< 0.001	< 0.0004	< 0.00079	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.0006	< 0.0004	< 0.0007	0%				< 0.00061	< 0.0004	< 0.0007	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00075* J B	< 0.00089	< 0.0012	33%	0.00095	0.00075	0.0012	*0.00070* J B	< 0.00089	< 0.0012	33%	0.00093	0.0007	0.0012
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.0006	< 0.0016	< 0.00094	0%				< 0.00061	< 0.0016	< 0.00094	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00069	< 0.0013	0%				< 0.00041	< 0.00069	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00069	< 0.0007	0%				< 0.00041	< 0.00069	< 0.0007	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0025 J	0.0048 J	< 0.00085	67%	0.00272	0.00085	0.0048	0.0032 J	0.0066 J	< 0.00085	67%	0.00355	0.00085	0.0066
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.0006	< 0.0011	< 0.00072	0%				< 0.00061	< 0.0011	< 0.00072	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00099	< 0.00099	0%				< 0.00051	< 0.00099	< 0.00099	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.0006	< 0.00069	< 0.00099	0%				< 0.00061	< 0.00069	< 0.00099	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00059	< 0.00041	0%				< 0.00051	< 0.00059	< 0.00041	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.0006	< 0.00059	< 0.001	0%				< 0.00061	< 0.00059	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.0006	< 0.00059	< 0.00082	0%				< 0.00061	< 0.00059	< 0.00082	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.0006	< 0.0004	< 0.00081	0%				< 0.00061	0.0011 J	< 0.00081	33%	0.00084	0.00061	0.0011
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0021	< 0.00094	0%				< 0.001	< 0.0021	< 0.00094	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.0006	< 0.0003	< 0.001	0%				< 0.00061	< 0.0003	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00050	< 0.00074	0%				< 0.00041	< 0.00050	< 0.00074	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.0006	< 0.00059	< 0.00078	0%				< 0.00061	< 0.00059	< 0.00078	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.0007	< 0.00059	< 0.00032	0%				< 0.00071	< 0.00059	< 0.00032	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.00440 J	0.00300 J	0.011	100%	0.00613	0.003	0.011	< 0.00041	< 0.00030	0.001 J	33%	0.00057	0.0003	0.001

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-806S 10/31/2012	MW-806S 7/16/2013	MW-806S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-807D 11/1/2012	MW-807D 7/18/2013	MW-807D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00021 J	0.000085 J	0.00018 J	100%	0.00016	0.000085	0.00021	0.0001 J	< 0.0006	< 0.00039	33%	0.00036	0.0001	0.0006
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00025 J	0.00014 J	0.00024 J	100%	0.00021	0.00014	0.00025	0.0007 J	< 0.00052	0.0003 J	67%	0.00051	0.0003	0.0007
Anthracene	120-12-7	0.043	NE	31	31	0.000035	0.000043 J B	0.000026 J	0.00015 J B	100%	0.00007	0.000026	0.00015	0.00023 J B	< 0.0006	< 0.00014	33%	0.00032	0.00014	0.0006
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.000016 J	< 0.000015	0.000032 J B	67%	0.00002	0.000015	0.000032	0.00017 J B	0.0013 J B	< 0.00011	67%	0.00053	0.00011	0.0013
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.00001	< 0.0000098	< 0.000023	0%				< 0.00004	< 0.0004	< 0.00022	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000011 J	< 0.0000098	< 0.00002	33%	0.00001	0.0000098	0.00002	< 0.00004	< 0.0004	< 0.00019	0%			
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	< 0.000013	< 0.000012	0%				< 0.000052	< 0.00052	< 0.00011	0%			
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.000016	< 0.000017	0%				< 0.000064	< 0.00064	< 0.00016	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	< 0.000013	< 0.00002	0%				0.000096 J	0.00052 J	< 0.00019	67%	0.00027	0.000096	0.00052
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000015	< 0.000015	0%				< 0.00006	< 0.0006	< 0.00014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	< 0.00001	0.000015 J	0.000042 J	67%	0.00002	0.00001	0.000042	0.00017 J	< 0.0004	< 0.00022	33%	0.00026	0.00017	0.0004
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.000016 J	0.000015 J	< 0.00021	67%	0.00008	0.000015	0.00021	0.000056 J	< 0.0004	< 0.002	33%	0.00082	0.000056	0.002
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.000013	< 0.000012	0%				< 0.000052	< 0.00052	< 0.00011	0%			
Naphthalene	91-20-3	31	NE	2	2	0.013	0.000074 J	0.000058 J	< 0.00047 U	67%	0.00020	0.000058	0.00047	0.0045	0.0033 J	< 0.0021 U	67%	0.00330	0.0021	0.0045
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	< 0.000011	0.000039 J	< 0.000041	33%	0.00003	0.000013	0.000043	0.0001 J	< 0.00052	< 0.00041	33%	0.00034	0.0001	0.00052
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.000055 J	0.000032 J	0.000042 J	100%	0.00004	0.000032	0.000055	0.0003 J B	< 0.00076	< 0.00016	33%	0.00041	0.00016	0.00076
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00041	< 0.00039	< 0.00062	0%				< 0.00400	< 0.00040	< 0.0006	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00062	< 0.00039	< 0.00077	0%				< 0.006	< 0.0004	< 0.00074	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00031	< 0.00078	< 0.00066	0%				< 0.00300	< 0.00080	< 0.00064	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00052	< 0.00049	< 0.00065	0%				< 0.00500	< 0.00050	< 0.00063	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00041	< 0.00078	< 0.00078	0%				< 0.00400	< 0.00080	< 0.00075	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00072	< 0.00069	< 0.00064	0%				< 0.007	< 0.0007	< 0.00062	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.001	< 0.00039	< 0.00072	0%				1.2 B	0.64 B	0.38 B	100%	0.74	0.38	1.2
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.00032	0%				< 0.013	< 0.0013	< 0.0003	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00052	< 0.00078	< 0.00049	0%				< 0.00500	< 0.00080	< 0.00047	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00052	< 0.00078	< 0.0006	0%				< 0.00500	< 0.00080	< 0.00058	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00052	< 0.00039	< 0.00075	0%				< 0.00500	< 0.00040	< 0.00072	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00062	< 0.00049	< 0.00076	0%				< 0.006	< 0.0005	< 0.00073	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00062	< 0.00088	< 0.00096	0%				< 0.006	< 0.0009	< 0.00092	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00093	< 0.00059	< 0.0014	0%				< 0.009	< 0.0006	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00052	< 0.00069	< 0.00036	0%				< 0.00500	< 0.00070	< 0.00034	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00052	< 0.00059	< 0.00071	0%				< 0.00500	< 0.00060	< 0.00068	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00052	< 0.00059	< 0.00073	0%				< 0.00500	< 0.00060	< 0.0007	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0021	< 0.0008	< 0.00087	0%				< 0.0200	< 0.0008	< 0.00084	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0024	< 0.0002	< 0.053	0%				< 0.023	< 0.0002	< 0.051	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00062	< 0.00059	< 0.00089	0%				< 0.006	< 0.0006	< 0.00086	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.00039	< 0.00081	0%				< 0.01	< 0.0004	< 0.00078	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00062	< 0.00039	< 0.00072	0%				< 0.006	< 0.0004	< 0.00069	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	0.00057 J B	0.00120 J B	< 0.0013	67%	0.00102	0.00057	0.0013	< 0.00400	< 0.00090	< 0.0012	0%			
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00062	< 0.0016	< 0.00096	0%				< 0.006	< 0.0016	< 0.00092	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00041	< 0.00069	< 0.0014	0%				< 0.00400	< 0.00070	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00041	< 0.00069	< 0.00072	0%				< 0.00400	< 0.00070	< 0.00069	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0021 J	< 0.00088	< 0.00086	33%	0.00128	0.00086	0.0021	< 0.004	0.0067 J	< 0.00083	33%	0.00384	0.00083	0.0067
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00062	< 0.0011	< 0.00074	0%				< 0.006	< 0.0011	< 0.00071	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00052	< 0.00098	< 0.001	0%				< 0.00500	< 0.00100	< 0.00097	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00062	< 0.00069	< 0.001	0%				< 0.006	< 0.0007	< 0.00097	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00052	< 0.00059	< 0.00042	0%				< 0.00500	< 0.00060	< 0.0004	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00062	< 0.00059	< 0.0011	0%				< 0.006	< 0.0006	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00062	< 0.00059	< 0.00084	0%				< 0.006	< 0.0006	< 0.00081	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00062	< 0.00039	< 0.00083	0%				< 0.006	< 0.0004	< 0.0008	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0021	< 0.00096	0%				< 0.01	< 0.0021	< 0.00092	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00062	< 0.00029	< 0.001	0%				< 0.006	< 0.0003	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00041	< 0.00049	< 0.00076	0%				< 0.00400	< 0.00050	< 0.00073	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00062	< 0.00059	< 0.0008	0%				< 0.006	< 0.0006	< 0.00077	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00072	< 0.00059	< 0.00093	0%				< 0.007	**0.0022** J A(MCL)	< 0.00031	33%	0.00317	0.00031	0.007
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00041	< 0.00029	0.00043 J	33%	0.00038	0.00029	0.00043	***34*** A(I,DCL),B	***46*** A(I,DCL),B	*21* B	100%	33.66667	21	46

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-807S 11/1/2012	MW-807S 7/16/2013	MW-807S-Dup 7/16/2013	MW-807S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-808D 11/2/2012	MW-808D 7/17/2013	MW-808D 9/14/2017	% Detect	Average	Minimum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00096	0.00024 J	0.00029 J	< 0.0039	75%	0.0013	0.00024	0.0039	< 0.00015	< 0.00082	< 0.002	0%		
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.0012	0.00047 J	0.00058	0.004 J	100%	0.0016	0.00047	0.004	0.00026 J	< 0.00071	< 0.00073	33%	0.00057	0.00026
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.00025* J B	*0.000071* J B	*0.000085* J B	< 0.0014	75%	0.0005	0.000071	0.0014	< 0.00015	< 0.00082	< 0.00073	0%		
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.000021	< 0.000016	< 0.000016	< 0.0011	25%	0.0003	0.000016	0.0011	< 0.00015	< 0.00082	< 0.00057	0%		
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.0000099	< 0.000011	< 0.000011	< 0.0022	0%				< 0.0001	< 0.00054	< 0.0011	0%		
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000014 J	0.000012 J	0.000011 J	< 0.0019	75%	0.0005	0.000011	0.0019	< 0.0001	< 0.00054	< 0.00099	0%		
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	0.00002 J	0.000016 J	< 0.0011	50%	0.0003	0.000013	0.0011	< 0.00013	< 0.00071	< 0.00057	0%		
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.000018	< 0.000017	< 0.0016	0%				< 0.00016	< 0.00087	< 0.00083	0%		
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	< 0.000014	< 0.000014	< 0.0019	0%				< 0.00013	< 0.00071	< 0.00099	0%		
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000016	< 0.000016	< 0.0014	0%				< 0.00015	< 0.00082	< 0.00073	0%		
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	< 0.0000099	0.000011 J	0.000017 J	< 0.0022	50%	0.0006	0.0000099	0.0022	< 0.0001	0.00054 J	< 0.0011	33%	0.00058	0.0001
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.00097	0.00041 J	0.00052 J	< 0.02	75%	0.0055	0.00041	0.02	< 0.0001	< 0.00054	< 0.01	0%		
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	0.000014 J	< 0.000014	< 0.0011	25%	0.0003	0.000013	0.0011	< 0.00013	< 0.00071	< 0.00057	0%		
Naphthalene	91-20-3	31	NE	2	2	0.013	*1.4* B	*0.37* B	*0.46* B	*1.9* B	100%	1.0325	0.37	1.9	0.0016 J	0.0055 J	< 0.0017	67%	0.00293	0.0016
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000095 J	0.000069 J	0.000089 J	< 0.0041	75%	0.0011	0.000069	0.0041	< 0.00013	< 0.00071	< 0.0021	0%		
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	< 0.000019	< 0.000021	< 0.000002	< 0.0016	0%				< 0.00019	< 0.001	< 0.00083	0%		
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00044	< 0.00042	< 0.006	0%				< 0.00400	< 0.00870	< 0.031	0%		
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.00044	< 0.00042	< 0.0074	0%				< 0.0061	< 0.0087	< 0.038	0%		
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00088	< 0.00084	< 0.0064	0%				< 0.00300	< 0.01700	< 0.033	0%		
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00055	< 0.00053	< 0.0063	0%				< 0.00510	< 0.01100	< 0.032	0%		
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00088	< 0.00084	< 0.0075	0%				< 0.00400	< 0.01700	< 0.039	0%		
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.00077	< 0.00074	< 0.0062	0%				< 0.0071	< 0.015	< 0.032	0%		
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	0.0048 J	< 0.00044	0.0015 J	< 0.0069	50%	0.0034	0.00044	0.0069	***3.3*** A(I,DCL),B	***3*** A(I,DCL),B	***2.5*** A(I,DCL),B	100%	2.93333	2.5
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0014	< 0.0014	< 0.003	0%				< 0.013	< 0.028	< 0.016	0%		
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00088	< 0.00084	< 0.0047	0%				< 0.00510	< 0.01700	< 0.024	0%		
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00088	< 0.00084	< 0.0058	0%				< 0.00510	< 0.01700	< 0.03	0%		
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00044	< 0.00042	< 0.0072	0%				< 0.00510	< 0.00870	< 0.037	0%		
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.00055	< 0.00053	< 0.0073	0%				< 0.0061	< 0.011	< 0.038	0%		
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.00099	< 0.00095	< 0.0092	0%				< 0.0061	< 0.02	< 0.047	0%		
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.00066	< 0.00063	< 0.013	0%				< 0.0091	< 0.013	< 0.068	0%		
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00077	< 0.00074	< 0.0034	0%				< 0.00510	< 0.01500	< 0.018	0%		
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00066	< 0.00063	< 0.0068	0%				< 0.00510	< 0.01300	< 0.035	0%		
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00066	< 0.00063	< 0.007	0%				< 0.00510	< 0.01300	< 0.036	0%		
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0009	< 0.0008	< 0.0084	0%				< 0.0200	< 0.0170	< 0.043	0%		
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.00022	< 0.00021	< 0.51	0%				< 0.023	< 0.0043	< 2.6	0%		
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00066	< 0.00063	< 0.0086	0%				< 0.0061	< 0.013	< 0.044	0%		
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.00044	< 0.00042	< 0.0078	0%				< 0.01	< 0.0087	< 0.04	0%		
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00044	< 0.00042	< 0.0069	0%				< 0.0061	< 0.0087	< 0.035	0%		
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00063* J B	< 0.00099	< 0.00095	< 0.012	25%	0.0036	0.00063	0.012	< 0.00400	< 0.02000	< 0.062	0%		
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.0018	< 0.0017	< 0.0092	0%				< 0.0061	< 0.035	< 0.047	0%		
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00077	< 0.00074	< 0.013	0%				< 0.00400	< 0.01500	< 0.068	0%		
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00077	< 0.00074	< 0.0069	0%				< 0.00400	< 0.01500	< 0.035	0%		
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0024 J	< 0.00099	< 0.00095	< 0.0083	25%	0.0032	0.00095	0.0083	< 0.004	< 0.02	< 0.043	0%		
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.0012	< 0.0012	< 0.0071	0%				< 0.0061	< 0.024	< 0.036	0%		
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00110	< 0.00110	< 0.0097	0%				< 0.00510	< 0.02200	< 0.05	0%		
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.00077	< 0.00074	< 0.0097	0%				< 0.0061	< 0.015	< 0.05	0%		
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00066	< 0.00063	< 0.004	0%				< 0.00510	< 0.01300	< 0.021	0%		
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.00066	< 0.00063	< 0.01	0%				< 0.0061	< 0.013	< 0.052	0%		
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.00066	< 0.00063	< 0.0081	0%				< 0.0061	< 0.013	< 0.042	0%		
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.00044	< 0.00042	< 0.008	0%				< 0.0061	< 0.0087	< 0.041	0%		
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.0023	< 0.0022	< 0.0092	0%				< 0.01	< 0.046	< 0.047	0%		
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.00033	< 0.00032	< 0.01	0%				< 0.0061	< 0.0065	< 0.052	0%		
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00055	< 0.00053	< 0.0073	0%				< 0.00400	< 0.01100	< 0.038	0%		
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.00066	< 0.00063	< 0.0077	0%				< 0.0061	< 0.013	< 0.04	0%		
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00069	< 0.00066	< 0.00063	< 0.0091	0%				< 0.0071	< 0.013	< 0.016	0%		
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00040	< 0.00033	< 0.00032	0.019 J	25%	0.0050	0.00032	0.019	***110*** A(I,DCL),B	***120*** A(I,DCL),B	***55*** A(I,DCL),B	100%	95.00000	55

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
J Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
UJ Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
J+ Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
J- Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
UJ Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected
PAHs (mg/L)							
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00073
Anthracene	120-12-7	0.043	NE	31	31	0.000035	
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.0011
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	
Naphthalene	91-20-3	31	NE	2	2	0.013	0.0055
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	
SVOCs (mg/L)							
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	3.3
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	
Benzidine	92-87-5	NE	NE	NE	NE	NE	
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	
Isophorone	78-59-1	12,000	NE	3	3	0.92	
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	
Phenol	108-95-2	83,000	NE	31	31	0.180	120

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate

A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-808S 11/2/2012	MW-808S 7/17/2013	MW-808S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-809D 11/2/2012	MW-809D 7/18/2013	MW-809D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.0011 J	0.00016 J	< 0.0021	67%	0.00112	0.00016	0.0021	< 0.00006	< 0.00031	< 0.002	0%			
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00038 J	0.00053 J	< 0.00075	67%	0.00055	0.00038	0.00075	0.0001 J	0.0004 J	< 0.00071	67%	0.00040	0.0001	0.00071
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.00096* J B	*0.00041* J B	< 0.00075	67%	0.00071	0.00041	0.00096	*0.000092* J B	*0.0004* J B	< 0.00071	67%	0.00040	0.000092	0.00071
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.00069* B	*0.00055* B	< 0.00059	67%	0.00061	0.00055	0.00069	*0.000068* J B	*0.00044* J B	< 0.00056	67%	0.00036	0.000068	0.00056
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	***0.00036*** J A(MCL),B	***0.00033*** A(MCL),B	< 0.0012	67%	0.00063	0.00033	0.0012	< 0.00004	< 0.012	< 0.0011	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00081	0.00062	< 0.001	67%	0.00081	0.00062	0.001	< 0.00004	< 0.012	< 0.00096	0%			
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.00023 J	0.00015 J	< 0.00059	67%	0.00032	0.00015	0.00059	< 0.000052	< 0.012	< 0.00056	0%			
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.00018 J	0.00021	< 0.00086	67%	0.00042	0.00018	0.00086	< 0.000064	< 0.012	< 0.00081	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.00046 J	0.0005 J	< 0.001	67%	0.00065	0.00046	0.001	< 0.000052	< 0.012	< 0.00096	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000064	0.000072 J	< 0.00075	33%	0.00030	0.000064	0.00075	< 0.00006	< 0.012	< 0.00071	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	*0.0033* B	0.000018 J	< 0.0012	67%	0.00151	0.000018	0.0033	< 0.00004	< 0.012	< 0.0011	0%			
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.0053	0.00046 J	< 0.011	67%	0.00559	0.00046	0.011	0.00023 J	< 0.012	< 0.01	33%	0.00741	0.00023	0.012
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	**0.00025** A(GW)	**0.00017** A(GW)	< 0.00059	67%	0.00034	0.00017	0.00059	< 0.000052	< 0.012	< 0.00056	0%			
Naphthalene	91-20-3	31	NE	2	2	0.013	*0.066* B	*0.013* B	*0.067* B	100%	0.04867	0.013	0.067	0.0025	0.00073 J	< 0.0016	67%	0.00161	0.00073	0.0025
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	*0.0054* B	0.0013	< 0.0022	67%	0.00297	0.0013	0.0054	< 0.000052	< 0.00027	< 0.0021	0%			
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	*0.0014* J B	0.000029 J	< 0.00086	67%	0.00076	0.000029	0.0014	< 0.000076	< 0.0004	< 0.00081	0%			
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00043	< 0.00045	< 0.032	0%				< 0.00040	< 0.00830	< 0.03	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00064	< 0.00045	< 0.039	0%				< 0.0006	< 0.0083	< 0.037	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00032	< 0.00090	< 0.034	0%				< 0.00030	< 0.01700	< 0.032	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00053	< 0.00056	< 0.033	0%				< 0.00050	< 0.01000	< 0.031	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00043	< 0.00090	< 0.04	0%				< 0.00040	< 0.01700	< 0.037	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00074	< 0.00079	< 0.033	0%				< 0.0007	< 0.015	< 0.031	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	***3.6*** A(I,DCL),B	*0.42* B	*0.55* B	100%	1.52333	0.42	3.6	***3.2*** A(I,DCL),B	***3.3*** A(I,DCL),B	***2.4*** A(I,DCL),B	100%	2.96667	2.4	3.3
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0014	< 0.0015	< 0.016	0%				< 0.0013	< 0.027	< 0.015	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00053	< 0.00090	< 0.025	0%				< 0.00050	< 0.01700	< 0.024	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00053	< 0.00090	< 0.031	0%				< 0.00050	< 0.01700	< 0.029	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00053	< 0.00045	< 0.038	0%				< 0.00050	< 0.00830	< 0.036	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00064	< 0.00056	< 0.039	0%				< 0.0006	< 0.01	< 0.036	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00064	< 0.001	< 0.049	0%				< 0.0006	< 0.019	< 0.046	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00096	< 0.00067	< 0.07	0%				< 0.0009	< 0.012	< 0.066	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00053	< 0.00079	< 0.018	0%				< 0.00050	< 0.01500	< 0.017	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00053	< 0.00067	< 0.036	0%				< 0.00050	< 0.01200	< 0.034	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00053	< 0.00067	< 0.037	0%				< 0.00050	< 0.01200	< 0.035	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0021	< 0.0009	< 0.045	0%				< 0.0020	< 0.0170	< 0.042	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0024	< 0.00022	< 2.7	0%				< 0.0023	< 0.0042	< 2.5	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00064	< 0.00067	< 0.046	0%				< 0.0006	< 0.012	< 0.043	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.0011	< 0.00045	< 0.041	0%				< 0.001	< 0.0083	< 0.039	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00064	< 0.00045	< 0.037	0%				< 0.0006	< 0.0083	< 0.034	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00170* J B	< 0.00100	< 0.065	33%	0.02257	0.001	0.065	*0.00130* J B	< 0.01900	< 0.061	33%	0.02710	0.0013	0.061
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00064	< 0.0018	< 0.049	0%				< 0.0006	< 0.033	< 0.046	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00043	< 0.00079	< 0.07	0%				< 0.00040	< 0.01500	< 0.066	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00043	< 0.00079	< 0.037	0%				< 0.00040	< 0.01500	< 0.034	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.007 J	*0.014* B	< 0.044	67%	0.02167	0.007	0.044	< 0.0004	< 0.019	< 0.041	0%			
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00064	< 0.0012	< 0.038	0%				< 0.0006	< 0.023	< 0.035	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00053	< 0.00110	< 0.052	0%				< 0.00050	< 0.02100	< 0.048	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00064	< 0.00079	< 0.052	0%				< 0.0006	< 0.015	< 0.048	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00053	< 0.00067	< 0.022	0%				< 0.00050	< 0.01200	< 0.02	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00064	< 0.00067	< 0.054	0%				< 0.0006	< 0.012	< 0.051	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00064	< 0.00067	< 0.043	0%				< 0.0006	< 0.012	< 0.04	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00064	< 0.00045	< 0.042	0%				< 0.0006	< 0.0083	< 0.04	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.0011	< 0.0024	< 0.049	0%				< 0.001	< 0.044	< 0.046	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00064	< 0.00034	< 0.053	0%				< 0.0006	< 0.0063	< 0.05	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00043	< 0.00056	< 0.039	0%				< 0.00040	< 0.01000	< 0.036	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00064	< 0.00067	< 0.041	0%				< 0.0006	< 0.012	< 0.038	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00074	< 0.00067	< 0.017	0%				< 0.0007	< 0.012	< 0.016	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	20 B	*5.4* B	*3.3* B	100%	9.56667	3.3	20	*15* B	***31*** A(I,DCL),B	< 0.019	67%	15.33967	0.019	31

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-809M 11/2/2012	MW-809M 7/18/2013	MW-809M-Dup 7/18/2013	MW-809M 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-809S 11/2/2012	MW-809S 7/15/2013	MW-809S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																					
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.000062 J	< 0.00031	< 0.00016	0.000051 J	50%	0.000146	0.000051	0.00031	0.00011 J	0.00028 J	0.0007 J	100%	0.000363	0.00011	0.0007
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00015 J	< 0.00027	0.0002 J	0.000081 J	75%	0.000175	0.000081	0.00027	0.00023 J	0.00039 J	0.0017 J	100%	0.000773	0.00023	0.0017
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.00018* J B	< 0.00031	< 0.00016	*0.00015* J B	50%	0.000200	0.00015	0.00031	*0.00015* J B	*0.000042* J B	*0.0004* J B	100%	0.000197	0.000042	0.0004
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.000019 J	*0.00062* J B	*0.00023* J B	0.00002 J	100%	0.000222	0.000019	0.00062	*0.000028* J B	0.000023 J	*0.0002* J B	100%	0.000084	0.000023	0.0002
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.0000099	< 0.00021	< 0.00011	< 0.000022	0%				< 0.00001	*0.00003* J B	< 0.00022	33%	0.000087	0.00001	0.00022
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000012 J	< 0.00021	< 0.00011	< 0.000019	25%	0.000088	0.000012	0.00021	0.000033 J	0.000038 J	< 0.00019	67%	0.000087	0.000033	0.00019
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	< 0.00027	< 0.00014	0.00003 J	25%	0.000113	0.000013	0.00027	0.000021 J	0.000058 J	< 0.00011	67%	0.000063	0.000021	0.00011
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.00033	< 0.00017	0.00003 J	25%	0.000137	0.000016	0.00033	< 0.000016	0.00003 J	< 0.00016	33%	0.000069	0.000016	0.00016
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	< 0.00027	< 0.00014	< 0.000019	0%				< 0.000013	0.000035 J	< 0.00019	33%	0.000079	0.000013	0.00019
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.00031	< 0.00016	0.00004	25%	0.000131	0.000015	0.00031	< 0.000015	0.00004 J	< 0.00014	33%	0.000065	0.000015	0.00014
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	< 0.0000099	< 0.00021	< 0.00011	< 0.000022	0%				0.000045 J	0.00004 J	< 0.00022	67%	0.000102	0.00004	0.00022
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.000014 J	< 0.00021	< 0.00011	< 0.0002	25%	0.000134	0.000014	0.00021	0.000033 J	0.000056 J	< 0.002	67%	0.000696	0.000033	0.002
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.00027	< 0.00014	< 0.000011	0%				< 0.000013	**0.000047** A(GW)	< 0.00011	33%	0.000057	0.000013	0.00011
Naphthalene	91-20-3	31	NE	2	2	0.013	0.0024	0.00058 J	0.00044 J	< 0.000071 U	75%	0.000873	0.000071	0.0024	0.0011	0.000081 J	0.0098	100%	0.003660	0.000081	0.0098
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000023 J	< 0.00027	< 0.00014	0.000061 J	50%	0.000124	0.000023	0.00027	0.00003 J	0.00012 J	0.0006 J	100%	0.000250	0.00003	0.0006
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	< 0.000019	< 0.00039	< 0.0002	0.00003 J	25%	0.000160	0.000019	0.00039	< 0.000019	< 0.00002	< 0.00016	0%			
SVOCs (mg/L)																					
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00041	< 0.00420	< 0.0006	0%				< 0.00040	< 0.00043	< 0.00059	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.00041	< 0.0042	< 0.00074	0%				< 0.0006	< 0.00043	< 0.00073	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00082	< 0.00840	< 0.00064	0%				< 0.00030	< 0.00086	< 0.00063	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00052	< 0.00530	< 0.00063	0%				< 0.00050	< 0.00054	< 0.00062	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00082	< 0.00840	< 0.00075	0%				< 0.00040	< 0.00086	< 0.00074	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.00072	< 0.0074	< 0.00062	0%				< 0.0007	< 0.00075	< 0.00061	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	*0.16* B	*0.13* B	*0.15* B	0.044	100%	0.121000	0.044	0.16	< 0.001	< 0.00043	0.002 J	33%	0.001143	0.00043	0.002
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.014	< 0.0003	0%				< 0.0013	< 0.0014	< 0.0003	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00082	< 0.00840	< 0.00047	0%				< 0.00050	< 0.00086	< 0.00047	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00082	< 0.00840	< 0.00058	0%				< 0.00050	< 0.00086	< 0.00057	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00041	< 0.00420	< 0.00072	0%				< 0.00050	< 0.00043	< 0.00071	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.00052	< 0.0053	< 0.00073	0%				< 0.0006	< 0.00054	< 0.00072	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.00093	< 0.0095	< 0.00092	0%				< 0.0006	< 0.00097	< 0.00091	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.00062	< 0.0063	< 0.0013	0%				< 0.0009	< 0.00065	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00072	< 0.00740	< 0.00034	0%				< 0.00050	< 0.00075	< 0.00034	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00062	< 0.00630	< 0.00068	0%				< 0.00050	< 0.00065	< 0.00067	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00062	< 0.00630	< 0.0007	0%				< 0.00050	< 0.00065	< 0.00069	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0008	< 0.0084	< 0.00084	0%				< 0.0020	< 0.0009	< 0.00083	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.00021	< 0.0021	< 0.051	0%				< 0.0023	< 0.00022	< 0.05	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	0.0057 J	< 0.00062	< 0.0063	< 0.00088	25%	0.003370	0.00062	0.0063	< 0.0006	< 0.00065	< 0.00085	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.00041	< 0.0042	< 0.00078	0%				< 0.001	< 0.00043	< 0.00077	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00041	< 0.0042	< 0.00069	0%				< 0.0006	< 0.00043	< 0.00068	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00069* J B	< 0.00093	< 0.00950	< 0.0012	25%	0.003080	0.00069	0.0095	< 0.00040	*0.00260* J B	*0.0014* J B	67%	0.001467	0.0004	0.0026
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.0016	< 0.017	< 0.00092	0%				< 0.0006	< 0.0017	< 0.00091	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00072	< 0.00740	< 0.0013	0%				< 0.00040	< 0.00075	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00072	< 0.00740	< 0.00069	0%				< 0.00040	< 0.00075	< 0.00068	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0032 J	0.0061 J	< 0.0095	< 0.00083	50%	0.004908	0.00083	0.0095	0.0043 J	0.0024 J	< 0.00082	67%	0.002507	0.00082	0.0043
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.0011	< 0.012	< 0.00071	0%				< 0.0006	< 0.0012	< 0.0007	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00100	< 0.01100	< 0.00097	0%				< 0.00050	< 0.00110	< 0.00096	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.00072	< 0.0074	< 0.00097	0%				< 0.0006	< 0.00075	< 0.00096	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00062	< 0.00630	< 0.0004	0%				< 0.00050	< 0.00065	< 0.0004	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.00062	< 0.0063	< 0.001	0%				< 0.0006	< 0.00065	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.00062	< 0.0063	< 0.00081	0%				< 0.0006	< 0.00065	< 0.0008	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.00041	< 0.0042	< 0.0008	0%				< 0.0006	< 0.00043	< 0.00079	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.0022	< 0.022	< 0.00092	0%				< 0.001	< 0.0023	< 0.00091	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.00031	< 0.0032	< 0.001	0%				< 0.0006	< 0.00032	< 0.00099	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00052	< 0.00530	< 0.00073	0%				< 0.00040	< 0.00054	< 0.00072	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.00062	< 0.0063	< 0.00077	0%				< 0.0006	< 0.00065	< 0.00076	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00069	< 0.00062	< 0.0063	< 0.00031	0%				< 0.0007	< 0.00065	< 0.00091	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.023	0.026	0.026 J	< 0.00037	75%	0.018843	0.00037	0.026	0.013	< 0.00032	0.0034 J	67%	0.005573	0.00032	0.013

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
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[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-810D 10/31/2012	MW-810D 7/16/2013	MW-810D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-810S 10/31/2012	MW-810S 7/16/2013	MW-810S 9/14/2017	MW-810S DUP 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																					
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	< 0.000016	< 0.000015	< 0.000039	0%				0.00011 J	0.000053 J	< 0.00004	< 0.00004	50%	0.000061	0.00004	0.00011
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.000017 J	0.000015 J	0.00003 J	100%	0.000021	0.000015	0.00003	0.0002 J	0.00023 J	0.00015 J	0.0001 J	100%	0.000170	0.0001	0.00023
Anthracene	120-12-7	0.043	NE	31	31	0.000035	< 0.000016	< 0.000015	0.00003 J	33%	0.000020	0.000015	0.00003	0.00002 J	0.00002 J	*0.000041* J B	0.000031 J	100%	0.000028	0.00002	0.000041
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.000017 J	< 0.000015	0.00002 J	67%	0.000017	0.000015	0.00002	0.000016 J	< 0.000015	0.00002 J	0.00002 J	75%	0.000018	0.000015	0.00002
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.00001	0.000012 J	< 0.000022	33%	0.000015	0.00001	0.000022	< 0.00001	< 0.00001	< 0.000022	< 0.000022	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000017 J	0.000015 J	< 0.000019	67%	0.000017	0.000015	0.000019	< 0.00001	< 0.00001	< 0.000019	< 0.000019	0%			
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000014	0.000016 J	< 0.000011	33%	0.000014	0.000011	0.000016	< 0.000013	0.000016 J	< 0.000011	< 0.000011	25%	0.000013	0.000011	0.000016
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000017	< 0.000016	< 0.000016	0%				< 0.000016	< 0.000016	< 0.000016	< 0.000016	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000014	< 0.000013	< 0.000019	0%				< 0.000013	< 0.000013	< 0.000019	< 0.000019	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000016	0.000018 J	< 0.000014	33%	0.000016	0.000014	0.000018	< 0.000015	< 0.000015	< 0.000014	< 0.000014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	< 0.00001	0.000015 J	< 0.000022	33%	0.000016	0.00001	0.000022	< 0.00001	0.00002 J	< 0.000022	< 0.000022	25%	0.000019	0.00001	0.000022
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	< 0.00001	0.000012 J	< 0.0002	33%	0.000074	0.00001	0.0002	< 0.00001	0.000019 J	< 0.0002	< 0.0002	25%	0.000107	0.00001	0.0002
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000014	0.000015 J	< 0.000011	33%	0.000013	0.000011	0.000015	< 0.000013	0.000015 J	< 0.000011	< 0.000011	25%	0.000013	0.000011	0.000015
Naphthalene	91-20-3	31	NE	2	2	0.013	0.000057 J	0.0017	< 0.000071 U	67%	0.000609	0.000057	0.0017	0.0027	0.0013	< 0.000051 U	< 0.000061 U	50%	0.001028	0.000051	0.0027
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000024 J	0.000046 J	< 0.000041	67%	0.000037	0.000024	0.000046	0.000023 J	0.00005 J	< 0.000042	< 0.000042	50%	0.000039	0.000023	0.00005
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	< 0.00002	< 0.00002	0.00002 J	33%	0.000020	0.00002	0.00002	< 0.000019	< 0.000019	< 0.000018	0.00002 J	25%	0.000019	0.000016	0.00002
SVOCs (mg/L)																					
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00042	< 0.00041	< 0.0006	0%				< 0.00040	< 0.00040	< 0.0006	< 0.0006	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00063	< 0.00041	< 0.00074	0%				< 0.0006	< 0.0004	< 0.00074	< 0.00074	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00031	< 0.00082	< 0.00064	0%				< 0.00030	< 0.00080	< 0.00064	< 0.00064	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00052	< 0.00052	< 0.00063	0%				< 0.00050	< 0.00050	< 0.00063	< 0.00063	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00042	< 0.00082	< 0.00075	0%				< 0.00040	< 0.00080	< 0.00076	< 0.00076	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00073	< 0.00072	< 0.00062	0%				< 0.0007	< 0.0007	< 0.00062	< 0.00062	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.001	< 0.00041	< 0.00069	0%				< 0.001	< 0.0004	< 0.00069	< 0.00069	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0014	< 0.0013	< 0.0003	0%				< 0.0013	< 0.0013	< 0.00031	< 0.00031	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00052	< 0.00082	< 0.00047	0%				< 0.00050	< 0.00080	< 0.00048	< 0.00048	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00052	< 0.00082	< 0.00058	0%				< 0.00050	< 0.00080	< 0.00058	< 0.00058	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00052	< 0.00041	< 0.00072	0%				< 0.00050	< 0.00040	< 0.00072	< 0.00072	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00063	< 0.00052	< 0.00073	0%				< 0.0006	< 0.0005	< 0.00073	< 0.00073	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00063	< 0.00093	< 0.00092	0%				< 0.0006	< 0.0009	< 0.00093	< 0.00093	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00094	< 0.00062	< 0.0013	0%				< 0.0009	< 0.0006	< 0.0013	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00052	< 0.00072	< 0.00034	0%				< 0.00050	< 0.00070	< 0.00035	< 0.00035	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00052	< 0.00062	< 0.00068	0%				< 0.00050	< 0.00060	< 0.00068	< 0.00068	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00052	< 0.00062	< 0.0007	0%				< 0.00050	< 0.00060	< 0.0007	< 0.0007	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0021	< 0.0008	< 0.00084	0%				< 0.0020	< 0.0008	< 0.00085	< 0.00085	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0024	< 0.00021	< 0.051	0%				< 0.0023	< 0.0002	< 0.051	< 0.051	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00063	< 0.00062	< 0.00086	0%				< 0.0006	< 0.0006	< 0.00087	< 0.00087	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.00041	< 0.00078	0%				< 0.001	< 0.0004	< 0.00079	< 0.00079	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00063	< 0.00041	< 0.00069	0%				< 0.0006	< 0.0004	< 0.00069	< 0.00069	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00077* J B	*0.00200* J B	< 0.0012	67%	0.001323	0.00077	0.002	*0.00051* J B	< 0.00090	< 0.0012	< 0.0012	25%	0.000953	0.00051	0.0012
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00063	< 0.0016	< 0.00092	0%				< 0.0006	< 0.0016	< 0.00093	< 0.00093	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00042	< 0.00072	< 0.0013	0%				< 0.00040	< 0.00070	< 0.0013	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00042	< 0.00072	< 0.00069	0%				< 0.00040	< 0.00070	< 0.00069	< 0.00069	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0031 J	0.0014 J	< 0.00083	67%	0.001777	0.00083	0.0031	0.002 J	0.00096 J	< 0.00084	< 0.00084	50%	0.001160	0.00084	0.002
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00063	< 0.0011	< 0.00071	0%				< 0.0006	< 0.0011	< 0.00071	< 0.00071	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00052	< 0.00100	< 0.00097	0%				< 0.00050	< 0.00100	< 0.00098	< 0.00098	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00063	< 0.00072	< 0.00097	0%				< 0.0006	< 0.0007	< 0.00098	< 0.00098	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00052	< 0.00062	< 0.0004	0%				< 0.00050	< 0.00060	< 0.00041	< 0.00041	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00063	< 0.00062	< 0.001	0%				< 0.0006	< 0.0006	< 0.001	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00063	< 0.00062	< 0.00081	0%				< 0.0006	< 0.0006	< 0.00082	< 0.00082	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00063	< 0.00041	< 0.0008	0%				< 0.0006	< 0.0004	< 0.00081	< 0.00081	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0022	< 0.00092	0%				< 0.001	< 0.0021	< 0.00093	< 0.00093	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00063	< 0.00031	< 0.001	0%				< 0.0006	< 0.0003	< 0.001	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00042	< 0.00062	< 0.00073	0%				< 0.00040	< 0.00050	< 0.00073	< 0.00073	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00063	< 0.00062	< 0.00077	0%				< 0.0006	< 0.0006	< 0.00078	< 0.00078	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00073	< 0.00062	< 0.00031	0%				< 0.0007	< 0.0006	< 0.00032	< 0.00032	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00042	< 0.00031	< 0.00037	0%				< 0.00040	< 0.00030	< 0.00038	< 0.00038	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
J Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
U Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatio
J+ Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
J- Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
UJ Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-811S 10/29/2012	MW-811S 7/16/2013	MW-811S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-812S 10/31/2012	MW-812S 7/16/2013	MW-812S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.000075 J	0.000028 J	0.000073 J	100%	0.000059	0.000028	0.000075	0.000031 J	0.000024 J	< 0.000041	67%	0.000032	0.000024	0.000041
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.0001 J	0.000054 J	0.000073 J	100%	0.000076	0.000054	0.0001	0.00014 J	0.00013 J	0.0001 J	100%	0.000123	0.0001	0.00014
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.000054* J B	*0.000065* J B	*0.00028* J B	100%	0.000133	0.000054	0.00028	*0.000084* J B	*0.000059* J B	*0.000073* J B	100%	0.000072	0.000059	0.000084
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.000032* J B	*0.000032* J B	*0.000073* J B	100%	0.000046	0.000032	0.000073	< 0.000015	< 0.000015	< 0.000011	0%			
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.0000099	*0.000015* J B	< 0.000023	33%	0.000016	0.0000099	0.000023	< 0.00001	0.000011 J	< 0.000023	33%	0.000015	0.00001	0.000023
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00002 J	0.000022 J	< 0.00002	67%	0.000021	0.00002	0.000022	0.000015 J	< 0.00001	< 0.00002	33%	0.000015	0.00001	0.00002
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	0.000019 J	< 0.000011	33%	0.000014	0.000011	0.000019	< 0.000013	0.000015 J	< 0.000011	33%	0.000013	0.000011	0.000015
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.000016	< 0.000017	0%				< 0.000016	< 0.000016	< 0.000017	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.00002 J	0.000016 J	0.000031 J	100%	0.000022	0.000016	0.000031	< 0.000013	< 0.000013	< 0.00002	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000015	< 0.000015	0%				< 0.000015	0.000016 J	< 0.000015	33%	0.000015	0.000015	0.000016
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.00026 J	0.00044 J	0.0013	100%	0.000667	0.00026	0.0013	0.00007 J	0.000017 J	< 0.000023	67%	0.000037	0.000017	0.00007
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.000028 J	0.000051 J	< 0.00021	67%	0.000096	0.000028	0.00021	0.000018 J	0.000037 J	< 0.00021	67%	0.000088	0.000018	0.00021
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	0.000014 J	< 0.000011	33%	0.000013	0.000011	0.000014	< 0.000013	0.000013 J	< 0.000011	33%	0.000012	0.000011	0.000013
Naphthalene	91-20-3	31	NE	2	2	0.013	0.0015	0.00098	0.00093	100%	0.001137	0.00093	0.0015	0.00013 J	0.0001 J	< 0.00018 U	67%	0.000137	0.0001	0.00018
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.00025 J	0.00037 J	0.0011	100%	0.000573	0.00025	0.0011	0.000022 J	0.000053 J	< 0.000043	67%	0.000039	0.000022	0.000053
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.00024 J	0.00026 J	*0.00084* B	100%	0.000447	0.00024	0.00084	< 0.000019	< 0.000019	< 0.000017	0%			
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00039	< 0.00061	0%				< 0.00040	< 0.00040	< 0.00061	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.00039	< 0.00076	0%				< 0.0006	< 0.0004	< 0.00076	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00078	< 0.00066	0%				< 0.00030	< 0.00080	< 0.00066	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00049	< 0.00065	0%				< 0.00050	< 0.00050	< 0.00065	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00078	< 0.00077	0%				< 0.00040	< 0.00080	< 0.00077	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.00069	< 0.00064	0%				< 0.0007	< 0.0007	< 0.00064	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00099	< 0.00039	< 0.00071	0%				< 0.001	< 0.0004	< 0.00071	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.00031	0%				< 0.0013	< 0.0013	< 0.00031	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00078	< 0.00049	0%				< 0.00050	< 0.00080	< 0.00049	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00078	< 0.00059	0%				< 0.00050	< 0.00080	< 0.00059	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00039	< 0.00074	0%				< 0.00050	< 0.00040	< 0.00074	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.00049	< 0.00075	0%				< 0.0006	< 0.0005	< 0.00075	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.00088	< 0.00095	0%				< 0.0006	< 0.0009	< 0.00095	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.00059	< 0.0014	0%				< 0.0009	< 0.0006	< 0.0014	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00069	< 0.00035	0%				< 0.00050	< 0.00070	< 0.00035	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00059	< 0.0007	0%				< 0.00050	< 0.00060	< 0.0007	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00059	< 0.00072	0%				< 0.00050	< 0.00060	< 0.00072	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0008	< 0.00086	0%				< 0.0020	< 0.0008	< 0.00086	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.0002	< 0.052	0%				< 0.0023	< 0.0002	< 0.052	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00059	< 0.00089	0%				< 0.0006	< 0.0008	< 0.00089	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.00039	< 0.0008	0%				< 0.001	< 0.0004	< 0.0008	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00039	< 0.00071	0%				< 0.0006	< 0.0004	< 0.00071	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	< 0.00040	< 0.00088	< 0.0012	0%				< 0.00040	*0.00210* J B	< 0.0012	33%	0.001233	0.0004	0.0021
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.0016	< 0.00095	0%				< 0.0006	< 0.0016	< 0.00095	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00069	< 0.0014	0%				< 0.00040	< 0.00070	< 0.0014	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00069	< 0.00071	0%				< 0.00040	< 0.00070	< 0.00071	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.00059 J	< 0.00088	< 0.00085	33%	0.000773	0.00059	0.00088	0.0017 J	0.0013 J	< 0.00085	67%	0.001283	0.00085	0.0017
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.0011	< 0.00073	0%				< 0.0006	< 0.0011	< 0.00073	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00098	< 0.001	0%				< 0.00050	< 0.00100	< 0.001	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.00069	< 0.001	0%				< 0.0006	< 0.0007	< 0.001	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00059	< 0.00042	0%				< 0.00050	< 0.00060	< 0.00042	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.00059	< 0.001	0%				< 0.0006	< 0.0006	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.00059	< 0.00083	0%				< 0.0006	< 0.0006	< 0.00083	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.00039	< 0.00082	0%				< 0.0006	< 0.0004	< 0.00082	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.0021	< 0.00095	0%				< 0.001	< 0.0021	< 0.00095	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.00029	< 0.001	0%				< 0.0006	< 0.0003	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00049	< 0.00075	0%				< 0.00040	< 0.00050	< 0.00075	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.00059	< 0.00079	0%				< 0.0006	< 0.0006	< 0.00079	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00069	< 0.00059	< 0.00039	0%				< 0.0007	< 0.0006	< 0.00039	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.00330 J	0.00880 J	0.058	100%	0.023367	0.0033	0.058	< 0.00040	0.002 J	0.00044 J	67%	0.000947	0.0004	0.002

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-813S 10/31/2012	MW-813S 7/15/2013	MW-813S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-814S 10/29/2012	MW-814S 7/16/2013	MW-814S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00029 J	0.00015 J	0.00019 J	100%	0.000210	0.00015	0.00029	0.000065 J	0.000023 J	< 0.000039	67%	0.000042	0.000023	0.000065
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00006 J	0.00006 J	0.000085 J	100%	0.000068	0.00006	0.000085	0.000038 J	0.000035 J	0.00004 J	100%	0.000038	0.000035	0.00004
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.00004* J B	*0.000045* J B	*0.000085* J B	100%	0.000057	0.00004	0.000085	0.000032 J	0.000033 J	*0.00005* J B	100%	0.000038	0.000032	0.00005
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	< 0.000015	0.000019 J	0.000021 J	67%	0.000018	0.000015	0.000021	< 0.000015	< 0.000015	0.00002 J	33%	0.000017	0.000015	0.00002
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.0000099	*0.000019* J B	< 0.000023	33%	0.000017	0.0000099	0.000023	< 0.0000099	< 0.0000098	< 0.000022	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000011 J	0.000023 J	< 0.00002	67%	0.000018	0.000011	0.000023	0.000013 J	< 0.0000098	< 0.000019	33%	0.000014	0.0000098	0.000019
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	0.00004 J	< 0.000012	33%	0.000022	0.000012	0.00004	< 0.000013	0.000014 J	< 0.000011	33%	0.000013	0.000011	0.000014
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	0.000018 J	< 0.000017	33%	0.000017	0.000016	0.000018	< 0.000016	< 0.000016	< 0.000016	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	0.000016 J	< 0.00002	33%	0.000016	0.000013	0.00002	< 0.000013	< 0.000013	< 0.000019	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	0.000028 J	< 0.000015	33%	0.000019	0.000015	0.000028	< 0.000015	< 0.000015	< 0.000014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	< 0.0000099	0.000019 J	< 0.000023	33%	0.000017	0.0000099	0.000023	0.00005 J	0.000047 J	< 0.000022	67%	0.000040	0.000022	0.00005
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	< 0.0000099	0.000023 J	< 0.00021	33%	0.000081	0.0000099	0.00021	0.000022 J	0.000029 J	< 0.0002	67%	0.000084	0.000022	0.0002
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	**0.000032** A(GW)	< 0.000012	33%	0.000019	0.000012	0.000032	< 0.000013	< 0.000013	< 0.000011	0%			
Naphthalene	91-20-3	31	NE	2	2	0.013	0.0018	0.00012 J	< 0.000053 U	67%	0.000658	0.000053	0.0018	0.00014 J	0.0024	< 0.0001 U	67%	0.000880	0.0001	0.0024
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	< 0.000013	0.000049 J	< 0.000044	33%	0.000035	0.000013	0.000049	0.000056 J	0.000051 J	< 0.000041	67%	0.000049	0.000041	0.000056
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	< 0.000019	0.000025 J	0.000032 J	67%	0.000025	0.000019	0.000032	< 0.000019	< 0.000019	0.00002 J	33%	0.000019	0.000019	0.00002
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00041	< 0.00063	0%				< 0.00040	< 0.00039	< 0.00059	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.00041	< 0.00078	0%				< 0.00059	< 0.00039	< 0.00073	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00082	< 0.00067	0%				< 0.00030	< 0.00078	< 0.00063	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00052	< 0.00086	0%				< 0.00050	< 0.00049	< 0.00062	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00082	< 0.00079	0%				< 0.00040	< 0.00078	< 0.00074	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.00072	< 0.00065	0%				< 0.00069	< 0.00069	< 0.00061	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00099	< 0.00041	< 0.00072	0%				< 0.00099	< 0.00039	< 0.00068	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.00032	0%				< 0.0013	< 0.0013	< 0.0003	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00082	< 0.0005	0%				< 0.00050	< 0.00078	< 0.00047	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00082	< 0.00061	0%				< 0.00050	< 0.00078	< 0.00057	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00041	< 0.00076	0%				< 0.00050	< 0.00039	< 0.00071	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.00052	< 0.00077	0%				< 0.00059	< 0.00049	< 0.00072	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.00093	< 0.00097	0%				< 0.00059	< 0.00088	< 0.00091	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.00062	< 0.0014	0%				< 0.00089	< 0.00059	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00072	< 0.00036	0%				< 0.00050	< 0.00069	< 0.00034	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00062	< 0.00071	0%				< 0.00050	< 0.00059	< 0.00067	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00062	< 0.00073	0%				< 0.00050	< 0.00059	< 0.00069	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0008	< 0.00088	0%				< 0.0020	< 0.0008	< 0.00083	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.00021	< 0.053	0%				< 0.0023	< 0.0002	< 0.05	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00062	< 0.0009	0%				< 0.00059	< 0.00059	< 0.00085	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.00041	< 0.00082	0%				< 0.00099	< 0.00039	< 0.00077	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00041	< 0.00072	0%				< 0.00059	< 0.00039	< 0.00068	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00074* J B	*0.00190* J B	< 0.0013	67%	0.001313	0.00074	0.0019	*0.00079* J B	< 0.00088	< 0.0012	33%	0.000957	0.00079	0.0012
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.0016	< 0.00097	0%				< 0.00059	< 0.0016	< 0.00091	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00072	< 0.0014	0%				< 0.00040	< 0.00069	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00072	< 0.00072	0%				< 0.00040	< 0.00069	< 0.00068	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0023 J	0.0016 J	< 0.00087	67%	0.001590	0.00087	0.0023	0.0025 J	< 0.00088	< 0.00082	33%	0.001400	0.00082	0.0025
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.0011	< 0.00074	0%				< 0.00059	< 0.0011	< 0.0007	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00100	< 0.001	0%				< 0.00050	< 0.00098	< 0.00096	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.00072	< 0.001	0%				< 0.00059	< 0.00069	< 0.00096	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00062	< 0.00043	0%				< 0.00050	< 0.00059	< 0.0004	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.00062	< 0.0011	0%				< 0.00059	< 0.00059	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.00062	< 0.00085	0%				< 0.00059	< 0.00059	< 0.0008	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.00041	< 0.00084	0%				< 0.00059	< 0.00039	< 0.00079	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.0022	< 0.00097	0%				< 0.00099	< 0.0021	< 0.00091	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.00031	< 0.0011	0%				< 0.00059	< 0.00029	< 0.00099	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00052	< 0.00077	0%				< 0.00040	< 0.00049	< 0.00072	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.00062	< 0.00081	0%				< 0.00059	< 0.00059	< 0.00076	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00069	< 0.00062	< 0.00033	0%				< 0.00069	< 0.00059	< 0.00031	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00040	< 0.00031	< 0.00039	0%				< 0.00040	< 0.00029	0.0035 J	33%	0.001397	0.00029	0.0035

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-815D 10/29/2012	MW-815D 7/15/2013	MW-815D 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-815S 10/29/2012	MW-815S 7/17/2013	MW-815S 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00014 J	0.000035 J	< 0.00004	67%	0.000072	0.000035	0.00014	0.000053 J	0.00003 J	< 0.00004	67%	0.000041	0.00003	0.000053
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.000099 J	0.00003 J	0.000052 J	100%	0.000060	0.00003	0.000099	0.00002 J	0.000015 J	0.00002 J	100%	0.000018	0.000015	0.00002
Anthracene	120-12-7	0.043	NE	31	31	0.000035	0.000031 J	0.000026 J	*< 0.000041* U	67%	0.000033	0.000026	0.000041	0.00003 J	0.000021 J	*< 0.000051* U	67%	0.000034	0.000021	0.000051
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.000024 J	0.000021 J	< 0.000011	67%	0.000019	0.000011	0.000024	< 0.000015	< 0.000016	< 0.000011	0%			
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.0000099	*0.000024* J B	< 0.000023	33%	0.000019	0.0000099	0.000024	< 0.00001	< 0.000011	< 0.000022	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000021 J	0.000039 J	< 0.00002	67%	0.000027	0.00002	0.000039	< 0.00001	< 0.000011	< 0.000019	0%			
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	0.000047 J	< 0.000011	33%	0.000024	0.000011	0.000047	< 0.000013	< 0.000014	< 0.000011	0%			
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	0.000024 J	< 0.000016	33%	0.000019	0.000016	0.000024	< 0.000016	< 0.000017	< 0.000016	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	0.00002 J	< 0.00002	33%	0.000018	0.000013	0.00002	< 0.000013	< 0.000014	< 0.000019	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	0.000037 J	< 0.000014	33%	0.000022	0.000014	0.000037	< 0.000015	< 0.000016	< 0.000014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.000041 J	0.000024 J	< 0.000023	67%	0.000029	0.000023	0.000041	< 0.00001	0.000017 J	< 0.000022	33%	0.000016	0.00001	0.000022
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.0000099 J	0.000028 J	< 0.00021	67%	0.000083	0.0000099	0.00021	0.000041 J	0.000018 J	< 0.0002	67%	0.000086	0.000018	0.0002
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	**0.000039** A(GW)	< 0.000011	33%	0.000021	0.000011	0.000039	< 0.000013	< 0.000014	< 0.000011	0%			
Naphthalene	91-20-3	31	NE	2	2	0.013	0.00093	0.00022 J	0.00026 J	100%	0.000470	0.00022	0.00093	0.00046 J	0.00066	0.00078	100%	0.000633	0.00046	0.00078
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000029 J	0.000071 J	< 0.000042	67%	0.000047	0.000029	0.000071	0.000021 J	0.000049 J	< 0.000042	67%	0.000037	0.000021	0.000049
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	< 0.000019	< 0.00002	< 0.000016	0%				0.00012 J	0.000067 J	< 0.000092 U	67%	0.000093	0.000067	0.00012
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00043	< 0.00061	0%				< 0.00040	< 0.00043	< 0.0006	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.00043	< 0.00075	0%				< 0.0006	< 0.00043	< 0.00074	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00085	< 0.00065	0%				< 0.00030	< 0.00085	< 0.00064	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00053	< 0.00064	0%				< 0.00050	< 0.00053	< 0.00063	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00085	< 0.00076	0%				< 0.00040	< 0.00085	< 0.00076	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.00074	< 0.00063	0%				< 0.0007	< 0.00074	< 0.00062	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00099	< 0.00043	< 0.0007	0%				< 0.001	< 0.00043	< 0.00069	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0014	< 0.00031	0%				< 0.0013	< 0.0014	< 0.00031	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00085	< 0.00048	0%				< 0.00050	< 0.00085	< 0.00048	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00085	< 0.00059	0%				< 0.00050	< 0.00085	< 0.00058	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00043	< 0.00073	0%				< 0.00050	< 0.00043	< 0.00072	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.00053	< 0.00074	0%				< 0.0006	< 0.00053	< 0.00073	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.00096	< 0.00094	0%				< 0.0006	< 0.00096	< 0.00093	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.00064	< 0.0013	0%				< 0.0009	< 0.00064	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00074	< 0.00035	0%				< 0.00050	< 0.00074	< 0.00035	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00064	< 0.00069	0%				< 0.00050	< 0.00064	< 0.00068	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00064	< 0.00071	0%				< 0.00050	< 0.00064	< 0.0007	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0009	< 0.00086	0%				< 0.0020	< 0.0009	< 0.00085	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.00021	< 0.052	0%				< 0.0023	< 0.00021	< 0.051	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00064	< 0.00088	0%				< 0.0006	< 0.00064	< 0.00087	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.00043	< 0.00079	0%				< 0.001	< 0.00043	< 0.00079	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00043	< 0.0007	0%				< 0.0006	< 0.00043	< 0.00069	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00068* J B	*0.00230* J B	< 0.0012	67%	0.001393	0.00068	0.0023	< 0.00040	< 0.00096	< 0.0012	0%			
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.0017	< 0.00094	0%				< 0.0006	< 0.0017	< 0.00093	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00074	< 0.0013	0%				< 0.00040	< 0.00074	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00074	< 0.0007	0%				< 0.00040	< 0.00074	< 0.00069	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0026 J	0.0019 J	< 0.00085	67%	0.001783	0.00085	0.0026	< 0.0004	0.0057 J	< 0.00084	33%	0.002313	0.0004	0.0057
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.0012	< 0.00072	0%				< 0.0006	< 0.0012	< 0.00071	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00110	< 0.00099	0%				< 0.00050	< 0.00110	< 0.00098	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.00074	< 0.00099	0%				< 0.0006	< 0.00074	< 0.00098	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00064	< 0.00041	0%				< 0.00050	< 0.00064	< 0.00041	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.00064	< 0.001	0%				< 0.0006	< 0.00064	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.00064	< 0.00082	0%				< 0.0006	< 0.00064	< 0.00082	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.00043	< 0.00081	0%				< 0.0006	< 0.00043	< 0.00081	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.0022	< 0.00094	0%				< 0.001	< 0.0022	< 0.00093	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.00032	< 0.001	0%				< 0.0006	< 0.00032	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00053	< 0.00074	0%				< 0.00040	< 0.00053	< 0.00073	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.00064	< 0.00078	0%				< 0.0006	< 0.00064	< 0.00078	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00069	< 0.00064	< 0.00032	0%				< 0.0007	< 0.00064	< 0.00032	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00040	< 0.00032	< 0.00038	0%				< 0.00040	0.014	< 0.00038	33%	0.004927	0.00038	0.014

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-816D 11/1/2012	MW-816D 7/17/2013	MW-816D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-816S 11/1/2012	MW-816S 7/16/2013	MW-816S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00018 J	0.00028 J	0.00015 J	100%	0.000203	0.00015	0.00028	0.0015	0.001	0.0018 J	100%	0.001433	0.001	0.0018
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00043 J	0.00088	0.0017	100%	0.001003	0.00043	0.0017	0.0027	0.0034	0.0097	100%	0.005267	0.0027	0.0097
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.000084* J B	*0.00014* J B	*0.00023* J B	100%	0.000151	0.000084	0.00023	*0.00041* J B	*0.00042* J B	*0.0015* J B	100%	0.000777	0.00041	0.0015
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	< 0.000015	0.000023 J	*0.000031* J B	67%	0.000023	0.000015	0.000031	*0.0001* J B	*0.000083* J B	*0.00031* J B	100%	0.000164	0.000083	0.00031
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.00001	< 0.00001	< 0.000022	0%				*0.000039* J B	*0.000023* J B	< 0.00023	67%	0.000097	0.000023	0.00023
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000016 J	< 0.00001	< 0.000019	33%	0.000015	0.00001	0.000019	0.000059 J	0.000037 J	< 0.0002	67%	0.000099	0.000037	0.0002
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	< 0.000013	< 0.000011	0%				0.000031 J	0.000015 J	< 0.00011	67%	0.000052	0.000015	0.00011
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.000016	< 0.000016	0%				< 0.000016	0.000017 J	< 0.00016	33%	0.000064	0.000016	0.00016
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	0.000013 J	< 0.000019	33%	0.000015	0.000013	0.000019	0.000062 J	0.00004 J	< 0.0002	67%	0.000101	0.00004	0.0002
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000015	< 0.000014	0%				< 0.000015	< 0.000015	< 0.00014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.000061 J	0.000041 J	0.00011 J	100%	0.000071	0.000041	0.00011	0.0016	0.0014	*0.0034* J B	100%	0.002133	0.0014	0.0034
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.000066 J	0.00014 J	< 0.0002	67%	0.000135	0.000066	0.0002	0.0013	0.0021	0.0063	100%	0.003233	0.0013	0.0063
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.000013	< 0.000011	0%				< 0.000013	0.000013 J	< 0.00011	33%	0.000045	0.000013	0.00011
Naphthalene	91-20-3	31	NE	2	2	0.013	0.0028	0.0057	0.0017	100%	0.003400	0.0017	0.0057	*0.016* B	0.0096	*0.072* B	100%	0.032533	0.0096	0.072
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000098 J	0.00017 J	0.0001 J	100%	0.000123	0.000098	0.00017	0.0023	0.0032	*0.01* B	100%	0.005167	0.0023	0.01
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	< 0.000019	0.000052 J	0.000041 J	67%	0.000037	0.000019	0.000052	*0.00092* B	*0.0011* B	*0.0022* J B	100%	0.001407	0.00092	0.0022
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00041	< 0.0006	0%				< 0.00041	< 0.00040	< 0.00061	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00061	< 0.00041	< 0.00074	0%				< 0.00061	< 0.0004	< 0.00075	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00082	< 0.00064	0%				< 0.00031	< 0.00080	< 0.00065	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00051	< 0.00051	< 0.00063	0%				< 0.00051	< 0.00050	< 0.00064	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00082	< 0.00076	0%				< 0.00041	< 0.00080	< 0.00076	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00071	< 0.00071	< 0.00062	0%				< 0.00071	< 0.0007	< 0.00063	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	*0.14* B	*0.32* B	0.083	100%	0.181000	0.083	0.32	0.013	0.022	0.013	100%	0.016000	0.013	0.022
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.00031	0%				< 0.0013	< 0.0013	< 0.00031	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00051	< 0.00082	< 0.00048	0%				< 0.00051	< 0.00080	< 0.00048	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00051	< 0.00082	< 0.00058	0%				< 0.00051	< 0.00080	< 0.00059	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00051	< 0.00041	< 0.00072	0%				< 0.00051	< 0.00040	< 0.00073	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00061	< 0.00051	< 0.00073	0%				< 0.00061	< 0.0005	< 0.00074	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00061	< 0.00092	< 0.00093	0%				< 0.00061	< 0.0009	< 0.00094	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00091	< 0.00061	< 0.0013	0%				< 0.00092	< 0.0006	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00051	< 0.00071	< 0.00035	0%				< 0.00051	< 0.00070	< 0.00035	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00051	< 0.00061	< 0.00068	0%				< 0.00051	< 0.00060	< 0.00069	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00051	< 0.00061	< 0.0007	0%				< 0.00051	< 0.00060	< 0.00071	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0008	< 0.00085	0%				< 0.0020	< 0.0008	< 0.00086	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.0002	< 0.051	0%				< 0.0023	< 0.0002	< 0.052	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00061	< 0.00061	< 0.00087	0%				< 0.00061	< 0.0006	< 0.00088	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.00041	< 0.00079	0%				< 0.001	< 0.0004	< 0.00079	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00061	< 0.00041	< 0.00069	0%				< 0.00061	< 0.0004	< 0.0007	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00130* J B	< 0.00092	< 0.0012	33%	0.001140	0.00092	0.0013	*0.00077* J B	*0.00140* J B	< 0.0012	67%	0.001123	0.00077	0.0014
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00061	< 0.0016	< 0.00093	0%				< 0.00061	< 0.0016	< 0.00094	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00071	< 0.0013	0%				< 0.00041	< 0.00070	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00071	< 0.00069	0%				< 0.00041	< 0.00070	< 0.0007	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0036 J	0.0089 J	< 0.00084	67%	0.004447	0.00084	0.0089	0.004 J	< 0.0009	< 0.00085	33%	0.001917	0.00085	0.004
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00061	< 0.0011	< 0.00071	0%				< 0.00061	< 0.0011	< 0.00072	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00051	< 0.00100	< 0.00098	0%				< 0.00051	< 0.00100	< 0.00099	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00061	< 0.00071	< 0.00098	0%				< 0.00061	< 0.0007	< 0.00099	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00051	< 0.00061	< 0.00041	0%				< 0.00051	< 0.00060	< 0.00041	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00061	< 0.00061	< 0.001	0%				< 0.00061	< 0.0006	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00061	< 0.00061	< 0.00082	0%				< 0.00061	0.00062 J	< 0.00082	33%	0.000683	0.00061	0.00082
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00061	< 0.00041	< 0.00081	0%				< 0.00061	< 0.0004	< 0.00081	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0021	< 0.00093	0%				< 0.001	< 0.0021	< 0.00094	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00061	< 0.00031	< 0.001	0%				< 0.00061	< 0.0003	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00051	< 0.00073	0%				< 0.00041	< 0.00050	< 0.00074	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00061	< 0.00061	< 0.00078	0%				< 0.00061	< 0.0006	< 0.00078	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00071	< 0.00061	< 0.00032	0%				< 0.00071	< 0.0006	< 0.00032	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00040	< 0.00031	< 0.00038	0%				0.085	0.044	0.018	100%	0.049000	0.018	0.085

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-817D 11/1/2012	MW-817D Dup 11/1/2012	MW-817D 7/17/2013	MW-817D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-817S 11/1/2012	MW-817S 7/17/2013	MW-817S 9/14/2017	% Detect	Average
PAHs (mg/L)																			
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00048 J	0.00047 J	0.00041 J	0.00031 J	100%	0.000418	0.00031	0.00048	*0.085* B	0.0059	0.012	100%	0.03430
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.0005	0.00072	0.00058	0.00072	100%	0.000630	0.0005	0.00072	0.0021	0.001	0.00088	100%	0.00133
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.0003* J B	*0.0004* J B	*0.00032* J B	*0.00039* J B	100%	0.000353	0.0003	0.0004	*0.0042* B	*0.00068* B	*0.00041* J B	100%	0.00176
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.00011* B	*0.00015* B	*0.000055* J B	*0.000062* J B	100%	0.000094	0.000055	0.00015	*0.001* B	***0.00034*** B	*0.00014* B	100%	0.00049
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	*0.000061* J B	*0.000088* J B	*0.000031* J B	*0.00018* B	100%	0.000090	0.000031	0.00018	***0.00086*** A(MCL,I,DCL),B	***0.00086*** A(MCL,I,DCL),B	***0.00032*** A(MCL),B	100%	0.00068
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00011	0.00012	0.00004 J	0.000042 J	100%	0.000078	0.00004	0.00012	0.00085	0.00086	0.00014	100%	0.00062
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.000024 J	0.000046 J	0.000022 J	0.000021 J	100%	0.000028	0.000021	0.000046	0.00032	0.00044	0.00014 J	100%	0.00030
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.000027 J	0.000051 J	0.000019 J	0.000021 J	100%	0.000030	0.000019	0.000051	0.00028	0.00026	0.000032 J	100%	0.00019
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.000084 J	0.000096 J	0.000034 J	0.000042 J	100%	0.000064	0.000034	0.000096	0.00065	0.00032 J	0.000053 J	100%	0.00034
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000015	< 0.000016	< 0.000015	0%				0.000084 J	0.0001	0.000021 J	100%	0.00007
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.00059	0.00087	0.00042 J	0.00044 J	100%	0.000580	0.00042	0.00087	*0.018* B	*0.0022* B	0.0017	100%	0.00730
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.001	0.00092	0.0012	0.00096	100%	0.001020	0.00092	0.0012	*0.03* B	0.0031	0.0016	100%	0.01157
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	**0.000027** A(GW)	**0.000048** A(GW)	0.000021 J	< 0.000011	75%	0.000027	0.000011	0.000048	0.00036 A(GW)	**0.00045** A(GW)	**0.00028** A(GW)	100%	0.00036
Naphthalene	91-20-3	31	NE	2	2	0.013	0.0046	0.0047	0.0034	0.0043	100%	0.004250	0.0034	0.0047	*0.13* B	0.0077	0.00059	100%	0.04610
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.0015	0.0018	0.0015	0.0014	100%	0.001550	0.0014	0.0018	0.0027	0.00057	0.000095 J	100%	0.00112
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	*0.00044* J B	*0.00064* B	0.00028 J	0.00027 J	100%	0.000408	0.00027	0.00064	*0.0071* B	*0.0014* B	*0.001* B	100%	0.00317
SVOCs (mg/L)																			
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00040	< 0.00044	< 0.00061	0%				< 0.00040	< 0.00040	< 0.00062	0%	
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.0006	< 0.00044	< 0.00076	0%				< 0.00061	< 0.0004	< 0.00077	0%	
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00030	< 0.00088	< 0.00066	0%				< 0.00030	< 0.00080	< 0.00066	0%	
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00050	< 0.00055	< 0.00065	0%				< 0.00051	< 0.00050	< 0.00065	0%	
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00040	< 0.00088	< 0.00077	0%				< 0.00040	< 0.00080	< 0.00078	0%	
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.0007	< 0.00077	< 0.00064	0%				< 0.00071	< 0.0007	< 0.00064	0%	
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00099	< 0.001	0.0013 J	0.0011 J	50%	0.001098	0.00099	0.0013	< 0.001	< 0.0004	< 0.00072	0%	
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.0014	< 0.00031	0%				< 0.0013	< 0.0013	< 0.00032	0%	
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00050	< 0.00088	< 0.00049	0%				< 0.00051	< 0.00080	< 0.00049	0%	
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00050	< 0.00088	< 0.00059	0%				< 0.00051	< 0.00080	< 0.0006	0%	
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00050	< 0.00044	< 0.00074	0%				< 0.00051	< 0.00040	< 0.00075	0%	
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.0006	< 0.00055	< 0.00075	0%				< 0.00061	< 0.0005	< 0.00076	0%	
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.0006	< 0.00099	< 0.00095	0%				< 0.00061	< 0.0009	< 0.00096	0%	
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.0009	< 0.00066	< 0.0014	0%				< 0.00091	< 0.0006	< 0.0014	0%	
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00050	< 0.00077	< 0.00035	0%				< 0.00051	< 0.00070	< 0.00036	0%	
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00050	< 0.00066	< 0.0007	0%				< 0.00051	< 0.00060	< 0.00071	0%	
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00050	< 0.00066	< 0.00072	0%				< 0.00051	< 0.00060	< 0.00073	0%	
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0020	< 0.0009	< 0.00086	0%				< 0.0020	< 0.0008	< 0.00087	0%	
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.0023	< 0.00022	< 0.052	0%				< 0.0023	< 0.0002	< 0.053	0%	
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00059	< 0.0006	< 0.00066	< 0.00089	0%				< 0.00061	< 0.0006	< 0.00089	0%	
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.001	< 0.00044	< 0.0008	0%				< 0.001	< 0.0004	< 0.00081	0%	
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.0006	< 0.00044	< 0.00071	0%				< 0.00061	< 0.0004	< 0.00072	0%	
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00120* J B	*0.00120* J B	< 0.00099	< 0.0012	50%	0.001148	0.00099	0.0012	< 0.00040	< 0.00090	< 0.0013	0%	
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.0006	< 0.0018	< 0.00095	0%				< 0.00061	< 0.0016	< 0.00096	0%	
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	0.00050 J	< 0.00040	< 0.00077	< 0.0014	25%	0.000768	0.0004	0.0014	< 0.00040	< 0.00070	< 0.0014	0%	
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00040	< 0.00077	< 0.00071	0%				< 0.00040	< 0.00070	< 0.00072	0%	
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0029 J	0.0021 J	*0.011* B	< 0.00085	75%	0.004213	0.00085	0.011	0.0026 J	0.0074 J	< 0.00086	67%	0.00362
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.0006	< 0.0012	< 0.00073	0%				< 0.00061	< 0.0011	< 0.00074	0%	
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00050	< 0.00110	< 0.001	0%				< 0.00051	< 0.00100	< 0.001	0%	
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.0006	< 0.00077	< 0.001	0%				< 0.00061	< 0.0007	< 0.001	0%	
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00050	< 0.00066	< 0.00042	0%				< 0.00051	< 0.00060	< 0.00042	0%	
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.0006	< 0.00066	< 0.001	0%				< 0.00061	< 0.0006	< 0.0011	0%	
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.0006	< 0.00066	< 0.00083	0%				< 0.00061	< 0.0006	< 0.00084	0%	
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.0006	< 0.00044	< 0.00082	0%				< 0.00061	< 0.0004	< 0.00083	0%	
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.001	< 0.0023	< 0.00095	0%				< 0.001	< 0.0021	< 0.00096	0%	
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.0006	< 0.00033	< 0.001	0%				< 0.00061	< 0.0003	< 0.001	0%	
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00040	< 0.00055	< 0.00075	0%				< 0.00040	< 0.00050	< 0.00076	0%	
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.0006	< 0.00066	< 0.00079	0%				< 0.00061	< 0.0006	< 0.0008	0%	
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00069	< 0.0007	< 0.00066	< 0.00032	0%				< 0.00071	< 0.0006	< 0.0006	0%	
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00040	< 0.00040	< 0.00033	< 0.00039	0%				0.00860 J	< 0.00030	< 0.00039	33%	0.00310

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
J Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
U Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
J+ Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
J- Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
UJ Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected
PAHs (mg/L)								
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.0059	0.085
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00088	0.0021
Anthracene	120-12-7	0.043	NE	31	31	0.000035	0.00041	0.0042
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.00014	0.001
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	0.00032	0.00086
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00014	0.00086
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.00014	0.00044
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.000032	0.00028
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.000053	0.00065
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	0.000021	0.0001
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.0017	0.018
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.0016	0.03
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	0.00028	0.00045
Naphthalene	91-20-3	31	NE	2	2	0.013	0.00059	0.13
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000095	0.0027
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.001	0.0071
SVOCs (mg/L)								
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030		
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014		
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE		
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094		
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049		
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011		
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1		
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019		
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044		
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081		
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396		
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024		
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE		
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045		
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023		
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015		
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE		
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06		
Benzidine	92-87-5	NE	NE	NE	NE	NE		
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE		
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19		
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE		
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003		
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023		
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11		
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE		
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.00086	0.0074
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030		
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$		
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053		
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077		
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008		
Isophorone	78-59-1	12,000	NE	3	3	0.92		
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE		
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE		
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE		
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE		
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE		
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004		
Phenol	108-95-2	83,000	NE	31	31	0.180	0.0003	0.0086

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatio
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-818S 11/1/2012	MW-818S 7/17/2013	MW-818S 9/14/2017	MW-818S DUP 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-819D 11/2/2012	MW-819D 7/17/2013	MW-819D 9/12/2017	% Detect	Average	Minimum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	*0.2* B	*0.063* B	*0.08* B	*0.083* B	100%	0.10650	0.063	0.2	0.000068 J	0.000048 J	< 0.00004	67%	0.000052	0.00004
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.0091	0.0022	0.0084	0.009	100%	0.00718	0.0022	0.0091	0.00029 J	0.00028 J	0.00011 J	100%	0.000227	0.00011
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.006* B	*0.0017* B	*0.0023* B	*0.0024* B	100%	0.00310	0.0017	0.006	0.00002 J	0.000024 J	*0.000041* J B	100%	0.000028	0.00002
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.00065* B	*0.00026* B	*0.00043* B	*0.00042* B	100%	0.00044	0.00026	0.00065	0.000017 J	0.000016 J	0.00002 J	100%	0.000018	0.000016
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	*0.00011* B	*0.000096* J B	***0.00031*** A(MCL),B	***0.0003*** A(MCL),B	100%	0.00020	0.000096	0.00031	< 0.0000099	< 0.000011	< 0.000022	0%		
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00017	0.00011	0.00016	0.00015	100%	0.00015	0.00011	0.00017	0.00002 J	< 0.000011	< 0.000019	33%	0.000017	0.000011
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.00003 J	0.000051 J	0.000053 J	0.000062 J	100%	0.00005	0.00003	0.000062	0.000022 J	< 0.000014	0.00023	67%	0.000089	0.000014
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.000044 J	0.000045 J	0.000053 J	0.000052 J	100%	0.00005	0.000044	0.000053	< 0.000016	< 0.000018	0.00017	33%	0.000068	0.000016
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.00038 J	0.00014 J	0.00026 J	0.00026 J	100%	0.00026	0.00014	0.00038	< 0.000013	< 0.000014	0.00002 J	33%	0.000016	0.000013
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	0.000021 J	< 0.000015	0.000021 J	50%	0.00002	0.000015	0.000021	< 0.000015	< 0.000016	0.00019	33%	0.000074	0.000015
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	*0.016* B	*0.0039* B	*0.0089* B	*0.0089* B	100%	0.00943	0.0039	0.016	< 0.0000099	0.000022 J	< 0.000022	33%	0.000018	0.0000099
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	*0.062* B	*0.03* B	*0.032* B	*0.034* B	100%	0.03950	0.03	0.062	0.000096 J	0.000074 J	< 0.0002	67%	0.000123	0.000074
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	**0.000026** A(GW)	**0.000048** A(GW)	**0.00023** A(GW)	**0.00024** A(GW)	100%	0.00014	0.000026	0.00024	< 0.000013	< 0.000014	**0.0004** A(GW)	33%	0.000142	0.000013
Naphthalene	91-20-3	31	NE	2	2	0.013	*0.54* B	*0.12* B	*0.15* B	*0.16* B	100%	0.24250	0.12	0.54	*0.016* B	*0.013* B	0.0035	100%	0.010833	0.0035
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	*0.024* B	*0.0054* B	*0.0076* B	*0.0076* B	100%	0.01115	0.0054	0.024	0.000066 J	0.00009 J	< 0.000012	67%	0.000066	0.000042
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	*0.01* B	*0.0024* B	*0.0048* B	*0.0047* B	100%	0.00548	0.0024	0.01	< 0.000019	< 0.000021	0.0001 J	33%	0.000047	0.000019
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00043	< 0.00062	< 0.00061	0%				< 0.00040	< 0.00044	< 0.0006	0%		
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.00043	< 0.00077	< 0.00075	0%				< 0.00059	< 0.00044	< 0.00074	0%		
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00087	< 0.00066	< 0.00065	0%				< 0.00030	< 0.00088	< 0.00064	0%		
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00054	< 0.00065	< 0.00064	0%				< 0.00050	< 0.00055	< 0.00063	0%		
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00087	< 0.00078	< 0.00076	0%				< 0.00040	< 0.00088	< 0.00076	0%		
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.00076	< 0.00064	< 0.00063	0%				< 0.00069	< 0.00077	< 0.00062	0%		
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00099	< 0.00043	< 0.00072	< 0.0007	0%				0.0031 J	0.0041 J	0.004 J	100%	0.003733	0.0031
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0014	< 0.00032	< 0.00031	0%				< 0.0013	< 0.0014	< 0.00031	0%		
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00087	< 0.00049	< 0.00048	0%				< 0.00050	< 0.00088	< 0.00048	0%		
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00087	< 0.0006	< 0.00059	0%				< 0.00050	< 0.00088	< 0.00058	0%		
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00043	< 0.00075	< 0.00073	0%				< 0.00050	< 0.00044	< 0.00072	0%		
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.00054	< 0.00076	< 0.00074	0%				< 0.00059	< 0.00055	< 0.00073	0%		
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.00098	< 0.00096	< 0.00094	0%				< 0.00059	< 0.00099	< 0.00093	0%		
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.00065	< 0.0014	< 0.0013	0%				< 0.00089	< 0.00066	< 0.0013	0%		
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00076	< 0.00036	< 0.00035	0%				< 0.00050	< 0.00077	< 0.00035	0%		
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00065	< 0.00071	< 0.00069	0%				< 0.00050	< 0.00066	< 0.00068	0%		
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00065	< 0.00073	< 0.00071	0%				< 0.00050	< 0.00066	< 0.0007	0%		
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0009	< 0.00087	< 0.00086	0%				< 0.0020	< 0.0009	< 0.00085	0%		
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.00022	< 0.053	< 0.052	0%				< 0.0023	< 0.00022	< 0.051	0%		
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00065	< 0.00089	< 0.00088	0%				< 0.00059	< 0.00066	< 0.00087	0%		
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.00043	< 0.00081	< 0.00079	0%				< 0.00099	< 0.00044	< 0.00079	0%		
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00043	< 0.00072	< 0.0007	0%				< 0.00059	< 0.00044	< 0.00069	0%		
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00068* J B	< 0.00098	< 0.0013	< 0.0012	25%	0.00104	0.00068	0.0013	*0.00075* J B	< 0.00099	< 0.0012	33%	0.000980	0.00075
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.0017	< 0.00096	< 0.00094	0%				< 0.00059	< 0.0018	< 0.00093	0%		
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00076	< 0.0014	< 0.0013	0%				< 0.00040	< 0.00077	< 0.0013	0%		
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00076	< 0.00072	< 0.0007	0%				< 0.00040	< 0.00077	< 0.00069	0%		
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0024 J	0.0069 J	< 0.00086	< 0.00085	50%	0.00275	0.00085	0.0069	0.0031 J	0.0075 J	< 0.00084	67%	0.003813	0.00084
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.0012	< 0.00074	< 0.00072	0%				< 0.00059	< 0.0012	< 0.00071	0%		
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00110	< 0.001	< 0.00099	0%				< 0.00050	< 0.00110	< 0.00098	0%		
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.00076	< 0.001	< 0.00099	0%				< 0.00059	< 0.00077	< 0.00098	0%		
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00065	< 0.00042	< 0.00041	0%				< 0.00050	< 0.00066	< 0.00041	0%		
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.00065	< 0.0011	< 0.001	0%				< 0.00059	< 0.00066	< 0.001	0%		
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.00065	< 0.00084	< 0.00082	0%				< 0.00059	< 0.00066	< 0.00082	0%		
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.00043	< 0.00083	< 0.00081	0%				< 0.00059	< 0.00044	< 0.00081	0%		
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.0023	< 0.00096	< 0.00094	0%				< 0.00099	< 0.0023	< 0.00093	0%		
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.00033	< 0.001	< 0.001	0%				< 0.00059	< 0.00033	< 0.001	0%		
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00054	< 0.00076	< 0.00074	0%				< 0.00040	< 0.00055	< 0.00073	0%		
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.00065	< 0.0008	< 0.00078	0%				< 0.00059	< 0.00066	< 0.00078	0%		
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00069	< 0.00065	< 0.00033	< 0.00032	0%				< 0.00069	< 0.00066	< 0.00032	0%		
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00040	< 0.00033	< 0.00039	< 0.00038	0%				0.05100	0.06700	0.0042 J	100%	0.040733	0.0042

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatio
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected
PAHs (mg/L)							
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.000068
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00029
Anthracene	120-12-7	0.043	NE	31	31	0.000035	0.000041
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.00002
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00002
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.00023
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.00017
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.00002
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	0.00019
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.000022
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.0002
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	0.0004
Naphthalene	91-20-3	31	NE	2	2	0.013	0.016
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.00009
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.0001
SVOCs (mg/L)							
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	0.0041
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	
Benzidine	92-87-5	NE	NE	NE	NE	NE	
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	0.0012
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0075
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	
Isophorone	78-59-1	12,000	NE	3	3	0.92	
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	
Phenol	108-95-2	83,000	NE	31	31	0.180	0.067

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate

A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-819S 11/2/2012	MW-819S 7/17/2013	MW-819S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-820S 11/2/2012	MW-820S 7/18/2013	MW-820S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.012	0.012	0.015	100%	0.013000	0.012	0.015	*0.047* B	0.03	0.027	100%	0.034667	0.027	0.047
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.011	0.0072	0.014	100%	0.010733	0.0072	0.014	0.0044	0.0011 J	0.0029 J	100%	0.002800	0.0011	0.0044
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.00018* J B	*0.0003* J B	*0.00042* J B	100%	0.000300	0.00018	0.00042	*0.0021* B	*0.0014* J B	*0.0015* J B	100%	0.001667	0.0014	0.0021
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.000078* J B	*0.000042* J B	< 0.00011	67%	0.000077	0.000042	0.00011	*0.00031* J B	*0.0015* J B	*0.00061* J B	100%	0.000807	0.00031	0.0015
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	*0.000049* J B	*0.000046* J B	< 0.00023	67%	0.000108	0.000046	0.00023	*0.00018* J B	***0.00048*** J A(MCL,I,DCL),B	< 0.00022	67%	0.000293	0.00018	0.00048
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000093 J	0.000053 J	< 0.0002	67%	0.000115	0.000053	0.0002	0.00028 J	0.00061 J	0.00051 J	100%	0.000467	0.00028	0.00061
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.000037 J	0.000024 J	< 0.00011	67%	0.000057	0.000024	0.00011	0.00011 J	< 0.00057	0.0002 J	67%	0.000293	0.00011	0.00057
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	0.000023 J	< 0.00017	33%	0.000070	0.000016	0.00017	< 0.000064	< 0.0007	0.0002 J	33%	0.000321	0.000064	0.0007
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.000057 J	0.000038 J	< 0.0002	67%	0.000098	0.000038	0.0002	0.00022 J	0.00083 J	0.0004 J	100%	0.000483	0.00022	0.00083
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000015	< 0.00015	0%				< 0.00006	< 0.00065	< 0.00014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.000043 J	0.000031 J	0.00031 J	100%	0.000221	0.000043	0.00031	0.0018 J	0.0011 J	*0.0021* J B	100%	0.001667	0.0011	0.0021
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.0035	0.003	0.0051 J	100%	0.003867	0.003	0.0051	0.013	0.0094 J	0.0094	100%	0.010600	0.0094	0.013
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	**0.00003** A(GW)	**0.000027** A(GW)	< 0.00011	67%	0.000056	0.000027	0.00011	**0.000088** A(GW)	< 0.00057	< 0.00011	33%	0.000256	0.000088	0.00057
Naphthalene	91-20-3	31	NE	2	2	0.013	*1.5* B	*0.61* B	*1.8* B	100%	1.303333	0.61	1.8	2.8 A(I,DCL),B	2.9 A(I,DCL),B	*1.7* B	100%	2.466667	1.7	2.9
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.00081	0.00064	0.00052 J	100%	0.000657	0.00052	0.00081	*0.0076* B	*0.006* J B	*0.007* B	100%	0.006867	0.006	0.0076
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	*0.00031* J B	0.00021 J	0.00021 J	100%	0.000243	0.00021	0.00031	*0.0015* J B	< 0.00083	*0.0016* J B	67%	0.001310	0.00083	0.0016
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00041	< 0.00041	< 0.0061	0%				< 0.00040	< 0.00043	< 0.006	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00062	< 0.00041	< 0.0076	0%				< 0.0006	< 0.00043	< 0.0074	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00031	< 0.00082	< 0.0066	0%				< 0.00030	< 0.00087	< 0.0064	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00052	< 0.00051	< 0.0065	0%				< 0.00050	< 0.00054	< 0.0063	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00041	< 0.00082	< 0.0077	0%				< 0.00040	< 0.00087	< 0.0075	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00072	< 0.00071	< 0.0064	0%				< 0.0007	< 0.00076	< 0.0062	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	0.014	0.0022 J	< 0.0071	67%	0.007767	0.0022	0.014	0.0038 J	0.0012 J	< 0.0069	67%	0.003967	0.0012	0.0069
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.0031	0%				< 0.0013	< 0.0014	< 0.003	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00052	< 0.00082	< 0.0049	0%				< 0.00050	< 0.00087	< 0.0047	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00052	< 0.00082	< 0.0059	0%				< 0.00050	< 0.00087	< 0.0058	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00052	< 0.00041	< 0.0074	0%				< 0.00050	< 0.00043	< 0.0072	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00062	< 0.00051	< 0.0075	0%				< 0.0006	< 0.00054	< 0.0073	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00062	< 0.00092	< 0.0095	0%				< 0.0006	< 0.00098	< 0.0092	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00093	< 0.00061	< 0.014	0%				< 0.0009	< 0.00065	< 0.013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00052	< 0.00071	< 0.0035	0%				< 0.00050	< 0.00076	< 0.0034	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00052	< 0.00061	< 0.007	0%				< 0.00050	< 0.00065	< 0.0068	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00052	< 0.00061	< 0.0072	0%				< 0.00050	< 0.00065	< 0.007	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0021	< 0.0008	< 0.0086	0%				< 0.0020	< 0.0009	< 0.0084	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0024	< 0.0002	< 0.52	0%				< 0.0023	< 0.00022	< 0.51	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00062	< 0.00061	< 0.0089	0%				< 0.0006	< 0.00065	< 0.0086	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.00041	< 0.008	0%				< 0.001	< 0.00043	< 0.0078	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00062	< 0.00041	< 0.0071	0%				< 0.0006	< 0.00043	< 0.0069	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00150* J B	*0.00092* J B	< 0.012	67%	0.004807	0.00092	0.012	< 0.00040	< 0.00098	< 0.012	0%			
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00062	< 0.0016	< 0.0095	0%				< 0.0006	< 0.0017	< 0.0092	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00041	< 0.00071	< 0.014	0%				< 0.00040	< 0.00076	< 0.013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00041	< 0.00071	< 0.0071	0%				< 0.00040	< 0.00076	< 0.0069	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.006 J	*0.012* B	< 0.0085	67%	0.008833	0.006	0.012	0.0034 J	0.0049 J	< 0.0083	67%	0.005533	0.0034	0.0083
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00062	< 0.0011	< 0.0073	0%				< 0.0006	< 0.0012	< 0.0071	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00052	< 0.00100	< 0.01	0%				< 0.00050	< 0.00110	< 0.0097	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00062	< 0.00071	< 0.01	0%				< 0.0006	< 0.00076	< 0.0097	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00052	< 0.00061	< 0.0042	0%				< 0.00050	< 0.00065	< 0.004	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00062	< 0.00061	< 0.01	0%				< 0.0006	< 0.00065	< 0.01	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00062	< 0.00061	< 0.0083	0%				< 0.0006	< 0.00065	< 0.0081	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00062	< 0.00041	< 0.0082	0%				< 0.0006	< 0.00043	< 0.008	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0021	< 0.0095	0%				< 0.001	< 0.0023	< 0.0092	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00062	< 0.00031	< 0.01	0%				< 0.0008	< 0.00033	< 0.01	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00041	< 0.00051	< 0.0075	0%				< 0.00040	< 0.00054	< 0.0073	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00062	< 0.00061	< 0.0079	0%				< 0.0006	< 0.00065	< 0.0077	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00072	< 0.00061	< 0.0039	0%				< 0.0007	< 0.00065	< 0.0031	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.12000	0.03500	0.031 J	100%	0.062000	0.031	0.12	0.033	0.04800	0.0061 J	100%	0.029033	0.0061	0.048

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-821D 11/2/2012	MW-821D 7/18/2013	MW-821D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-821S 11/2/2012	MW-821S 7/18/2013	MW-821S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00039 J	0.00023 J	0.00017 J	100%	0.000263	0.00017	0.00039	0.02	0.017	0.027	100%	0.021333	0.017	0.027
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00013 J	0.00017 J	0.00033 J	100%	0.000210	0.00013	0.00033	0.0092	0.0033 J	0.006	100%	0.006167	0.0033	0.0092
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.000069* J B	*0.000042* J B	*0.000084* J B	100%	0.000065	0.000042	0.000084	*0.0017* B	*0.00081* J B	*0.0027* J B	100%	0.001737	0.00081	0.0027
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.000043* J B	*0.000041* J B	0.000021 J	100%	0.000035	0.000021	0.000043	*0.00046* B	*0.00059* J B	*0.0013* B	100%	0.000783	0.00046	0.0013
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.00001	*0.000024* J B	< 0.000023	33%	0.000019	0.00001	0.000024	***0.00026*** A(MCL),B	< 0.00022	***0.0027*** A(GW,MCL,I,DCL),B	67%	0.001060	0.00022	0.0027
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000036 J	0.000021 J	0.000021 J	100%	0.000026	0.000021	0.000036	0.00041	< 0.00022	0.0011	67%	0.000577	0.00022	0.0011
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.000029 J	0.000014 J	< 0.000012	67%	0.000018	0.000012	0.000029	0.00012 J	< 0.00029	0.00052 J	67%	0.000310	0.00012	0.00052
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.000017	< 0.000017	0%				0.00011	< 0.00035	0.00052 J	67%	0.000327	0.00011	0.00052
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.000031 J	0.000025 J	0.000042 J	100%	0.000033	0.000025	0.000042	0.00052	0.00035 J	**0.0018** J A(GW)	100%	0.000890	0.00035	0.0018
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000016	< 0.000015	0%				< 0.000015	< 0.00033	0.00021 J	33%	0.000185	0.000015	0.00033
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.00019 J	0.000061 J	0.000063 J	100%	0.000105	0.000061	0.00019	*0.0029* B	0.00064 J	*0.0041* J B	100%	0.002547	0.00064	0.0041
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.00018 J	0.000097 J	< 0.00021	67%	0.000162	0.000097	0.00021	0.0052	0.0075 J	0.011	100%	0.007900	0.0052	0.011
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.000014	< 0.000012	0%				**0.00013** A(GW)	< 0.00029	< 0.00011	33%	0.000177	0.00011	0.00029
Naphthalene	91-20-3	31	NE	2	2	0.013	0.0091	0.011	0.0058	100%	0.008633	0.0058	0.011	*1.3* B	*0.27* B	*0.52* B	100%	0.696667	0.27	1.3
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.00013 J	0.00017 J	0.00013 J	100%	0.000143	0.00013	0.00017	*0.0067* B	0.0027 J	*0.012* B	100%	0.007133	0.0027	0.012
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.00014 J	0.000057 J	0.000042 J	100%	0.000080	0.000042	0.00014	*0.0018* B	*0.00062* J B	*0.0035* J B	100%	0.001973	0.00062	0.0035
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00043	< 0.00062	0%				< 0.00041	< 0.00044	< 0.0061	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.0006	< 0.00043	< 0.00077	0%				< 0.00061	< 0.00044	< 0.0075	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00087	< 0.00066	0%				< 0.00031	< 0.00088	< 0.0065	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00054	< 0.00065	0%				< 0.00051	< 0.00055	< 0.0064	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00087	< 0.00078	0%				< 0.00041	< 0.00088	< 0.0076	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.0007	< 0.00076	< 0.00064	0%				< 0.00071	< 0.00077	< 0.0063	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	0.0014 J	< 0.00043	< 0.00072	33%	0.000850	0.00043	0.0014	0.0067 J	0.0045 J	< 0.007	67%	0.006067	0.0045	0.007
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0014	< 0.00032	0%				< 0.0013	< 0.0014	< 0.0031	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00087	< 0.00049	0%				< 0.00051	< 0.00088	< 0.0048	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00087	< 0.0006	0%				< 0.00051	< 0.00088	< 0.0059	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00043	< 0.00075	0%				< 0.00051	< 0.00044	< 0.0073	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.0006	< 0.00054	< 0.00076	0%				< 0.00061	< 0.00055	< 0.0074	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.0006	< 0.00098	< 0.00096	0%				< 0.00061	< 0.00099	< 0.0094	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.0009	< 0.00065	< 0.0014	0%				< 0.00092	< 0.00066	< 0.013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00076	< 0.00036	0%				< 0.00051	< 0.00077	< 0.0035	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00065	< 0.00071	0%				< 0.00051	< 0.00066	< 0.0069	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00065	< 0.00073	0%				< 0.00051	< 0.00066	< 0.0071	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0009	< 0.00087	0%				< 0.0020	< 0.0009	< 0.0086	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.00022	< 0.053	0%				< 0.0023	< 0.00022	< 0.52	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.0006	< 0.00065	< 0.00089	0%				< 0.00061	< 0.00066	< 0.0088	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.00043	< 0.00081	0%				< 0.001	< 0.00044	< 0.0079	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.0006	< 0.00043	< 0.00072	0%				< 0.00061	< 0.00044	< 0.007	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00088* J B	< 0.00098	< 0.0013	33%	0.001053	0.00088	0.0013	< 0.00041	< 0.00099	< 0.012	0%			
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.0006	< 0.0017	< 0.00096	0%				< 0.00061	< 0.0018	< 0.0094	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00076	< 0.0014	0%				< 0.00041	< 0.00077	< 0.013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00076	< 0.00072	0%				< 0.00041	< 0.00077	< 0.007	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0041 J	0.0064 J	< 0.00086	67%	0.003787	0.00086	0.0064	0.0049 J	0.0088 J	< 0.0085	67%	0.007400	0.0049	0.0088
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.0006	< 0.0012	< 0.00074	0%				< 0.00061	< 0.0012	< 0.0072	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00110	< 0.001	0%				< 0.00051	< 0.00110	< 0.0099	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.0006	< 0.00076	< 0.001	0%				< 0.00061	< 0.00077	< 0.0099	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00065	< 0.00042	0%				< 0.00051	< 0.00066	< 0.0041	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.0006	< 0.00065	< 0.0011	0%				< 0.00061	< 0.00066	< 0.01	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.0006	< 0.00065	< 0.00084	0%				< 0.00061	< 0.00066	< 0.0082	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.0006	< 0.00043	< 0.00083	0%				< 0.00061	< 0.00044	< 0.0081	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0023	< 0.00096	0%				< 0.001	< 0.0023	< 0.0094	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.0006	< 0.00033	< 0.001	0%				< 0.00061	< 0.00033	< 0.01	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00054	< 0.00076	0%				< 0.00041	< 0.00055	< 0.0074	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.0006	< 0.00065	< 0.0008	0%				< 0.00061	< 0.00066	< 0.0078	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.0007	< 0.00065	< 0.00033	0%				< 0.00071	< 0.00066	< 0.0032	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.04100	0.05100	0.014	100%	0.035333	0.014	0.051	0.04200	0.04300	0.0089 J	100%	0.031300	0.0089	0.043

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
J Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
U Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
J+ Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
J- Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
UJ Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-822D 10/31/2012	MW-822D 7/16/2013	MW-822D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-822S 10/31/2012	MW-822S 7/16/2013	MW-822S 9/13/2017	MW-822S DUP 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																					
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	< 0.000016	< 0.000015	< 0.000039	0%				0.000025 J	< 0.000016	< 0.00004	< 0.000041	25%	0.000031	0.000016	0.000041
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	< 0.000014	< 0.000013	< 0.000014	0%				< 0.000013	< 0.000014	0.000052 J	< 0.000015	25%	0.000024	0.000013	0.000052
Anthracene	120-12-7	0.043	NE	31	31	0.000035	< 0.000016	< 0.000015	0.00002 J	33%	0.000017	0.000015	0.00002	< 0.000015	< 0.000016	< 0.000014	< 0.000015	0%			
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.00003* J B	< 0.000015	*0.00003* J B	67%	0.000025	0.000015	0.00003	0.000017 J	< 0.000016	< 0.000011	< 0.000012	25%	0.000014	0.000011	0.000017
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.00001	< 0.00001	< 0.000022	0%				< 0.00001	< 0.00001	< 0.000023	< 0.000023	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000041 J	0.000014 J	0.00003 J	100%	0.000028	0.000014	0.000041	0.000018 J	0.000012 J	< 0.00002	< 0.00002	50%	0.000018	0.000012	0.00002
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000014	0.000022 J	0.00003 J	67%	0.000022	0.000014	0.00003	< 0.000013	0.000023 J	< 0.000011	< 0.000012	25%	0.000015	0.000011	0.000023
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000017	< 0.000016	0.00002 J	33%	0.000018	0.000016	0.00002	< 0.000016	< 0.000017	< 0.000016	< 0.000017	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.000023 J	< 0.000013	< 0.000019	33%	0.000018	0.000013	0.000023	< 0.000013	< 0.000014	< 0.00002	< 0.00002	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000016	0.000015 J	< 0.000014	33%	0.000015	0.000014	0.000016	< 0.000015	0.000017 J	< 0.000014	< 0.000015	25%	0.000015	0.000014	0.000017
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.000045 J	< 0.00001	0.00004 J	67%	0.000032	0.00001	0.000045	< 0.00001	0.000011 J	< 0.000023	< 0.000023	25%	0.000017	0.00001	0.000023
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	< 0.00001	< 0.00001	< 0.0002	0%				< 0.00001	< 0.00001	< 0.00021	< 0.00021	0%			
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000014	0.000015 J	< 0.000011	33%	0.000013	0.000011	0.000015	< 0.000013	0.000017 J	< 0.000011	< 0.000012	25%	0.000013	0.000011	0.000017
Naphthalene	91-20-3	31	NE	2	2	0.013	0.000038 J	0.00074	< 0.000032	67%	0.000270	0.000032	0.00074	0.0015	0.0021	0.0028	< 0.000053 U	75%	0.001613	0.000053	0.0028
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000026 J	0.00002 J	< 0.000041	67%	0.000029	0.00002	0.000041	0.000025 J	0.000034 J	< 0.000042	< 0.000043	50%	0.000036	0.000025	0.000043
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.000045 J	< 0.000019	0.00004 J	67%	0.000035	0.000019	0.000045	< 0.000019	< 0.00002	< 0.000016	< 0.000017	0%			
SVOCs (mg/L)																					
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00042	< 0.00041	< 0.0006	0%				< 0.00040	< 0.00042	< 0.00061	< 0.00062	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00063	< 0.00041	< 0.00074	0%				< 0.00061	< 0.00042	< 0.00075	< 0.00077	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00031	< 0.00082	< 0.00064	0%				< 0.00030	< 0.00083	< 0.00065	< 0.00066	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00052	< 0.00051	< 0.00063	0%				< 0.00051	< 0.00052	< 0.00064	< 0.00065	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00042	< 0.00082	< 0.00075	0%				< 0.00040	< 0.00083	< 0.00076	< 0.00078	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00073	< 0.00071	< 0.00062	0%				< 0.00071	< 0.00073	< 0.00063	< 0.00064	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.001	< 0.00041	< 0.00069	0%				< 0.001	< 0.00042	< 0.0007	< 0.00072	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0014	< 0.0013	< 0.0003	0%				< 0.0013	< 0.0014	< 0.00031	< 0.00032	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00052	< 0.00082	< 0.00047	0%				< 0.00051	< 0.00083	< 0.00048	< 0.00049	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00052	< 0.00082	< 0.00058	0%				< 0.00051	< 0.00083	< 0.00059	< 0.0006	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00052	< 0.00041	< 0.00072	0%				< 0.00051	< 0.00042	< 0.00073	< 0.00075	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00063	< 0.00051	< 0.00073	0%				< 0.00061	< 0.00052	< 0.00074	< 0.00076	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00063	< 0.00092	< 0.00092	0%				< 0.00061	< 0.00094	< 0.00094	< 0.00096	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00094	< 0.00061	< 0.0013	0%				< 0.00091	< 0.00063	< 0.0013	< 0.0014	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00052	< 0.00071	< 0.00034	0%				< 0.00051	< 0.00073	< 0.00035	< 0.00036	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00052	< 0.00061	< 0.00068	0%				< 0.00051	< 0.00063	< 0.00069	< 0.00071	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00052	< 0.00061	< 0.0007	0%				< 0.00051	< 0.00063	< 0.00071	< 0.00073	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0021	< 0.0008	< 0.00084	0%				< 0.0020	< 0.0008	< 0.00086	< 0.00087	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0024	< 0.0002	< 0.051	0%				< 0.0023	< 0.00021	< 0.052	< 0.053	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00063	< 0.00061	< 0.00086	0%				< 0.00061	< 0.00063	< 0.00088	< 0.00089	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.00041	< 0.00078	0%				< 0.001	< 0.00042	< 0.00079	< 0.00081	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00063	< 0.00041	< 0.00069	0%				< 0.00061	< 0.00042	< 0.0007	< 0.00072	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00056* J B	< 0.00092	< 0.0012	33%	0.000893	0.00056	0.0012	*0.00042* J B	< 0.00094	< 0.0012	< 0.0013	25%	0.000965	0.00042	0.0013
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00063	< 0.0016	< 0.00092	0%				< 0.00061	< 0.0017	< 0.00094	< 0.00096	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00042	< 0.00071	< 0.0013	0%				< 0.00040	< 0.00073	< 0.0013	< 0.0014	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00042	< 0.00071	< 0.00069	0%				< 0.00040	< 0.00073	< 0.0007	< 0.00072	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.002 J	< 0.00092	< 0.00083	33%	0.001250	0.00083	0.002	0.0018 J	< 0.00094	< 0.00085	< 0.00086	25%	0.001113	0.00085	0.0018
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00063	< 0.0011	< 0.00071	0%				< 0.00061	< 0.0011	< 0.00072	< 0.00074	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00052	< 0.00100	< 0.00097	0%				< 0.00051	< 0.00100	< 0.00099	< 0.001	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00063	< 0.00071	< 0.00097	0%				< 0.00061	< 0.00073	< 0.00099	< 0.001	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00052	< 0.00061	< 0.0004	0%				< 0.00051	< 0.00063	< 0.00041	< 0.00042	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00063	< 0.00061	< 0.001	0%				< 0.00061	< 0.00063	< 0.001	< 0.0011	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00063	< 0.00061	< 0.00081	0%				< 0.00061	< 0.00063	< 0.00082	< 0.00084	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00063	< 0.00041	< 0.0008	0%				< 0.00061	< 0.00042	< 0.00081	< 0.00083	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0021	< 0.00092	0%				< 0.001	< 0.0022	< 0.00094	< 0.00096	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00063	< 0.00031	< 0.001	0%				< 0.00061	< 0.00031	< 0.001	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00042	< 0.00051	< 0.00073	0%				< 0.00040	< 0.00052	< 0.00074	< 0.00076	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00063	< 0.00061	< 0.00077	0%				< 0.00061	< 0.00063	< 0.00078	< 0.0008	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00073	< 0.00061	< 0.00031	0%				< 0.00071	< 0.00063	< 0.00032	< 0.00033	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00042	< 0.00031	< 0.00037	0%				< 0.00040	< 0.00031	0.0042 J	< 0.00039	25%	0.001325	0.00031	0.0042

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-823D 11/1/2012	MW-823D 7/17/2013	MW-823D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-823S 11/1/2012	MW-823S 7/17/2013	MW-823S-Dup 7/17/2013	MW-823S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																					
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00041 J	0.000073 J	0.000043 J	100%	0.000175	0.000043	0.00041	0.0073	0.0021	0.0017	0.0012	100%	0.0031	0.0012	0.0073
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00017 J	0.0002 J	0.00021 J	100%	0.000193	0.00017	0.00021	0.012	0.0026	0.0022	0.0007	100%	0.0044	0.0007	0.012
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.000043* J B	*0.000043* J B	*0.000065* J B	100%	0.000050	0.000043	0.000065	*0.0011* B	*0.0004* J B	*0.00024* J B	*0.0002* J B	100%	0.0005	0.0002	0.0011
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.000027* J B	0.000024 J	0.000022 J	100%	0.000024	0.000022	0.000027	*0.00022* B	*0.000083* J B	*0.000043* J B	*0.000053* J B	100%	0.0001	0.000043	0.00022
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.00001	< 0.00001	< 0.000024	0%				*0.000065* J B	*0.000023* J B	0.000013 J	***0.00021*** A(MCL),B	100%	0.0001	0.000013	0.00021
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000024 J	< 0.00001	< 0.000021	33%	0.000018	0.00001	0.000024	0.0001	0.000031 J	< 0.00001	0.000021 J	75%	0.0000	0.00001	0.0001
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.000021 J	< 0.000013	0.000054 J	67%	0.000029	0.000013	0.000054	0.000038 J	< 0.000013	< 0.000013	< 0.000012	25%	0.0000	0.000012	0.000038
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.000016	0.000043 J	33%	0.000025	0.000016	0.000043	0.00003 J	0.000024 J	< 0.000016	< 0.000017	50%	0.0000	0.000016	0.00003
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	< 0.000013	< 0.000021	0%				0.00017 J	0.0002 J	0.000028 J	0.000032 J	100%	0.0001	0.000028	0.0002
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000015	0.000043	33%	0.000024	0.000015	0.000043	< 0.000015	< 0.000015	< 0.000015	< 0.000015	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.000083 J	0.000029 J	< 0.000024	67%	0.000045	0.000024	0.000083	*0.0036* B	0.00062	0.0005 J	0.00068	100%	0.0014	0.0005	0.0036
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.00002 J	0.000026 J	< 0.00022	67%	0.000089	0.00002	0.00022	0.0063	0.0025	0.0021	0.0004 J	100%	0.0028	0.0004	0.0063
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.000013	< 0.000012	0%				**0.000029** A(GW)	0.000013 J	< 0.000013	**0.00019** A(GW)	75%	0.0001	0.000013	0.00019
Naphthalene	91-20-3	31	NE	2	2	0.013	0.002	0.002	0.0014	100%	0.001800	0.0014	0.002	0.00038 J	0.0013	0.0011	0.0014	100%	0.0010	0.00038	0.0014
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.00004 J	0.000069 J	< 0.000042	67%	0.000051	0.00004	0.000069	0.005 B	0.001	0.00087	0.00036 J	100%	0.0018	0.00036	0.005
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.00012 J	< 0.000019	< 0.000017	33%	0.000052	0.000017	0.00012	*0.0027* B	*0.00051* B	0.00023 J	*0.00041* J B	100%	0.0010	0.00023	0.0027
SVOCs (mg/L)																					
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00041	< 0.00040	< 0.00064	0%				< 0.00040	< 0.00040	< 0.00040	< 0.00063	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00061	< 0.0004	< 0.00079	0%				< 0.00059	< 0.0004	< 0.0004	< 0.00078	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00031	< 0.00080	< 0.00068	0%				< 0.00030	< 0.00080	< 0.00080	< 0.00067	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00051	< 0.00050	< 0.00067	0%				< 0.00050	< 0.00050	< 0.00050	< 0.00066	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00041	< 0.00080	< 0.0008	0%				< 0.00040	< 0.00080	< 0.00080	< 0.00079	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00071	< 0.0007	< 0.00066	0%				< 0.00069	< 0.0007	< 0.0007	< 0.00065	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	0.045	0.056	0.039	100%	0.046667	0.039	0.056	< 0.00099	< 0.0004	< 0.0004	< 0.00072	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.00033	0%				< 0.0013	< 0.0013	< 0.0013	< 0.00032	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00051	< 0.00080	< 0.00051	0%				< 0.00050	< 0.00080	< 0.00080	< 0.0005	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00051	< 0.00080	< 0.00062	0%				< 0.00050	< 0.00080	< 0.00080	< 0.00061	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00051	< 0.00040	< 0.00077	0%				< 0.00050	< 0.00040	< 0.00040	< 0.00076	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00061	< 0.0005	< 0.00078	0%				< 0.00059	< 0.0005	< 0.0005	< 0.00077	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00061	< 0.0009	< 0.00099	0%				< 0.00059	< 0.0009	< 0.0009	< 0.00097	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00092	< 0.0006	< 0.0014	0%				< 0.00089	< 0.0006	< 0.0006	< 0.0014	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00051	< 0.00070	< 0.00037	0%				< 0.00050	< 0.00070	< 0.00070	< 0.00036	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00051	< 0.00060	< 0.00073	0%				< 0.00050	< 0.00060	< 0.00060	< 0.00071	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00051	< 0.00060	< 0.00075	0%				< 0.00050	< 0.00060	< 0.00060	< 0.00073	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0008	< 0.0009	0%				< 0.0020	< 0.0008	< 0.0008	< 0.00088	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.0002	< 0.054	0%				< 0.0023	< 0.0002	< 0.0002	< 0.053	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00061	< 0.0006	< 0.00092	0%				< 0.00059	< 0.0006	< 0.0006	< 0.0009	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.0004	< 0.00084	0%				< 0.00099	< 0.0004	< 0.0004	< 0.00082	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00061	< 0.0004	< 0.00074	0%				< 0.00059	< 0.0004	< 0.0004	< 0.00072	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00076* J B	< 0.00090	< 0.0013	33%	0.000987	0.00076	0.0013	*0.00076* J B	< 0.00090	< 0.00090	< 0.0013	25%	0.0010	0.00076	0.0013
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00061	< 0.0016	< 0.00099	0%				< 0.00059	< 0.0016	< 0.0016	< 0.00097	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00041	< 0.00070	< 0.0014	0%				< 0.00040	< 0.00070	< 0.00070	< 0.0014	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00041	< 0.00070	< 0.00074	0%				< 0.00040	< 0.00070	< 0.00070	< 0.00072	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0031 J	0.0069 J	< 0.00089	67%	0.003630	0.00089	0.0069	0.0028 J	0.0065 J	0.0055 J	< 0.00087	75%	0.0039	0.00087	0.0065
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00061	< 0.0011	< 0.00076	0%				< 0.00059	< 0.0011	< 0.0011	< 0.00074	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00051	< 0.00100	< 0.001	0%				< 0.00050	< 0.00100	< 0.00100	< 0.001	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00061	< 0.0007	< 0.001	0%				< 0.00059	< 0.0007	< 0.0007	< 0.001	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00051	< 0.00060	< 0.00043	0%				< 0.00050	< 0.00060	< 0.00060	< 0.00043	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00061	< 0.0006	< 0.0011	0%				< 0.00059	< 0.0006	< 0.0006	< 0.0011	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00061	< 0.0006	< 0.00087	0%				< 0.00059	< 0.0006	< 0.0006	< 0.00085	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00061	< 0.0004	< 0.00086	0%				< 0.00059	< 0.0004	< 0.0004	< 0.00084	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0021	< 0.00099	0%				< 0.00099	< 0.0021	< 0.0021	< 0.00097	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00061	< 0.0003	< 0.0011	0%				< 0.00059	< 0.0003	< 0.0003	< 0.0011	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00041	< 0.00050	< 0.00078	0%				< 0.00040	< 0.00050	< 0.00050	< 0.00077	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00061	< 0.0006	< 0.00083	0%				< 0.00059	< 0.0006	< 0.0006	< 0.00081	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00071	< 0.0006	< 0.00034	0%				< 0.00069	< 0.0006	< 0.0006	< 0.00033	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.032	0.008 J	0.012	100%	0.017200	0.0076	0.032	0.015	0.001 J	0.008 J	0.00083 J	100%	0.0063	0.00083	0.015

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-824D 11/1/2012	MW-824D 7/18/2013	MW-824D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-824S 11/1/2012	MW-824S 7/15/2013	MW-824S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																				
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.001	0.00032 J	0.00043 J	100%	0.000583	0.00032	0.001	0.00028 J	0.000021 J	< 0.000039	67%	0.000113	0.000021	0.00028
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00023 J	0.00024 J	0.00034 J	100%	0.000270	0.00023	0.00034	0.000039 J	0.000049 J	0.00005 J	100%	0.000046	0.000039	0.00005
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.00029* J B	*0.00022* J B	*0.00024* J B	100%	0.000250	0.00022	0.00029	*0.000045* J B	*0.000038* J B	*0.00006* J B	100%	0.000048	0.000038	0.00006
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.000071* J B	*0.00037* J B	*0.000031* J B	100%	0.000157	0.000031	0.00037	0.000021 J	0.00002 J	0.00002 J	100%	0.000020	0.00002	0.000021
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.0000099	*0.00012* J B	< 0.000023	33%	0.000051	0.0000099	0.00012	< 0.0000099	*0.000021* J B	< 0.000022	33%	0.000018	0.0000099	0.000022
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00011	< 0.0001	< 0.00002	33%	0.000077	0.00002	0.00011	0.000014 J	0.000027 J	< 0.000019	67%	0.000020	0.000014	0.000027
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.000023 J	< 0.00013	< 0.000011	33%	0.000055	0.000011	0.00013	< 0.000013	0.00004 J	< 0.000011	33%	0.000021	0.000011	0.00004
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.000087 J	< 0.00016	< 0.000017	33%	0.000088	0.000017	0.00016	< 0.000016	0.000021 J	< 0.000016	33%	0.000018	0.000016	0.000021
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.000034 J	0.00017 J	< 0.00002	67%	0.000075	0.00002	0.00017	< 0.000013	0.000027 J	< 0.000019	33%	0.000020	0.000013	0.000027
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.00015	< 0.000015	0%				< 0.000015	0.000027 J	< 0.000014	33%	0.000019	0.000014	0.000027
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.00027 J	0.00025 J	0.00011 J	100%	0.000210	0.00011	0.00027	0.000052 J	0.000044 J	< 0.000022	67%	0.000039	0.000022	0.000052
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.00035 J	0.00029 J	0.00029 J	100%	0.000310	0.00029	0.00035	0.00007 J	0.000023 J	< 0.0002	67%	0.000098	0.000023	0.0002
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.00013	< 0.000011	0%				< 0.000013	**0.000029** A(GW)	< 0.000011	33%	0.000018	0.000011	0.000029
Naphthalene	91-20-3	31	NE	2	2	0.013	0.01	0.0091	0.0026	100%	0.007233	0.0026	0.01	0.0012	0.00016 J	< 0.00026 U	67%	0.000540	0.00016	0.0012
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.00086	0.00071 J	0.00036 J	100%	0.000643	0.00036	0.00086	0.000069 J	0.000076 J	< 0.000041	67%	0.000062	0.000041	0.000076
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.00027 J	0.00027 J	0.000094 J	100%	0.000211	0.000094	0.00027	0.000079 J	0.000027 J	< 0.000016	67%	0.000041	0.000016	0.000079
SVOCs (mg/L)																				
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00040	< 0.00061	0%				< 0.00040	< 0.00043	< 0.00059	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.0004	< 0.00076	0%				< 0.00059	< 0.00043	< 0.00073	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00081	< 0.00066	0%				< 0.00030	< 0.00085	< 0.00063	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00051	< 0.00065	0%				< 0.00050	< 0.00053	< 0.00062	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00081	< 0.00077	0%				< 0.00040	< 0.00085	< 0.00074	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.00071	< 0.00064	0%				< 0.00069	< 0.00074	< 0.00061	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00099	< 0.0004	< 0.00071	0%				< 0.00099	< 0.00043	< 0.00068	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0013	< 0.00031	0%				< 0.0013	< 0.0014	< 0.0003	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00081	< 0.00049	0%				< 0.00050	< 0.00085	< 0.00047	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00081	< 0.00059	0%				< 0.00050	< 0.00085	< 0.00057	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00040	< 0.00074	0%				< 0.00050	< 0.00043	< 0.00071	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.00051	< 0.00075	0%				< 0.00059	< 0.00053	< 0.00072	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.00091	< 0.00095	0%				< 0.00059	< 0.00096	< 0.00091	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.00061	< 0.0014	0%				< 0.00089	< 0.00064	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00071	< 0.00035	0%				< 0.00050	< 0.00074	< 0.00034	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00061	< 0.0007	0%				< 0.00050	< 0.00064	< 0.00067	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00061	< 0.00072	0%				< 0.00050	< 0.00064	< 0.00069	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0008	< 0.00086	0%				< 0.0020	< 0.0009	< 0.00083	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.0002	< 0.052	0%				< 0.0023	< 0.00021	< 0.05	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00061	< 0.00089	0%				< 0.00059	< 0.00064	< 0.00085	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.0004	< 0.0008	0%				< 0.00099	< 0.00043	< 0.00077	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.0004	< 0.00071	0%				< 0.00059	< 0.00043	< 0.00068	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	< 0.00040	< 0.00091	< 0.0012	0%				< 0.00040	*0.00210* J B	< 0.0012	33%	0.001233	0.0004	0.0021
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.0016	< 0.00095	0%				< 0.00059	< 0.0017	< 0.00091	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00071	< 0.0014	0%				< 0.00040	< 0.00074	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00071	< 0.00071	0%				< 0.00040	< 0.00074	< 0.00068	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0033 J	0.0095 J	< 0.00085	67%	0.004550	0.00085	0.0095	0.0025 J	0.0019 J	< 0.00082	67%	0.001740	0.00082	0.0025
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.0011	< 0.00073	0%				< 0.00059	< 0.0012	< 0.0007	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00100	< 0.001	0%				< 0.00050	< 0.00110	< 0.00096	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.00071	< 0.001	0%				< 0.00059	< 0.00074	< 0.00096	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00061	< 0.00042	0%				< 0.00050	< 0.00064	< 0.0004	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.00061	< 0.001	0%				< 0.00059	< 0.00064	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.00061	< 0.00083	0%				< 0.00059	< 0.00064	< 0.0008	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.0004	< 0.00082	0%				< 0.00059	< 0.00043	< 0.00079	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.0021	< 0.00095	0%				< 0.00099	< 0.0022	< 0.00091	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.0003	< 0.001	0%				< 0.00059	< 0.00032	< 0.00099	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00051	< 0.00075	0%				< 0.00040	< 0.00053	< 0.00072	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.00061	< 0.00079	0%				< 0.00059	< 0.00064	< 0.00076	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00069	< 0.00061	< 0.00032	0%				< 0.00069	< 0.00064	< 0.00031	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.015	0.032	0.036	100%	0.027667	0.015	0.036	< 0.00040	0.00340 J	< 0.00037	33%	0.001390	0.00037	0.0034

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-825S 11/1/2012	MW-825S 7/15/2013	MW-825S-Dup 7/15/2013	MW-825S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-826M 11/2/2012	MW-826M 7/16/2013	MW-826M 9/14/2017	% Detect	Average
PAHs (mg/L)																			
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00049 J	0.0009	0.00083	0.00062	100%	0.000710	0.00049	0.0009	0.000048 J	0.000023 J	< 0.000039	67%	0.000037
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00015 J	0.00067	0.00061	0.00046 J	100%	0.000473	0.00015	0.00067	0.000071 J	0.000096 J	0.00008 J	100%	0.000082
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.00026* J B	*0.0004* J B	*0.00034* J B	*0.00042* J B	100%	0.000355	0.00026	0.00042	*0.000063* J B	0.000034 J	*0.00006* J B	100%	0.000052
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.000093* J B	*0.000088* J B	*0.000081* J B	*0.00009* J B	100%	0.000088	0.000081	0.000093	*0.000052* J B	< 0.000016	*0.00003* J B	67%	0.000033
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	*0.000035* J B	*0.00002* J B	*0.000018* J B	< 0.000022	75%	0.000024	0.000018	0.000035	*0.000041* J B	< 0.000011	< 0.000022	33%	0.000025
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00007 J	0.000033 J	0.00003 J	0.00004 J	100%	0.000043	0.00003	0.00007	0.000054 J	< 0.000011	< 0.000019	33%	0.000028
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.000028 J	0.000017 J	0.000015 J	0.00007 J	100%	0.000033	0.000015	0.00007	0.000047 J	0.000015 J	< 0.000011	67%	0.000024
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.00003 J	0.000019 J	< 0.000017	0.00008 J	75%	0.000037	0.000017	0.00008	< 0.000016	< 0.000017	< 0.000016	0%	
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.00008 J	0.000048 J	0.000046 J	0.00006 J	100%	0.000059	0.000046	0.00008	0.000044 J	< 0.000014	< 0.000019	33%	0.000026
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	0.000016 J	< 0.000016	0.00007	50%	0.000029	0.000015	0.00007	< 0.000015	< 0.000016	< 0.000014	0%	
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.00059	0.00041 J	0.00037 J	0.00046 J	100%	0.000458	0.00037	0.00059	0.00016 J	0.000073 J	0.00004 J	100%	0.000091
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.0004 J	0.0012	0.0011	0.00072	100%	0.000855	0.0004	0.0012	0.000024 J	0.00004 J	< 0.0002	67%	0.000088
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	0.000015 J	< 0.000014	**0.00025** A(GW)	50%	0.000073	0.000013	0.00025	**0.000031** A(GW)	< 0.000014	< 0.000011	33%	0.000019
Naphthalene	91-20-3	31	NE	2	2	0.013	0.0002 J	*0.04* B	*0.037* B	*0.03* B	100%	0.026800	0.0002	0.04	0.0008	0.00015 J	< 0.00008 U	67%	0.000343
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.0006	0.0018	0.0017	0.0014	100%	0.001375	0.0006	0.0018	0.000048 J	0.000061 J	< 0.000041	67%	0.000050
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	*0.0007* B	*0.00048* J B	*0.00044* J B	*0.00057* B	100%	0.000548	0.00044	0.0007	0.000075 J	0.000036 J	0.00002 J	100%	0.000044
SVOCs (mg/L)																			
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00043	< 0.00043	< 0.00059	0%				< 0.00040	< 0.00043	< 0.00059	0%	
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00059	< 0.00043	< 0.00043	< 0.00073	0%				< 0.00059	< 0.00043	< 0.00073	0%	
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00085	< 0.00085	< 0.00063	0%				< 0.00030	< 0.00087	< 0.00063	0%	
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00053	< 0.00053	< 0.00062	0%				< 0.00050	< 0.00054	< 0.00062	0%	
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00085	< 0.00085	< 0.00074	0%				< 0.00040	< 0.00087	< 0.00074	0%	
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00069	< 0.00074	< 0.00074	< 0.00061	0%				< 0.00069	< 0.00076	< 0.00061	0%	
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	0.0047 J	0.004 J	0.0037 J	0.0029 J	100%	0.003825	0.0029	0.0047	0.0036 J	< 0.00043	< 0.00068	33%	0.001570
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0014	< 0.0014	< 0.0003	0%				< 0.0013	< 0.0014	< 0.0003	0%	
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00085	< 0.00085	< 0.00047	0%				< 0.00050	< 0.00087	< 0.00047	0%	
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00085	< 0.00085	< 0.00057	0%				< 0.00050	< 0.00087	< 0.00057	0%	
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00043	< 0.00043	< 0.00071	0%				< 0.00050	< 0.00043	< 0.00071	0%	
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00059	< 0.00053	< 0.00053	< 0.00072	0%				< 0.00059	< 0.00054	< 0.00072	0%	
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00059	< 0.00096	< 0.00096	< 0.00091	0%				< 0.00059	< 0.00098	< 0.00091	0%	
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.00089	< 0.00064	< 0.00064	< 0.0013	0%				< 0.00089	< 0.00065	< 0.0013	0%	
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00074	< 0.00074	< 0.00034	0%				< 0.00050	< 0.00076	< 0.00034	0%	
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00064	< 0.00064	< 0.00067	0%				< 0.00050	< 0.00065	< 0.00067	0%	
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00064	< 0.00064	< 0.00069	0%				< 0.00050	< 0.00065	< 0.00069	0%	
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0009	< 0.0009	< 0.00083	0%				< 0.0020	< 0.0009	< 0.00083	0%	
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.00021	< 0.00021	< 0.05	0%				< 0.0023	< 0.00022	< 0.05	0%	
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00064	< 0.00064	< 0.00085	0%				< 0.00059	< 0.00065	< 0.00085	0%	
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00099	< 0.00043	< 0.00043	< 0.00077	0%				< 0.00099	< 0.00043	< 0.00077	0%	
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00059	< 0.00043	< 0.00043	< 0.00068	0%				< 0.00059	< 0.00043	< 0.00068	0%	
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.00051* J B	< 0.00096	< 0.00096	< 0.0012	25%	0.000908	0.00051	0.0012	< 0.00040	*0.00170* J B	< 0.0012	33%	0.001100
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00059	< 0.0017	< 0.0017	< 0.00091	0%				< 0.00059	< 0.0017	< 0.00091	0%	
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00074	< 0.00074	< 0.0013	0%				< 0.00040	< 0.00076	< 0.0013	0%	
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00074	< 0.00074	< 0.00068	0%				< 0.00040	< 0.00076	< 0.00068	0%	
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0018 J	0.0022 J	0.0022 J	< 0.00082	75%	0.001755	0.00082	0.0022	0.0015 J	0.001 J	< 0.00082	67%	0.001107
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00059	< 0.0012	< 0.0012	< 0.0007	0%				< 0.00059	< 0.0012	< 0.0007	0%	
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00110	< 0.00110	< 0.00096	0%				< 0.00050	< 0.00110	< 0.00096	0%	
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.00059	< 0.00074	< 0.00074	< 0.00096	0%				< 0.00059	< 0.00076	< 0.00096	0%	
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00064	< 0.00064	< 0.0004	0%				< 0.00050	< 0.00065	< 0.0004	0%	
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.00059	< 0.00064	< 0.00064	< 0.001	0%				< 0.00059	< 0.00065	< 0.001	0%	
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00059	< 0.00064	< 0.00064	< 0.0008	0%				< 0.00059	< 0.00065	< 0.0008	0%	
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00059	< 0.00043	< 0.00043	< 0.00079	0%				< 0.00059	< 0.00043	< 0.00079	0%	
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00099	< 0.0022	< 0.0022	< 0.00091	0%				< 0.00099	< 0.0023	< 0.00091	0%	
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.00059	< 0.00032	< 0.00032	< 0.00099	0%				< 0.00059	< 0.00033	< 0.00099	0%	
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00053	< 0.00053	< 0.00072	0%				< 0.00040	< 0.00054	< 0.00072	0%	
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00059	< 0.00064	< 0.00064	< 0.00076	0%				< 0.00059	< 0.00065	< 0.00076	0%	
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	***0.029*** J A(MCL,I,DCL),B	***0.029*** J A(MCL,I,DCL),B	***0.026*** J A(MCL,I,DCL),B	***0.022*** J A(MCL),B	100%	0.026500	0.022	0.029	< 0.00069	< 0.00065	< 0.00031	0%	
Phenol	108-95-2	83,000	NE	31	31	0.180	0.00450 J	0.00170 J	< 0.00032	< 0.00037	50%	0.001723	0.00032	0.0045	0.06500	< 0.00033	< 0.00037	33%	0.021900

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected
PAHs (mg/L)								
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.000023	0.000048
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.000071	0.000096
Anthracene	120-12-7	0.043	NE	31	31	0.000035	0.000034	0.000063
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.000016	0.000052
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	0.000011	0.000041
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000011	0.000054
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.000011	0.000047
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE		
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.000014	0.000044
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE		
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.00004	0.00016
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.000024	0.0002
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	0.000011	0.000031
Naphthalene	91-20-3	31	NE	2	2	0.013	0.00008	0.0008
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000041	0.000061
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.00002	0.000075
SVOCs (mg/L)								
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030		
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014		
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE		
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094		
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049		
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011		
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	0.00043	0.0036
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019		
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044		
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081		
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396		
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024		
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE		
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045		
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023		
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015		
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE		
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06		
Benzidine	92-87-5	NE	NE	NE	NE	NE		
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE		
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19		
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE		
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	0.0004	0.0017
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023		
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11		
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE		
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.00082	0.0015
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030		
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$		
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053		
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077		
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008		
Isophorone	78-59-1	12,000	NE	3	3	0.92		
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE		
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE		
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE		
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE		
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE		
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004		
Phenol	108-95-2	83,000	NE	31	31	0.180	0.00033	0.065

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-826S 11/2/2012	MW-826S 7/16/2013	MW-826S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-827S 10/31/2012	MW-827S-Dup 10/31/2012	MW-827S 7/16/2013	MW-827S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																					
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.000041 J	< 0.000018	< 0.00004	33%	0.000033	0.000018	0.000041	0.000027 J	0.000032 J	< 0.000016	0.000052 J	75%	0.00003	0.00002	0.00005
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00009 J	0.000089 J	0.00026 J	100%	0.000146	0.000089	0.00026	0.000013 J	0.000015 J	0.000019 J	0.000041 J	100%	0.00002	0.00001	0.00004
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.000046* J B	0.000033 J	*0.00013* J B	100%	0.000070	0.000033	0.00013	0.000021 J	0.000019 J	0.000026 J	*0.000082* J B	100%	0.00004	0.00002	0.00008
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	0.00002 J	< 0.000018	0.000021 J	67%	0.000020	0.000018	0.000021	0.000019 J	< 0.000015	0.000016 J	0.000021 J	75%	0.00002	0.00002	0.00002
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.00001	< 0.000012	< 0.000023	0%				< 0.0000099	< 0.0000099	0.000013 J	< 0.000023	25%	0.00001	0.00001	0.00002
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000022 J	< 0.000012	< 0.00002	33%	0.000018	0.000012	0.000022	< 0.0000099	< 0.0000099	0.000016 J	< 0.00002	25%	0.00001	0.00001	0.00002
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000013	< 0.000016	< 0.000011	0%				< 0.000013	< 0.000013	0.00002 J	< 0.000011	25%	0.00001	0.00001	0.00002
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.000016	< 0.00002	< 0.000016	0%				< 0.000016	< 0.000016	< 0.000017	< 0.000016	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	< 0.000013	< 0.000016	< 0.00002	0%				< 0.000013	< 0.000013	< 0.000014	< 0.00002	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.000018	< 0.000014	0%				< 0.000015	< 0.000015	0.000016 J	< 0.000014	25%	0.00002	0.00001	0.00002
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.000036 J	< 0.000061	< 0.000023	33%	0.000040	0.000023	0.000061	< 0.0000099	< 0.0000099	0.000017 J	0.000031 J	50%	0.00002	0.00001	0.00003
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.000024 J	0.000024 J	< 0.00021	67%	0.000086	0.000024	0.00021	< 0.0000099	< 0.0000099	0.000019 J	< 0.00021	25%	0.00006	0.00001	0.00021
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000013	< 0.000016	< 0.000011	0%				< 0.000013	< 0.000013	0.000016 J	< 0.000011	25%	0.00001	0.00001	0.00002
Naphthalene	91-20-3	31	NE	2	2	0.013	0.0011	0.000099 J	0.000052 U	67%	0.000417	0.000052	0.0011	0.00011 J	0.00021 J	0.0049	0.00026 J	100%	0.00137	0.00011	0.00490
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.000032 J	0.000065 J	< 0.000042	67%	0.000046	0.000032	0.000065	< 0.000015	< 0.000015	0.00004 J	< 0.000042	25%	0.00003	0.00001	0.00004
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	0.000047 J	0.000027 J	< 0.000016	67%	0.000030	0.000016	0.000047	< 0.000019	< 0.000019	< 0.00002	0.000021 J	25%	0.00002	0.00002	0.00002
SVOCs (mg/L)																					
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00040	< 0.00049	< 0.00061	0%				< 0.00040	< 0.00040	< 0.00043	< 0.00061	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.0006	< 0.00049	< 0.00075	0%				< 0.00059	< 0.00059	< 0.00043	< 0.00075	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00030	< 0.00098	< 0.00065	0%				< 0.00030	< 0.00030	< 0.00085	< 0.00065	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00050	< 0.00061	< 0.00064	0%				< 0.00050	< 0.00050	< 0.00053	< 0.00064	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00040	< 0.00098	< 0.00076	0%				< 0.00040	< 0.00040	< 0.00085	< 0.00076	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.0007	< 0.00085	< 0.00063	0%				< 0.00069	< 0.00069	< 0.00074	< 0.00063	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	0.0026 J	< 0.00049	< 0.0007	33%	0.001263	0.00049	0.0026	0.0012 J	0.0013 J	< 0.00043	< 0.0007	50%	0.00091	0.00043	0.00130
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0013	< 0.0016	< 0.00031	0%				< 0.0013	< 0.0013	< 0.0014	< 0.00031	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00050	< 0.00098	< 0.00048	0%				< 0.00050	< 0.00050	< 0.00085	< 0.00048	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00050	< 0.00098	< 0.00059	0%				< 0.00050	< 0.00050	< 0.00085	< 0.00059	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00050	< 0.00049	< 0.00073	0%				< 0.00050	< 0.00050	< 0.00043	< 0.00073	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.0006	< 0.00061	< 0.00074	0%				< 0.00059	< 0.00059	< 0.00053	< 0.00074	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.0006	< 0.0011	< 0.00094	0%				< 0.00059	< 0.00059	< 0.00096	< 0.00094	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.0009	< 0.00073	< 0.0013	0%				< 0.00089	< 0.00089	< 0.00064	< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00050	< 0.00085	< 0.00035	0%				< 0.00050	< 0.00050	< 0.00074	< 0.00035	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00050	< 0.00073	< 0.00069	0%				< 0.00050	< 0.00050	< 0.00064	< 0.00069	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00050	< 0.00073	< 0.00071	0%				< 0.00050	< 0.00050	< 0.00064	< 0.00071	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0020	< 0.0010	< 0.00086	0%				< 0.0020	< 0.0020	< 0.0009	< 0.00086	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.0023	< 0.00024	< 0.052	0%				< 0.0023	< 0.0023	< 0.00021	< 0.052	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.0006	< 0.00073	< 0.00088	0%				< 0.00059	< 0.00059	< 0.00064	< 0.00088	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.001	< 0.00049	< 0.00079	0%				< 0.00099	< 0.00099	< 0.00043	< 0.00079	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.0006	< 0.00049	< 0.0007	0%				< 0.00059	< 0.00059	< 0.00043	< 0.0007	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	< 0.00040	*0.00280* J B	< 0.0012	33%	0.001467	0.0004	0.0028	*0.00052* J B	< 0.00040	< 0.00096	< 0.0012	25%	0.00077	0.00040	0.00120
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.0006	< 0.002	< 0.00094	0%				< 0.00059	< 0.00059	< 0.0017	< 0.00094	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.00040	< 0.00085	< 0.0013	0%				< 0.00040	< 0.00040	< 0.00074	< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00040	< 0.00085	< 0.0007	0%				< 0.00040	< 0.00040	< 0.00074	< 0.0007	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	0.0037 J	0.0021 J	< 0.00085	67%	0.002217	0.00085	0.0037	0.0019 J	0.0016 J	< 0.00096	< 0.00085	50%	0.00133	0.00085	0.00190
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.0006	< 0.0013	< 0.00072	0%				< 0.00059	< 0.00059	< 0.0012	< 0.00072	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.00050	< 0.00120	< 0.00099	0%				< 0.00050	< 0.00050	< 0.00110	< 0.00099	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.0006	< 0.00085	< 0.00099	0%				< 0.00059	< 0.00059	< 0.00074	< 0.00099	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00050	< 0.00073	< 0.00041	0%				< 0.00050	< 0.00050	< 0.00064	< 0.00041	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.0006	< 0.00073	< 0.001	0%				< 0.00059	< 0.00059	< 0.00064	< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.0006	< 0.00073	< 0.00082	0%				< 0.00059	< 0.00059	< 0.00064	< 0.00082	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.0006	< 0.00049	< 0.00081	0%				< 0.00059	< 0.00059	< 0.00043	< 0.00081	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.001	< 0.0026	< 0.00094	0%				< 0.00099	< 0.00099	< 0.0022	< 0.00094	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.0006	< 0.00037	< 0.001	0%				< 0.00059	< 0.00059	< 0.00032	< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00040	< 0.00081	< 0.00074	0%				< 0.00040	< 0.00040	< 0.00053	< 0.00074	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.0006	< 0.00073	< 0.00078	0%				< 0.00059	< 0.00059	< 0.00064	< 0.00078	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.0007	< 0.00073	< 0.00032	0%				< 0.00069	< 0.00069	< 0.00064	< 0.00032	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.06300	< 0.00037	< 0.00038	33%	0.021250	0.00037	0.063	< 0.00040	< 0.00040	< 0.00032	< 0.00038	0%			

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure,
Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
J Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
U Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
J+ Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
J- Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
UJ Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate

A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-828S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-829S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-830S 9/12/2017	MW-830S DUP 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																						
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.0043 J	100%	0.00430	0.00430	0.00430	0.00013 J	100%	0.00013	0.00013	0.00013	*0.04* J B	*0.058* J B	100%	0.04900	0.04000	0.05800
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.011	100%	0.01100	0.01100	0.01100	0.00013 J	100%	0.00013	0.00013	0.00013	0.0007	0.00055	100%	0.00063	0.00055	0.00070
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.0015* J B	100%	0.00150	0.00150	0.00150	*0.000074* J B	100%	0.00007	0.00007	0.00007	*0.0088* B	*0.0078* B	100%	0.00830	0.00780	0.00880
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.00042* J B	100%	0.00042	0.00042	0.00042	< 0.000012	0%				*0.0008* B	*0.00075* B	100%	0.00078	0.00075	0.00080
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	***0.0022*** A(GW,MCL,I,DCL),B	100%	0.00220	0.00220	0.00220	< 0.000023	0%				***0.0004*** A(MCL,I,DCL),B	***0.00045*** A(MCL,I,DCL),B	100%	0.00043	0.00040	0.00045
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00031 J	100%	0.00031	0.00031	0.00031	< 0.00002	0%				0.0003	0.00038	100%	0.00034	0.00030	0.00038
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.00011	0%				< 0.000012	0%				0.00009 J	0.00014 J	100%	0.00012	0.00009	0.00014
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	< 0.00017	0%				< 0.000017	0%				0.00009 J	0.00013	100%	0.00011	0.00009	0.00013
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.00021 J	100%	0.00021	0.00021	0.00021	< 0.00002	0%				0.00045 J	0.0004 J	100%	0.00043	0.00040	0.00045
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.00015	0%				< 0.000015	0%				0.000022 J	0.000054	100%	0.00004	0.00002	0.00005
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	*0.0019* J B	100%	0.00190	0.00190	0.00190	< 0.000023	0%				*0.011* B	*0.013* B	100%	0.01200	0.01100	0.01300
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.0093	100%	0.00930	0.00930	0.00930	< 0.00021	0%				*0.028* B	*0.034* B	100%	0.03100	0.02800	0.03400
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	**0.002** A(GW)	100%	0.00200	0.00200	0.00200	< 0.000012	0%				**0.00027** A(GW)	**0.00029** A(GW)	100%	0.00028	0.00027	0.00029
Naphthalene	91-20-3	31	NE	2	2	0.013	***2*** A(I,DCL),B	100%	2.00000	2.00000	2.00000	0.0022	100%	0.00220	0.00220	0.00220	0.0045 J	0.0021 J	100%	0.00330	0.00210	0.00450
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	*0.0076* B	100%	0.00760	0.00760	0.00760	< 0.000043	0%				*0.028* B	*0.036* B	100%	0.03200	0.02800	0.03600
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	*0.0012* J B	100%	0.00120	0.00120	0.00120	< 0.000017	0%				*0.0081* B	*0.006* B	100%	0.00705	0.00600	0.00810
SVOCs (mg/L)																						
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.0061	0%				< 0.00062	0%				< 0.00066	< 0.00063	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.0076	0%				< 0.00077	0%				< 0.00082	< 0.00078	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.0066	0%				< 0.00066	0%				< 0.00071	< 0.00068	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.0065	0%				< 0.00065	0%				< 0.0007	< 0.00067	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.0077	0%				< 0.00078	0%				< 0.00083	< 0.0008	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.0064	0%				< 0.00064	0%				< 0.00069	< 0.00066	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.0071	0%				< 0.00072	0%				< 0.00076	< 0.00073	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.0031	0%				< 0.00032	0%				< 0.00034	< 0.00032	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.0049	0%				< 0.00049	0%				< 0.00053	< 0.00051	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.0059	0%				< 0.0006	0%				< 0.00064	< 0.00061	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.0074	0%				< 0.00075	0%				< 0.0008	< 0.00076	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.0075	0%				< 0.00076	0%				< 0.00081	< 0.00077	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.0095	0%				< 0.00096	0%				< 0.001	< 0.00098	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.014	0%				< 0.0014	0%				< 0.0015	< 0.0014	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.0035	0%				< 0.00036	0%				< 0.00038	< 0.00037	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.007	0%				< 0.00071	0%				< 0.00075	< 0.00072	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.0072	0%				< 0.00073	0%				< 0.00078	< 0.00074	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.0086	0%				< 0.00087	0%				< 0.00093	< 0.00089	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.52	0%				< 0.053	0%				< 0.056	< 0.054	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.0089	0%				< 0.00089	0%				< 0.00096	< 0.00091	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.008	0%				< 0.00081	0%				< 0.00087	< 0.00083	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.0071	0%				< 0.00072	0%				< 0.00076	< 0.00073	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	< 0.012	0%				< 0.0013	0%				< 0.0013	< 0.0013	0%			
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.0095	0%				< 0.00096	0%				< 0.001	< 0.00098	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.014	0%				< 0.0014	0%				< 0.0015	< 0.0014	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.0071	0%				< 0.00072	0%				< 0.00076	< 0.00073	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	< 0.0085	0%				< 0.00086	0%				< 0.00092	< 0.00088	0%			
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.0073	0%				< 0.00074	0%				< 0.00079	< 0.00075	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.01	0%				< 0.001	0%				< 0.0011	< 0.001	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.01	0%				< 0.001	0%				< 0.0011	< 0.001	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.0042	0%				< 0.00042	0%				< 0.00045	< 0.00043	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.01	0%				< 0.0011	0%				< 0.0011	< 0.0011	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.0083	0%				< 0.00084	0%				< 0.0009	< 0.00086	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.0082	0%				< 0.00083	0%				< 0.00089	< 0.00085	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.0095	0%				< 0.00096	0%				< 0.001	< 0.00098	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.01	0%				< 0.001	0%				< 0.0011	< 0.0011	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.0075	0%				< 0.00076	0%				< 0.00081	< 0.00077	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.0079	0%				< 0.0008	0%				< 0.00085	< 0.00082	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.0032	0%				< 0.00033	0%				< 0.00035	< 0.00033	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.0048 J	100%	0.00480	0.00480	0.00480	< 0.00039	0%				0.0018 J	0.0021 J	100%	0.00195	0.00180	0.00210

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
J Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
U Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
J+ Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
J- Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
UJ Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-831S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-832D 9/11/2017	MW-832D DUP 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-832S 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-833S 9/11/2017	% Detect	Average	Minimum Detected
PAHs (mg/L)																										
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00011 J	100%	0.00011	0.00011	0.00011	< 0.00004	< 0.00004	0%				< 0.00004	0%				0.001	100%	0.00100	0.00100
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.000053 J	100%	0.00005	0.00005	0.00005	0.00002 J	0.000021 J	100%	0.00002	0.00002	0.00002	< 0.000014	0%				0.0036	100%	0.00360	0.00360
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.00022* J B	100%	0.00022	0.00022	0.00022	< 0.00002 U	< 0.000031 U	0%				< 0.000014	0%				< 0.00036 U	0%		
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.00017* B	100%	0.00017	0.00017	0.00017	< 0.000031 U	< 0.000031 U	0%				< 0.000021 U	0%				< 0.00007 U	0%		
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.000023	0%				< 0.000022	< 0.000023	0%				< 0.000023	0%				< 0.000022	0%		
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000053 J	100%	0.00005	0.00005	0.00005	0.000031 J	0.000031 J	100%	0.00003	0.00003	0.00003	< 0.00002	0%				0.00006 J	100%	0.00006	0.00006
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.000032 J	100%	0.00003	0.00003	0.00003	0.00002 J	0.000021 J	100%	0.00002	0.00002	0.00002	< 0.000011	0%				0.00003 J	100%	0.00003	0.00003
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.000021 J	100%	0.00002	0.00002	0.00002	< 0.000016	< 0.000016	0%				< 0.000016	0%				0.00002 J	100%	0.00002	0.00002
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.00015 J	100%	0.00015	0.00015	0.00015	< 0.000019	< 0.00002	0%				< 0.00002	0%				0.00004 J	100%	0.00004	0.00004
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	0%				< 0.000014	< 0.000014	0%				< 0.000014	0%				< 0.000014	0%		
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.0014	100%	0.00140	0.00140	0.00140	< 0.000051 U	< 0.000062 U	0%				< 0.000023	0%				< 0.00042 U	0%		
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	< 0.00021	0%				< 0.0002	< 0.00021	0%				< 0.00021	0%				0.0012	100%	0.00120	0.00120
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000012	0%				< 0.000011	< 0.000011	0%				< 0.000011	0%				< 0.000011	0%		
Naphthalene	91-20-3	31	NE	2	2	0.013	< 0.00049 U	0%	0.00049	0.00049	0.00049	0.00011 J	0.00014 J	100%	0.00013	0.00011	0.00014	< 0.000033	0%				*0.53* B	100%	0.53000	0.53000
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	< 0.000043	0%				< 0.000042	0.000072 J	50%	0.00007	0.00007	0.00007	< 0.000042	0%				0.0017	100%	0.00170	0.00170
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	*0.0015* B	100%	0.00150	0.00150	0.00150	< 0.000031 U	< 0.000052 U	0%				< 0.000016	0%				< 0.00028 U	0%		
SVOCs (mg/L)																										
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00062	0%				< 0.0006	< 0.00061	0%				< 0.00061	0%				< 0.00059	0%		
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00077	0%				< 0.00074	< 0.00075	0%				< 0.00075	0%				< 0.00073	0%		
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00066	0%				< 0.00064	< 0.00065	0%				< 0.00065	0%				< 0.00063	0%		
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00065	0%				< 0.00063	< 0.00064	0%				< 0.00064	0%				< 0.00062	0%		
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00078	0%				< 0.00076	< 0.00076	0%				< 0.00076	0%				< 0.00074	0%		
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00064	0%				< 0.00062	< 0.00063	0%				< 0.00063	0%				< 0.00061	0%		
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00072	0%				< 0.00069	< 0.0007	0%				< 0.0007	0%				< 0.00068	0%		
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.00032	0%				< 0.00031	< 0.00031	0%				< 0.00031	0%				< 0.0003	0%		
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00049	0%				< 0.00048	< 0.00048	0%				< 0.00048	0%				< 0.00047	0%		
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.0006	0%				< 0.00058	< 0.00059	0%				< 0.00059	0%				< 0.00057	0%		
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00075	0%				< 0.00072	< 0.00073	0%				< 0.00073	0%				< 0.00071	0%		
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00076	0%				< 0.00073	< 0.00074	0%				< 0.00074	0%				< 0.00072	0%		
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00096	0%				< 0.00093	< 0.00094	0%				< 0.00094	0%				< 0.00091	0%		
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.0014	0%				< 0.0013	< 0.0013	0%				< 0.0013	0%				< 0.0013 U	0%		
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00036	0%				< 0.00035	< 0.00035	0%				< 0.00035	0%				< 0.00034	0%		
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00071	0%				< 0.00068	< 0.00069	0%				< 0.00069	0%				< 0.00067	0%		
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00073	0%				< 0.0007	< 0.00071	0%				< 0.00071	0%				< 0.00069	0%		
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.00087	0%				< 0.00085	< 0.00086	0%				< 0.00086	0%				< 0.00083	0%		
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.053	0%				< 0.051	< 0.052	0%				< 0.052	0%				< 0.05	0%		
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00089	0%				< 0.00087	< 0.00088	0%				< 0.00088	0%				< 0.00085	0%		
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00081	0%				< 0.00079	< 0.00079	0%				< 0.00079	0%				< 0.00077	0%		
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00072	0%				< 0.00069	< 0.0007	0%				< 0.0007	0%				< 0.00068	0%		
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	< 0.0013	0%				*0.0017* J B	*0.0019* J B	100%	0.00180	0.00170	0.00190	< 0.0012	0%				< 0.0012	0%		
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00096	0%				< 0.00093	< 0.00094	0%				< 0.00094	0%				< 0.00091	0%		
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	0.0014 J	100%	0.00140	0.00140	0.00140	< 0.0013	< 0.0013	0%				< 0.0013	0%				< 0.0013	0%		
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00072	0%				< 0.00069	< 0.0007	0%				< 0.0007	0%				< 0.00068	0%		
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	< 0.00086	0%				< 0.00084	< 0.00085	0%				< 0.00085	0%				< 0.00082	0%		
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00074	0%				< 0.00071	< 0.00072	0%				< 0.00072	0%				< 0.0007	0%		
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.001	0%				< 0.00098	< 0.00099	0%				< 0.00099	0%				< 0.00096	0%		
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.001	0%				< 0.00098	< 0.00099	0%				< 0.00099	0%				< 0.00096	0%		
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00042	0%				< 0.00041	< 0.00041	0%				< 0.00041	0%				< 0.0004	0%		
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.0011	0%				< 0.001	< 0.001	0%				< 0.001	0%				< 0.001	0%		
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00084	0%				< 0.0043 U	< 0.0036 U	0%	0.00395	0.00360	0.00430	< 0.0022 U	0%	0.00220	0.00220	0.00220	< 0.00087 U	0%	0.00087	0.00087
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00083	0%				< 0.00081	< 0.00081	0%				< 0.00081	0%				< 0.00079	0%		
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00096	0%				< 0.00093	< 0.00094	0%				< 0.00094	0%				< 0.00091	0%		
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.001	0%				< 0.001	< 0.001	0%				< 0.001	0%				< 0.00099	0%		
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00076	0%				< 0.00073	< 0.00074	0%				< 0.00074	0%				< 0.00072	0%		
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.0008	0%				< 0.00078	< 0.00078	0%				< 0.00078	0%				< 0.00076	0%		
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00033	0%				< 0.00033	< 0.00032	0%				< 0.00032	0%				< 0.00031	0%		
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00039	0%				0.019	0.02	100%	0.01950	0.01900	0.02000	< 0.00038	0%				< 0.00037	0%		

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected
PAHs (mg/L)							
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.00100
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.00360
Anthracene	120-12-7	0.043	NE	31	31	0.000035	
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00006
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	0.00003
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.00002
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.00004
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.00120
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	
Naphthalene	91-20-3	31	NE	2	2	0.013	0.53000
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.00170
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	
SVOCs (mg/L)							
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	
Benzidine	92-87-5	NE	NE	NE	NE	NE	
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	
Isophorone	78-59-1	12,000	NE	3	3	0.92	0.00087
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	
Phenol	108-95-2	83,000	NE	31	31	0.180	

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-834D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-835D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-836S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																					
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	< 0.000041	0%				0.000072 J	100%	0.00007	0.00007	0.00007	0.0026 J	100%	0.00260	0.00260	0.00260
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.000052 J	100%	0.00005	0.00005	0.00005	0.00022 J	100%	0.00022	0.00022	0.00022	0.0041 J	100%	0.00410	0.00410	0.00410
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.0001* J B	100%	0.00010	0.00010	0.00010	0.000031 J	100%	0.00003	0.00003	0.00003	*0.00089* J B	100%	0.00089	0.00089	0.00089
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.00032* B	100%	0.00032	0.00032	0.00032	0.000021 J	100%	0.00002	0.00002	0.00002	*0.00022* J B	100%	0.00022	0.00022	0.00022
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	***0.00043*** A(MCL,I,DCL),B	100%	0.00043	0.00043	0.00043	< 0.000023					< 0.00024	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.00033	100%	0.00033	0.00033	0.00033	< 0.00002					< 0.00021	0%			
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.0002 U	0%				< 0.000011					< 0.00012	0%			
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.0001	100%	0.00010	0.00010	0.00010	< 0.000016					< 0.00018	0%			
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.00028 J	100%	0.00028	0.00028	0.00028	< 0.00002					< 0.00021	0%			
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	0.000052	100%	0.00005	0.00005	0.00005	< 0.000014					< 0.00016	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	0.00071	100%	0.00071	0.00071	0.00071	0.000082 J	100%	0.00008	0.00008	0.00008	0.00089 J	100%	0.00089	0.00089	0.00089
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	< 0.00021	0%				< 0.00021					0.0042 J	100%	0.00420	0.00420	0.00420
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	**0.00033** A(GW)	100%	0.00033	0.00033	0.00033	< 0.000011					< 0.00012	0%			
Naphthalene	91-20-3	31	NE	2	2	0.013	0.00033 J	100%	0.00033	0.00033	0.00033	0.0017	100%	0.00170	0.00170	0.00170	*0.41* B	100%	0.41000	0.41000	0.41000
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	0.00024 J	100%	0.00024	0.00024	0.00024	0.00011 J	100%	0.00011	0.00011	0.00011	*0.0044* J B	100%	0.00440	0.00440	0.00440
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	*0.0005* J B	100%	0.00050	0.00050	0.00050	0.000052 J	100%	0.00005	0.00005	0.00005	*0.00067* J B	100%	0.00067	0.00067	0.00067
SVOCs (mg/L)																					
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00061	0%				< 0.00061	0%				< 0.00066	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00076	0%				< 0.00075	0%				< 0.00081	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00066	0%				< 0.00065	0%				< 0.0007	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00065	0%				< 0.00064	0%				< 0.00069	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.00077	0%				< 0.00076	0%				< 0.00082	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00064	0%				< 0.00063	0%				< 0.00068	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00071	0%				< 0.0007	0%				0.0021 J	100%	0.00210	0.00210	0.00210
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.00031	0%				< 0.00031	0%				< 0.00033	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00049	0%				< 0.00048	0%				< 0.00052	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00059	0%				< 0.00059	0%				< 0.00063	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00074	0%				< 0.00073	0%				< 0.00079	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00075	0%				< 0.00074	0%				< 0.0008	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00095	0%				< 0.00094	0%				< 0.001	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.0014	0%				< 0.0013	0%				< 0.0014	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00035	0%				< 0.00035	0%				< 0.00038	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.0007	0%				< 0.00069	0%				< 0.00074	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00072	0%				< 0.00071	0%				< 0.00077	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.00086	0%				< 0.00086	0%				< 0.00092	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.052	0%				< 0.052	0%				< 0.056	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00089	0%				< 0.00088	0%				< 0.00094	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.0008	0%				< 0.00079	0%				< 0.00086	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00071	0%				< 0.0007	0%				< 0.00076	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	*0.0013* J B	100%	0.00130	0.00130	0.00130	< 0.0012	0%				< 0.0013	0%			
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00095	0%				< 0.00094	0%				< 0.001	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.0014	0%				< 0.0013	0%				< 0.0014	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00071	0%				< 0.0007	0%				< 0.00076	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	< 0.00085	0%				< 0.00085	0%				< 0.00091	0%			
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00073	0%				< 0.00072	0%				< 0.00078	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.001	0%				< 0.00099	0%				< 0.0011	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.001	0%				< 0.00099	0%				< 0.0011	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00042	0%				< 0.00041	0%				< 0.00044	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.001	0%				< 0.001	0%				< 0.0011	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00083	0%				< 0.00082	0%				< 0.00089	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00082	0%				< 0.00081	0%				< 0.00088	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00095	0%				< 0.00094	0%				< 0.001	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.001	0%				< 0.001	0%				< 0.0011	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00075	0%				< 0.00074	0%				< 0.0008	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00079	0%				< 0.00078	0%				< 0.00084	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00032	0%				< 0.00032	0%				***0.0073*** J A(MCL),B	100%	0.00730	0.00730	0.00730
Phenol	108-95-2	83,000	NE	31	31	0.180	< 0.00039	0%				< 0.00038	0%				0.001 J	100%	0.00100	0.00100	0.00100

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitatic
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4B
Groundwater Sample Laboratory Results - PAHs and SVOCs

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-837S 9/13/2017	MW-837S DUP 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-838S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-839S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
PAHs (mg/L)																						
Acenaphthene	83-32-9	4.2	NE	6.1	6.1	0.038	0.0058	0.0057	100%	0.00575	0.00570	0.00580	0.011	100%	0.01100	0.01100	0.01100	0.014	100%	0.01400	0.01400	0.01400
Acenaphthylene	208-96-8	3.9	NE	0.73	0.73	4.84	0.025	0.024	100%	0.02450	0.02400	0.02500	0.00042 J	100%	0.00042	0.00042	0.00042	0.00064	100%	0.00064	0.00064	0.00064
Anthracene	120-12-7	0.043	NE	31	31	0.000035	*0.002* B	*0.0016* J B	100%	0.00180	0.00160	0.00200	*0.0032* J B	100%	0.00320	0.00320	0.00320	*0.00029* J B	100%	0.00029	0.00029	0.00029
Benzo[a]anthracene	56-55-3	0.0094	NE	0.0039	0.0039	0.000025	*0.000097* J B	*0.00021* J B	100%	0.00015	0.00010	0.00021	*0.00063* J B	100%	0.00063	0.00063	0.00063	*0.000081* J B	100%	0.00008	0.00008	0.00008
Benzo[a]pyrene	50-32-8	0.0016	0.0002	0.00039	0.00039	0.000014	< 0.000024	< 0.00023	0%				< 0.00023	0%				< 0.000022	0%			
Benzo[b]fluoranthene	205-99-2	0.0015	NE	0.0039	0.0039	0.00907	0.000043 J	< 0.0002	50%	0.00012	0.00004	0.00020	0.00032 J	100%	0.00032	0.00032	0.00032	0.000081 J	100%	0.00008	0.00008	0.00008
Benzo[g,h,i]perylene	191-24-2	NE	NE	NE	NE	0.00764	< 0.000032 U	< 0.00031 U	0%	0.00017	0.00003	0.00031	< 0.00012	0%				0.000051 J	100%	0.00005	0.00005	0.00005
Benzo[k]fluoranthene	207-08-9	0.0008	NE	0.039	0.039	NE	0.000022 J	< 0.00017	50%	0.00010	0.00002	0.00017	< 0.00017	0%				0.00003 J	100%	0.00003	0.00003	0.00003
Chrysene	218-01-9	0.0016	NE	0.39	0.39	NE	0.000065 J	< 0.0002	50%	0.00013	0.00007	0.00020	0.00042 J	100%	0.00042	0.00042	0.00042	0.000061 J	100%	0.00006	0.00006	0.00006
Dibenzo[a,h]anthracene	53-70-3	0.0025	NE	0.00039	0.00039	NE	< 0.000015	< 0.00021 U	0%				< 0.00015	0%				< 0.000014	0%			
Fluoranthene	206-44-0	0.21	NE	4.1	4.1	0.0019	*0.002* B	*0.0021* J B	100%	0.00205	0.00200	0.00210	*0.0054* B	100%	0.00540	0.00540	0.00540	0.00039 J	100%	0.00039	0.00039	0.00039
Fluorene	86-73-7	2	NE	4.1	4.1	0.019	0.011	0.011	100%	0.01100	0.01100	0.01100	0.014	100%	0.01400	0.01400	0.01400	0.0061	100%	0.00610	0.00610	0.00610
Indeno[1,2,3cd]pyrene	193-39-5	0.000022	NE	0.0039	0.0039	0.00431	< 0.000012	< 0.00011	0%				< 0.00012	0%				< 0.000011	0%			
Naphthalene	91-20-3	31	NE	2	2	0.013	*0.12* B	*0.12* B	100%	0.12000	0.12000	0.12000	*0.51* B	100%	0.51000	0.51000	0.51000	*0.26* B	100%	0.26000	0.26000	0.26000
Phenanthrene	85-01-8	1.2	NE	0.31	0.31	0.0036	*0.012* B	*0.012* B	100%	0.01200	0.01200	0.01200	*0.018* B	100%	0.01800	0.01800	0.01800	0.00043 J	100%	0.00043	0.00043	0.00043
Pyrene	129-00-0	0.14	NE	3.1	3.1	0.0003	*0.0013* B	*0.0015* J B	100%	0.00140	0.00130	0.00150	*0.0031* J B	100%	0.00310	0.00310	0.00310	*0.00031* J B	100%	0.00031	0.00031	0.00031
SVOCs (mg/L)																						
1,2,4-Trichlorobenzene	120-82-1	300	0.07	1	1	0.030	< 0.00063	< 0.00061	0%				< 0.00062	0%				< 0.0006	0%			
1,2-Dichlorobenzene	95-50-1	160	0.6	9.2	9.2	0.014	< 0.00078	< 0.00076	0%				< 0.00077	0%				< 0.00074	0%			
1,2-Diphenyl-hydrazine	122-66-7	NE	NE	NE	NE	NE	< 0.00068	< 0.00066	0%				< 0.00066	0%				< 0.00064	0%			
1,4-Dichlorobenzene	106-46-7	74	0.075	0.12	0.12	0.0094	< 0.00067	< 0.00065	0%				< 0.00065	0%				< 0.00063	0%			
2,4,6-Trichlorophenol	88-06-2	800	NE	0.01	0.01	0.0049	< 0.0008	< 0.00077	0%				< 0.00078	0%				< 0.00075	0%			
2,4-Dichlorophenol	120-83-2	4,500	NE	0.31	0.31	0.011	< 0.00066	< 0.00064	0%				< 0.00064	0%				< 0.00062	0%			
2,4-Dimethylphenol	105-67-9	7,900	NE	2	2	0.1	< 0.00073	< 0.00071	0%				0.0037 J	100%	0.00370	0.00370	0.00370	< 0.00069	0%			
2,4-Dinitrophenol	51-28-5	2,800	NE	0.2	0.2	0.019	< 0.00032	< 0.00031	0%				< 0.00032	0%				< 0.0003	0%			
2,4-Dinitrotoluene	121-14-2	NE	NE	NE	NE	0.044	< 0.00051	< 0.00049	0%				< 0.00049	0%				< 0.00047	0%			
2,6-Dinitrotoluene	606-20-2	NE	NE	NE	NE	0.081	< 0.00061	< 0.00059	0%				< 0.0006	0%				< 0.00058	0%			
2-Chloronaphthalene	91-58-7	12	NE	8.2	8.2	0.000396	< 0.00076	< 0.00074	0%				< 0.00075	0%				< 0.00072	0%			
2-Chlorophenol	95-57-8	22,000	NE	0.51	0.51	0.024	< 0.00077	< 0.00075	0%				< 0.00076	0%				< 0.00073	0%			
2-Nitrophenol (o-Nitrophenol)	88-75-5	NE	NE	NE	NE	NE	< 0.00098	< 0.00095	0%				< 0.00096	0%				< 0.00092	0%			
3,3-Dichlorobenzidine	91-94-1	3.1	NE	0.0064	0.0064	0.0045	< 0.0014	< 0.0014	0%				< 0.0014	0%				< 0.0013	0%			
4,6-Dinitro-o-cresol	534-52-1	NE	NE	NE	NE	0.023	< 0.00037	< 0.00035	0%				< 0.00036	0%				< 0.00034	0%			
4-Bromophenyl phenyl ether	101-55-3	NE	NE	NE	NE	0.0015	< 0.00072	< 0.0007	0%				< 0.00071	0%				< 0.00068	0%			
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	NE	NE	NE	< 0.00074	< 0.00072	0%				< 0.00073	0%				< 0.0007	0%			
4-Nitrophenol (p-Nitrophenol)	100-02-7	NE	NE	NE	NE	0.06	< 0.00089	< 0.00086	0%				< 0.00087	0%				< 0.00084	0%			
Benzidine	92-87-5	NE	NE	NE	NE	NE	< 0.054	< 0.052	0%				< 0.053	0%				< 0.051	0%			
bis(2-Chloroethoxy)methane[D]	111-91-1	NE	NE	NE	NE	NE	< 0.00091	< 0.00089	0%				< 0.00089	0%				< 0.00086	0%			
bis(2-Chloroethyl)ether[E]	111-44-4	17,000	NE	0.0026	0.0026	19	< 0.00083	< 0.0008	0%				< 0.00081	0%				< 0.00078	0%			
bis(2-Chloroisopropyl)ether	108-60-1	NE	NE	NE	NE	NE	< 0.00073	< 0.00071	0%				< 0.00072	0%				< 0.00069	0%			
bis(2-Ethylhexyl)phthalate	117-81-7	0.34	0.006	0.2	0.2	0.0003	< 0.0013	< 0.0012	0%				< 0.0013	0%				< 0.0012	0%			
Butyl benzyl phthalate	85-68-7	2.7	NE	20	2.7	0.023	< 0.00098	< 0.00095	0%				< 0.00096	0%				< 0.00092	0%			
Diethyl phthalate	84-66-2	1,100	NE	82	82	0.11	< 0.0014	< 0.0014	0%				< 0.0014	0%				< 0.0013	0%			
Dimethyl phthalate	131-11-3	4,000	NE	1,000	1,000	NE	< 0.00073	< 0.00071	0%				< 0.00072	0%				< 0.00069	0%			
Di-n-butyl phthalate	84-74-2	11	NE	10	10	0.0097	< 0.00088	< 0.00085	0%				< 0.00086	0%				< 0.00083	0%			
Di-n-octyl phthalate	117-84-0	0.02	NE	4.1	0.02	0.030	< 0.00075	< 0.00073	0%				< 0.00074	0%				< 0.00071	0%			
Hexachlorobenzene	118-74-1	6.2	0.001	0.0018	0.0018	$3X10^{-7}$	< 0.001	< 0.001	0%				< 0.001	0%				< 0.00097	0%			
Hexachlorobutadiene	87-68-3	3.2	NE	0.031	0.031	0.000053	< 0.001	< 0.001	0%				< 0.001	0%				< 0.00097	0%			
Hexachlorocyclopentadiene	77-47-4	1.8	0.05	0.61	0.61	0.077	< 0.00043	< 0.00042	0%				< 0.00042	0%				< 0.0004	0%			
Hexachloroethane	67-72-1	50	NE	0.1	0.1	0.008	< 0.0011	< 0.001	0%				< 0.0011	0%				< 0.001	0%			
Isophorone	78-59-1	12,000	NE	3	3	0.92	< 0.00086	< 0.00083	0%				< 0.00084	0%				< 0.00081	0%			
Nitrobenzene	98-95-3	2,100	NE	0.051	0.051	NE	< 0.00085	< 0.00082	0%				< 0.00083	0%				< 0.0008	0%			
N-Nitrosodimethylamine	62-75-9	NE	NE	NE	NE	NE	< 0.00098	< 0.00095	0%				< 0.00096	0%				< 0.00092	0%			
N-Nitrosodi-n-propylamine	621-64-7	9,900	NE	0.00041	0.00041	NE	< 0.0011	< 0.001	0%				< 0.001	0%				< 0.001	0%			
N-Nitrosodiphenylamine	86-30-6	35	NE	0.58	0.58	NE	< 0.00077	< 0.00075	0%				< 0.00076	0%				< 0.00073	0%			
p-Chloro-m-cresol	59-50-7	NE	NE	NE	NE	NE	< 0.00082	< 0.00079	0%				< 0.0008	0%				< 0.00077	0%			
Pentachlorophenol	87-86-5	2,000	0.001	0.024	0.024	0.004	< 0.00035	< 0.00032	0%				< 0.00033	0%				< 0.00031	0%			
Phenol	108-95-2	83,000	NE	31	31	0.180	0.00074 J	0.00079 J	100%	0.00077	0.00074	0.00079	0.031	100%	0.03100	0.03100	0.03100	0.0011 J	100%	0.00110	0.00110	0.00110

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
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A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-801D Total Metals 10/29/2012	MW-801D Dup Total Metals 10/29/2012	MW-801D Total Metals 7/16/2013	MW-801D Total Metals 9/13/2017	MW-801D Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-801S Total Metals 10/29/2012	MW-801S Total Metals 7/16/2013	MW-801S Total Metals 9/13/2017
Metals (mg/L)																		
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0027 J	0.0011 J	< 0.0002	< 0.00009 U	< 0.00005 B	50%	0.00102	0.00009	0.0027	0.00093 J	0.00057 J	< 0.00023 U
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0077** J A(I)	**0.0059** J A(I)	**0.0085** J A(I)	0.00094 J	< 0.0008	100%	0.00576	0.00094	0.0085	**0.011** A(MCL,I,DCL)	**0.0091** J A(I)	**0.011** J A(MCL,I,DCL)
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015 UJ	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015 UJ
Boron	7440-42-8	NE	NE	NE	NE	NE	0.24	0.22	0.21	0.17	0.17 J+	100%	0.210	0.17	0.24	0.092	0.09	0.069
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0017 J	0.002 J	< 0.0003	< 0.0015 U	< 0.001	50%	0.0014	0.0003	0.002	0.0018 J	< 0.0003	0.017
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	NP	0.0018 J	NP	100%	0.0018	0.0018	0.0018	NP	NP	0.076
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	< 0.00015	< 0.00015	0.00068 J	0.0019 J B	< 0.0004	50%	0.00072	0.00015	0.0019	0.0019 J B	0.0054 J B	0.002 J B
Iron	7439-89-6	NE	NE	NE	NE	NE	5.9	5.9	6.1	9.6	1.0	100%	6.9	5.9	9.6	0.35	0.22	0.4 J
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00014 J	0.00011 J	< 0.0001	0.00057 J	< 0.0001	75%	0.00023	0.0001	0.00057	< 0.0001	0.00015 J	0.00012 J
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.18	0.18	0.16	0.19	0.17	100%	0.178	0.16	0.19	0.00089 J	0.00088 J	0.00085 J
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< 0.000020	< 0.000020	< 0.000030	< 0.00014 U	NP	0%	0.00005	0.00002	0.00014	< 0.000020	< 0.000030	< 0.00016 U
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.011 J	0.0053 J	0.0027 J	< 0.00092 U	< 0.00069 U	75%	0.00498	0.00092	0.011	0.022	0.021	0.019
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0011 J	0.0011 J	< 0.0001	0.00082 J	< 0.00035	75%	0.00078	0.0001	0.0011	0.01	0.0041 J	0.006
Potassium	7440-09-7	NE	NE	NE	NE	NE	5	5.2	5	5.5	5.0	100%	5.18	5	5.5	54	74	25
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0078 B	0.0035 J	0.001 J	0.00095 J	< 0.0004	100%	0.00331	0.00095	0.0078	0.0049 J	0.0044 J	0.0033 J
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001 UJ	0%				< 0.00015	< 0.00015	< 0.0001
Sodium	7440-23-5	NE	NE	NE	NE	NE	49	52	55	68	130	100%	56.0	49	68	270	550	160
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	**0.003** J A(MCL)	0.001 J	0.00028 J	< 0.00029 U	< 0.0001 B	75%	0.00114	0.00028	0.003	0.00047 J	0.00045 J	0.00024 J
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0033 J	0.0016 J	0.0008 J	0.0016 J	< 0.00015	100%	0.00183	0.0008	0.0033	0.00075 J	0.0014 J	< 0.00015
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	< 0.00050	0.00210 J	0.00240 J	0.0022 J	< 0.0014	75%	0.00180	0.0005	0.0024	0.01200 B	0.05000 B	0.013 B
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0013 J	< 0.0005	0.00028 J	0.0099 J	0.0034 J	75%	0.0030	0.00028	0.0099	< 0.0005	0.0071 J	< 0.0027

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
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A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals results.

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-801S Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)											
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.00017 U	67%	0.001	0.0002	0.001
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.014** A(MCL,I,DCL)	100%	0.010	0.0091	0.011
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.076 J+	100%	0.084	0.0690	0.092
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.0001	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0094	67%	0.006	0.0003	0.017
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	100%	0.076	0.076	0.076
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.001 J	100%	0.003	0.0019	0.005
Iron	7439-89-6	NE	NE	NE	NE	NE	0.3 J	100%	0.323	0.22	0.400
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	< 0.0001	67%	0.0001	0.0001	0.0002
Manganese	7439-96-5	NE	NE	NE	NE	NE	< 0.00053 U	100%	0.001	0.0009	0.001
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	NP	0%	0.000	0.0000	0.000
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.021 J+	100%	0.021	0.0190	0.022
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0054	100%	0.007	0.0041	0.010
Potassium	7440-09-7	NE	NE	NE	NE	NE	24.0	100%	51.000	25	74.000
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.002 J	100%	0.004	0.0033	0.005
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.0001 UJ	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	340	100%	327	160	550
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.0001 B	100%	0.0004	0.0002	0.0005
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.00015	67%	0.001	0.0002	0.001
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.0081	100%	0.025	0.0120	0.050
Zinc	7440-66-6	NE	NE	31	31	0.0657	< 0.0027	33%	0.003	0.0005	0.007

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
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[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-802S 10/31/2012	MW-802S-Dup 10/31/2012	MW-802S 7/16/2013	% Detect	Average	Minimum Detected	Maximum Detected	MW-803D Total Metals 10/31/2012	MW-803D Total Metals 7/17/2013	MW-803D Total Metals 9/13/2017	MW-803D Dissolved Metals 9/13/2017	% Detect
Metals (mg/L)																		
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00083 J	0.00083 J	0.0015 J	100%	0.00105	0.00083	0.0015	0.00058 J	< 0.0002	< 0.0012 U	0.00019 J	33%
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.0017 J	0.0017 J	0.001 J	100%	0.00147	0.001	0.0017	**0.034** A(MCL,I,DCL)	**0.038** A(MCL,I,DCL)	**0.039** A(MCL,I,DCL)	**0.046** A(MCL,I,DCL)	100%
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%
Boron	7440-42-8	NE	NE	NE	NE	NE	0.4	0.39	0.46	100%	0.41667	0.39	0.46	0.32	0.33	0.44	0.47	100%
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	*< 0.00015*	*< 0.00015*	*< 0.00015*	0%				*0.00021* J B	*0.00021* J B	< 0.0001	< 0.0001	67%
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0022 J	0.0024 J	0.006	100%	0.00353	0.0022	0.006	0.0094	0.0068	0.0052	0.006	100%
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	NP					NP	NP	0.073	NP	100%
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0045* J B	*0.0047* J B	*0.0084* J B	100%	0.00587	0.0045	0.0084	*0.0073* J B	*0.0085* J B	*0.012* B	0.00088 J	100%
Iron	7439-89-6	NE	NE	NE	NE	NE	0.34	0.44	< 0.0015	67%	0.26050	0.0015	0.44	0.36	0.26	0.25 J	0.2 J	100%
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	< 0.0001	0.00014 J	< 0.0001	33%	0.00011	0.0001	0.00014	0.00013 J	< 0.0001	0.00021 J	< 0.0001	67%
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.36	0.37	0.02	100%	0.25000	0.02	0.37	0.0097	0.0072	0.0071	0.0067	100%
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	*< #######*	*< #######*	*< #######*	0%				*< 0.000020*	*< 0.000030*	*< 2E-05*	NP	0%
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.02 J	0.019 J	0.052	100%	0.03033	0.019	0.052	0.0057 J	0.0036 J	0.0071	0.004 J	100%
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0061 J	0.0058 J	0.0013 J	100%	0.00440	0.0013	0.0061	0.0063 J	0.0067 J	0.0059	0.0065	100%
Potassium	7440-09-7	NE	NE	NE	NE	NE	43	43	24	100%	36.66667	24	43	29	26	19	18	100%
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	*0.0086* B	*0.0086* B	0.0045 J	100%	0.00723	0.0045	0.0086	*0.036* B	*0.041* B	< 0.003 U	0.0033 J	67%
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	*< 0.00015*	*< 0.00015*	*< 0.00015*	0%				*< 0.00015*	*< 0.00015*	< 0.0001	< 0.0001 UJ	0%
Sodium	7440-23-5	NE	NE	NE	NE	NE	190	190	130	100%	170	130	190	330	440	630	650	100%
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.00015	< 0.00015	< 0.00015	0%				0.00034 J	< 0.00015	0.0017	< 0.0001	67%
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.0004	< 0.0004	< 0.0004	0%				0.0016 J	< 0.0004	< 0.00015	< 0.00015	33%
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00140 J	< 0.00050	0.00340 J	67%	0.00177	0.0005	0.0034	*0.01900* B	*0.02500* B	*0.021* B	*0.026* B	100%
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0079 J	0.0077 J	0.013 J	100%	0.00953	0.0077	0.013	0.002 J	0.034	0.0074 J	0.0047 J	100%

Notes:

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[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
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TABLE 2-4C
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Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Average	Minimum Detected	Maximum Detected
Metals (mg/L)									
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.001	0.0002	0.001
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.037	0.0340	0.039
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.363	0.3200	0.440
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	0.000	0.0001	0.000
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.007	0.0052	0.009
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	0.073	0.0730	0.073
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.009	0.0073	0.012
Iron	7439-89-6	NE	NE	NE	NE	NE	0.290	0.2500	0.360
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.0001	0.0001	0.0002
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.008	0.0071	0.010
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013			
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.005	0.0036	0.007
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.006	0.0059	0.007
Potassium	7440-09-7	NE	NE	NE	NE	NE	25	19	29
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.027	0.0030	0.041
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012			
Sodium	7440-23-5	NE	NE	NE	NE	NE	467	330	630
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.001	0.0002	0.002
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.001	0.0002	0.002
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.022	0.0190	0.025
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.014	0.0020	0.034

Notes:

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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-803M Total Metals 10/31/2012	MW-803M Total Metals 7/17/2013	MW-803M Total Metals 9/13/2017	MW-803M Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-803S Total Metals 10/31/2012	MW-803S Total Metals 7/17/2013	MW-803S Total Metals 9/13/2017	MW-803S Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected
Metals (mg/L)																					
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.0002	< 0.0002	< 0.00035 U	< 0.0002	0%	0.0003	0.0002	0.0004	0.0035 J	< 0.0002	< 0.001 U	< 0.0002	33%	0.0016	0.0002
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0027** J A(I)	**0.0029** J A(I)	0.0012 J	< 0.0032	100%	0.002	0.0012	0.003	**0.0046** J A(I)	< 0.00015	< 0.0008	< 0.0032	33%	0.002	0.0002
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%		
Boron	7440-42-8	NE	NE	NE	NE	NE	0.44	0.46	0.19	0.18 J+	100%	0.36	0.19	0.46	0.2	0.16	0.19	0.18 J+	100%	0.18	0.16
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%		
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0044	0.0042	0.0014 J	< 0.004	100%	0.003	0.0014	0.004	0.0029 J	0.0019 J	0.0015 J	< 0.004	100%	0.002	0.0015
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	< 0.001 R	NP	0%				NP	NP	**0.13** J- A(MCL)	NP	100%	0.130	0.130
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.00031 J	0.00058 J	< 0.0004	< 0.0016	67%	0.0004	0.0003	0.001	0.0019 J B	0.00085 J	0.002 J B	0.0021 J B	100%	0.0016	0.0009
Iron	7439-89-6	NE	NE	NE	NE	NE	0.88	0.47	0.27 J	0.1 J	100%	0.54	0.27	0.88	0.59	0.42	0.83 J	0.5	100%	0.61	0.42
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00044 J	0.00028 J	< 0.0001	< 0.0004	67%	0.0003	0.0001	0.0004	0.00037 J	0.00015 J	< 0.0001	< 0.0004	67%	0.0002	0.0001
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.047	0.031	0.034	0.024	100%	0.037	0.0310	0.047	0.16	0.21	0.16	0.14	100%	0.177	0.1600
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< ####### B	< 2E-05	NP	0%				< #######	< #######	< 0.00013 U	NP	0%	0.00006	0.00002
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.00084 J	< 0.0003	< 0.00026 U	0.0021 J	33%	0.0005	0.0003	0.0008	0.023	0.00096 J	< 0.0012 U	0.0037 J	67%	0.0084	0.0010
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0012 J	0.001 J	0.00062 J	< 0.0014	100%	0.001	0.0006	0.001	0.0033 J	0.0015 J	0.0018 J	< 0.0014	100%	0.002	0.0015
Potassium	7440-09-7	NE	NE	NE	NE	NE	2.3	2.3	2.3	1.8	100%	2.3	2.3	2.3	3.6	4.7	7.6	6.9	100%	5.3	3.6
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.002 J	0.0018 J	< 0.0033 U	< 0.0016	67%	0.002	0.0018	0.003	0.012 B	0.0015 J	0.0071 J+ B	< 0.0016	100%	0.007	0.0015
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001 UJ	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%		
Sodium	7440-23-5	NE	NE	NE	NE	NE	47	50	62	53	100%	53	47	62	31	50	60	52	100%	47	31
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%				**0.0032** J A(MCL)	0.00016 J	0.00031 J	< 0.0004	100%	0.0012	0.0002
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.0004	< 0.0004	< 0.00015	< 0.0006	0%				0.011 J	< 0.0004	< 0.00015	< 0.0006	33%	0.0039	0.0002
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00230 J	0.00200 J	< 0.0014	< 0.0054	67%	0.002	0.0014	0.002	0.00450 J	0.00220 J	0.0024 J	< 0.0054	100%	0.003	0.0022
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.003 J	0.0047 J	0.0049 J	< 0.011	100%	0.004	0.0030	0.005	0.0022 J	0.032	< 0.0027	< 0.011	67%	0.012	0.0022

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected
Metals (mg/L)							
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0035
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.005
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	
Boron	7440-42-8	NE	NE	NE	NE	NE	0.20
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.003
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	0.130
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.002
Iron	7439-89-6	NE	NE	NE	NE	NE	0.83
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.0004
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.210
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	0.00013
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0230
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.003
Potassium	7440-09-7	NE	NE	NE	NE	NE	7.6
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.012
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	
Sodium	7440-23-5	NE	NE	NE	NE	NE	60
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0032
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0110
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.005
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.032

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-804S Total Metals 10/29/2012	MW-804S Total Metals 7/16/2013	MW-804S Total Metals 9/13/2017	MW-804S Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-805D Total Metals 10/31/2012	MW-805D Total Metals 7/16/2013	MW-805D-Dup Total Metals 7/16/2013	MW-805D Total Metals 9/12/2017
Metals (mg/L)																		
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00061 J	0.00093 J	< 0.00054 U	0.0001 J	67%	0.0007	0.0005	0.0009	0.00099 J	0.0014 J	0.00047 J	< 0.00005
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.012** A(MCL,I,DCL)	**0.0061** J A(I)	**0.0032** J A(I)	< 0.0008	100%	0.007	0.0032	0.012	**0.0075** J A(I)	**0.011** A(MCL,I,DCL)	**0.0081** J A(I)	< 0.0008
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.18	0.26	0.17	0.16 J+	100%	0.20	0.17	0.26	0.32	0.27	0.25	0.18
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.00015	< 0.0001
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0018 J	0.0031	< 0.002 U	< 0.001	67%	0.002	0.0018	0.003	0.00067 J	< 0.0003	< 0.0003	< 0.001
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	< 0.001 UJ	NP	0%					NP	NP	0.0033 J
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	< 0.00015	0.00042 J	0.0016 J B	< 0.0004	67%	0.0007	0.0002	0.002	0.0011 J	0.0011 J	0.0012 J	0.0014 J
Iron	7439-89-6	NE	NE	NE	NE	NE	4.7	1.8	3.6	0.013 J	100%	3.37	1.80	4.70	13	12	13	9.7
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00032 J	0.00031 J	0.00011 J	< 0.0001	100%	0.0002	0.0001	0.0003	0.00013 J	0.00026 J	0.00021 J	0.00023 J
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.56	0.68	0.75	0.74	100%	0.663	0.5600	0.750	0.11	0.1	0.1	0.059
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	0.000230 B	< 0.00013 U	NP	33%	0.00013	0.00002	0.00023	< #######	< #######	< #######	< 0.000074 U
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0042 J	0.022	< 0.0031 U	0.0024 J	67%	0.0098	0.0031	0.0220	0.011 J	0.022	0.0075 J	< 0.0028 U
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0023 J	0.0026 J	0.0019 J	0.0016 J	100%	0.002	0.0019	0.003	0.0014 J	< 0.0001	< 0.0001	0.0022 J
Potassium	7440-09-7	NE	NE	NE	NE	NE	5.4	4.7	6.4	6.0	100%	5.5	4.7	6.4	7.5	7.5	7.6	8.1
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0017 J	0.011 B	0.00084 J	< 0.0004	100%	0.005	0.0008	0.011	0.0027 J	0.0089 B	0.002 J	0.0011 J
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.00015	< 0.0001
Sodium	7440-23-5	NE	NE	NE	NE	NE	20	23	23	21	100%	22	20	23	95	99	97	130
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.00049 J	**0.0036** J A(MCL)	< 0.0007 U	< 0.0001	67%	0.0016	0.0005	0.0036	0.0008 J	**0.003** J A(MCL)	0.00072 J	< 0.00013 U
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00095 J	0.0075 J	< 0.00015	< 0.00015	67%	0.0029	0.0002	0.0075	0.0032 J	0.007 J	0.002 J	< 0.00015
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00300 J	< 0.00050	0.0064 J	< 0.0014	67%	0.003	0.0005	0.006	< 0.00050	0.00300 J	0.00370 J	< 0.0014
Zinc	7440-66-6	NE	NE	31	31	0.0657	< 0.0005	0.004 J	< 0.0027	< 0.0027	33%	0.002	0.0005	0.004	0.011 J	0.01 J	0.009 J	< 0.0083 U

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-805D Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)											
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.00015 [U]	75%	0.0007	0.0001	0.0014
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	< 0.0008	75%	0.0069	0.0008	0.0110
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.17 [J+]	100%	0.26	0.18	0.32
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.0001	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	< 0.001	25%	0.0006	0.0003	0.0010
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	100%	0.0033	0.0033	0.0033
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	< 0.0004	100%	0.0012	0.0011	0.0014
Iron	7439-89-6	NE	NE	NE	NE	NE	0.066 [J]	100%	12	10	13
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	< 0.0001	100%	0.0002	0.0001	0.0003
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.057	100%	0.0923	0.0590	0.1100
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	NP	0%	0.00004	0.00002	0.00007
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0024 [J]	75%	0.011	0.003	0.022
Nickel	7440-2-0	NE	NE	2	2	0.0289	< 0.00035	50%	0.0010	0.0001	0.0022
Potassium	7440-09-7	NE	NE	NE	NE	NE	8.5 [J-]	100%	7.7	7.5	8.1
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	< 0.0004	100%	0.0037	0.0011	0.0089
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	110	100%	105	95	130
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.0001	75%	0.0012	0.0001	0.0030
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00021 [J]	75%	0.0031	0.0002	0.0070
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	< 0.0014	50%	0.0022	0.0005	0.0037
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.011	75%	0.0096	0.0083	0.0110

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-805S Total Metals 10/31/2012	MW-805S Total Metals 7/17/2013	MW-805S Total Metals 9/12/2017	MW-805S Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-806D Total Metals 10/31/2012	MW-806D Total Metals 7/17/2013	MW-806D Total Metals 9/14/2017	D
Metals (mg/L)																		
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00038 J	0.00041 J	< 0.00005 UJ	< 0.0003 U	67%	0.0003	0.0001	0.0004	0.00028 J	0.00075 J	< 0.00048 U	<
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.013** A(MCL,I,DCL)	**0.013** A(MCL,I,DCL)	**0.0039** J A(I)	**0.0047** J A(I)	100%	0.010	0.0039	0.013	**0.017** A(MCL,I,DCL)	**0.011** A(MCL,I,DCL)	< 0.0008	
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015 UJ	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	<
Boron	7440-42-8	NE	NE	NE	NE	NE	0.37	0.24	0.081 J+	0.11 J+	100%	0.23	0.08	0.37	0.19 J	0.17	0.17	
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001 UJ	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001	<
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0026 J	0.00073 J	< 0.001 UJ	< 0.001	67%	0.001	0.0007	0.003	0.0078	0.0032	0.0016 J	
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	0.0084 J	NP	100%	0.0084	0.0084	0.0084	NP	NP	< **0.001**	
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0041* J B	*0.0079* J B	0.00097 J	< 0.0004	100%	0.0043	0.0010	0.008	*0.013* B	*0.0093* J B	< 0.0004	
Iron	7439-89-6	NE	NE	NE	NE	NE	2.6	7.1	2.9 J	0.028 J	100%	4.2	2.6	7.1	0.47	0.19	0.57 J	
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00018 J	0.00054 J	0.00036 J	< 0.0001	100%	0.0004	0.0002	0.0005	0.00027 J	0.00026 J	< 0.0001	<
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.42	0.6	0.27 J	0.4	100%	0.430	0.2700	0.600	0.017	0.013	0.027	
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< #######	< *0.000099* U	NP	0%	0.00005	0.00002	0.00010	*0.000100* J B	< #######	< *2E-05*	
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0026 J	0.0051 J	0.0025 J+	0.0042 J	100%	0.0034	0.0025	0.0051	0.0023 J	0.018 J	0.001 J	
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0042 J	0.0013 J	0.00073 J	< 0.00035	100%	0.002	0.0007	0.004	0.0028 J	0.0024 J	< 0.00035	
Potassium	7440-09-7	NE	NE	NE	NE	NE	21	34	5.2 J	8.4 J-	100%	20.1	5.2	34.0	23	22	19	
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0029 J	0.0024 J	< 0.0004 UJ	< 0.0004	67%	0.002	0.0004	0.003	*0.014* B	*0.02* B	< 0.0012 U	
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< *0.00015*	< *0.00015*	< 0.0001 UJ	< 0.0001	0%				< *0.00015*	< *0.00015*	< 0.0001	<
Sodium	7440-23-5	NE	NE	NE	NE	NE	76	210	16 J	28 J-	100%	101	16	210	850	890	980	
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.00021 J	0.00061 J	< 0.00019 UJ	< 0.0001	67%	0.0003	0.0002	0.0006	< 0.00015	**0.0025** J A(MCL)	0.00019 J	<
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00088 J	0.0012 J	< 0.00015 UJ	< 0.00015	67%	0.0007	0.0002	0.0012	0.00078 J	0.0058 J	< 0.00015	<
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	< 0.00050	0.00150 J	0.0055 J	< 0.0014	67%	0.003	0.0005	0.006	0.00610 J	0.00460 J	0.0025 J	
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.011 J	0.0099 J	< 0.0039 UJ	< 0.0027	67%	0.008	0.0039	0.011	0.011 J	0.0033 J	< 0.0027	<

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
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NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
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B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-806D Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)											
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00005	67%	0.0005	0.0003	0.0008
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0034** [J] A(I)	67%	0.010	0.0008	0.017
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.18 [J+]	100%	0.18	0.17	0.19
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	0.0001	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0015 [J]	100%	0.004	0.0016	0.008
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0018* [J] B	67%	0.0076	0.0004	0.013
Iron	7439-89-6	NE	NE	NE	NE	NE	0.100 [J]	100%	0.4	0.2	0.6
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.0001	67%	0.0002	0.0001	0.0003
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.026	100%	0.019	0.0130	0.027
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	NP	33%	0.00005	0.00002	0.00010
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.00062 [J]	100%	0.0071	0.0010	0.0180
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.00039 [J]	67%	0.002	0.0004	0.003
Potassium	7440-09-7	NE	NE	NE	NE	NE	19.0	100%	21	19	23
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0015 [J]	67%	0.012	0.0012	0.020
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	510	100%	907	850	980
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0001	67%	0.0009	0.0002	0.0025
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00015	67%	0.0022	0.0002	0.0058
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.0027 [J]	100%	0.004	0.0025	0.006
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0027	67%	0.006	0.0027	0.011

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
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NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
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A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-806S Total Metals 10/31/2012	MW-806S Total Metals 7/16/2013	MW-806S Total Metals 9/14/2017	MW-806S Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-807D Total Metals 11/1/2012	MW-807D Total Metals 7/18/2013	
Metals (mg/L)																	
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00093 J	< 0.0002	< 0.00099 U	< 0.0002	33%	0.0007	0.0002	0.0010	0.0003 J	0.00049 J	
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.027** A(MCL,I,DCL)	**0.025** A(MCL,I,DCL)	**0.016** A(MCL,I,DCL)	**0.0076** J A(I)	100%	0.023	0.0160	0.027	***0.15*** A(MCL,I,DCL),B	**0.14** A(MCL,I,DCL)	
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	<
Boron	7440-42-8	NE	NE	NE	NE	NE	0.29	0.34	0.13	0.12 J+	100%	0.25	0.13	0.34	0.25	0.19	
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%				< 0.00015	< 0.00015	<
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0015 J	< 0.0003	< 0.001	< 0.004	33%	0.001	0.0003	0.002	0.0096	0.0059	
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	**0.14** J- A(MCL)	NP	100%	0.140	0.140	0.140	NP	NP	<
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	< 0.00015	0.00075 J	< 0.0004	< 0.0016	33%	0.0004	0.0002	0.001	*0.041* B	*0.016* B	
Iron	7439-89-6	NE	NE	NE	NE	NE	5.7	7.9	2.3	0.012 J	100%	5.3	2.3	7.9	2.3	1.7	
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	< 0.0001	< 0.0001	< 0.0001	< 0.0004	0%				0.00052 J	0.0006 J	
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.78	0.74	0.56	0.55	100%	0.693	0.5600	0.780	0.0098	0.011	
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< #######	< 2E-05	NP	0%				< #######	< ####### B	<
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0077 J	0.003 J	0.01	0.0067 J	100%	0.0069	0.0030	0.0100	0.056	0.06	
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0029 J	0.00076 J	0.001 J	< 0.0014	100%	0.002	0.0008	0.003	0.013	0.013	
Potassium	7440-09-7	NE	NE	NE	NE	NE	29	19	35	33.0	100%	28	19	35	9.1	10	
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0038 J	*0.04* B	< 0.001 U	< 0.0016	67%	0.015	0.0010	0.040	*0.044* B	***0.072*** A(MCL),B	
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	<
Sodium	7440-23-5	NE	NE	NE	NE	NE	30	57	61	63	100%	49	30	61	2200	1900	
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0007 J	0.00018 J	**0.002** A(MCL)	< 0.0004	100%	0.0010	0.0002	0.0020	< 0.00015	**0.003** J A(MCL)	
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0027 J	< 0.0004	0.0002 J	< 0.0006	67%	0.0011	0.0002	0.0027	0.0016 J	0.0075 J	
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00130 J	0.00580 J	0.0018 J	< 0.0054	100%	0.003	0.0013	0.006	*0.066* B	*0.04900* B	
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0027 J	0.0061 J	< 0.0027	< 0.011	67%	0.004	0.0027	0.006	0.0054 J	0.0051 J	

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
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NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
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[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-807D Total Metals 9/13/2017	MW-807D Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)												
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.002 J	< 0.0002	100%	0.0009	0.0003	0.0020
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.12** A(MCL,I,DCL)	**0.088** A(MCL,I,DCL)	100%	0.137	0.1200	0.150
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	0.00015	< 0.0006	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.11	0.11 J+	100%	0.18	0.11	0.25
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	0.0001	< *0.0004*	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0039 J	0.005 J	100%	0.006	0.0039	0.010
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	**0.001**	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0073* B	*0.0066* J B	100%	0.0214	0.0073	0.041
Iron	7439-89-6	NE	NE	NE	NE	NE	0.99 J	0.800 J	100%	1.7	1.0	2.3
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00084 J	0.00056 J	100%	0.00065	0.00052	0.00084
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.011	< 0.0083 U	100%	0.011	0.0098	0.011
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	*0.00014* U	NP	0%	0.00006	0.00002	0.00014
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.026	0.028 J+	100%	0.0473	0.0260	0.0600
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.01	0.0074 J	100%	0.012	0.0100	0.013
Potassium	7440-09-7	NE	NE	NE	NE	NE	11	10.0	100%	10	9	11
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	*0.045* J+ B	< 0.0016	100%	0.054	0.0440	0.072
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	0.0001	< *0.0004*	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	1700	1400	100%	1933	1700	2200
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0016	< 0.0001	67%	0.0016	0.0002	0.0030
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0024 J	< 0.00015	100%	0.0038	0.0016	0.0075
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	*0.045* B	*0.04* B	100%	0.053	0.0450	0.066
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0069 J	0.0045 J	100%	0.006	0.0051	0.007

Notes:

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[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
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[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-807S Total Metals 11/1/2012	MW-807S Total Metals 7/16/2013	MW-807S-Dup Total Metals 7/16/2013	MW-807S Total Metals 9/13/2017	MW-807S Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-808D Total Metals 11/2/2012	MW-808D Total Metals 7/17/2013	MW-808D Total Metals 9/14/2017	
Metals (mg/L)																			
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0011 J	0.00024 J	0.0013 J	< 0.00059 U	< 0.00007 U	75%	0.0008	0.0002	0.0013	0.00057 J	0.00072 J	< 0.00058 U	
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0024** J A(I)	**0.0046** J A(I)	**0.0034** J A(I)	< 0.0008	< 0.0008	75%	0.0028	0.0008	0.0046	**0.094** A(MCL,I,DCL)	**0.081** A(MCL,I,DCL)	**0.11** A(MCL,I,DCL)	
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	< 0.00015 UJ	0%				< 0.00015	< 0.00015	< 0.00015	<
Boron	7440-42-8	NE	NE	NE	NE	NE	0.22	0.13	0.11	0.31	0.31 J+	100%	0.19	0.11	0.31	0.4	0.34	0.37	
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				0.00021 J B	0.00042 J B	< 0.0001	<
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0047	0.066 B	0.065 B	0.0079 J+	0.0042 J	100%	0.0359	0.0047	0.0660	0.024	0.022	0.019	
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	NP	< 0.001	NP	0%				NP	NP	0.068	
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.0012 J	0.0058 J B	0.0056 J B	0.0021 J B	0.0013 J	100%	0.0037	0.0012	0.0058	0.027 B	0.016 B	0.0029 J B	
Iron	7439-89-6	NE	NE	NE	NE	NE	0.96	0.87	0.85	1.5	1.100	100%	1.0	0.9	1.5	3.2	2	1.7	
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00035 J	0.0001 J	< 0.0001	0.00014 J	0.00032 J	75%	0.0002	0.0001	0.0004	0.00036 J	0.00022 J	0.00017 J	
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.11	0.076	0.074	0.1	0.085	100%	0.0900	0.0740	0.1100	0.047	0.031	0.044	
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	0.000072 J B	0.000079 J B	0.00021 J+ B	NP	75%	0.00010	0.00002	0.00021	< 0.000020	< 0.000030	< 2E-05	
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0074 J	0.013 J	0.011 J	< 0.0026 U	< 0.0009 U	75%	0.009	0.003	0.013	0.0087 J	0.0061 J	0.0045 J	
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0042 J	0.0018 J	0.0018 J	0.0023 J	0.0022 J	100%	0.0025	0.0018	0.0042	0.018	0.015	0.01	
Potassium	7440-09-7	NE	NE	NE	NE	NE	11	12	11	11	10.0	100%	11.3	11.0	12.0	33	30	25	
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0049 J	0.0063 B	0.005 J	0.0011 J	< 0.0004	100%	0.0043	0.0011	0.0063	0.023 B	0.018 B	0.0051 J+ B	
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001 UJ	0%				< 0.00015	< 0.00015	< 0.0001	<
Sodium	7440-23-5	NE	NE	NE	NE	NE	29	31	29	76	79	100%	41	29	76	250	1300	1300	
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.00086 J	0.00046 J	0.00019 J	< 0.002 U	< 0.0001 B	75%	0.0009	0.0002	0.0020	0.00043 J	< 0.000150	< 0.0001	<
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0035 J	0.0014 J	0.00068 J	< 0.00015	< 0.00015	75%	0.0014	0.0002	0.0035	0.0018 J	< 0.000400	< 0.00015	<
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.02500 B	0.02400 B	0.02300 B	0.003 J	0.0069	100%	0.0188	0.0030	0.0250	0.096 B	0.094 B	0.094 B	
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0036 J	0.0026 J	0.0024 J	0.0068 J	0.0059 J	100%	0.0039	0.0024	0.0068	0.0087 J	0.0093 J	0.018 J	

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
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B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-808D Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)											
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00033 [J]	67%	0.0006	0.0006	0.0007
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.1** A(MCL,I,DCL)	100%	0.095	0.0810	0.110
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.29 [J+]	100%	0.37	0.34	0.40
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	0.0001	67%	0.00024	0.00010	0.00042
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.014	100%	0.022	0.0190	0.024
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	100%	0.068	0.068	0.068
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.00043 [J]	100%	0.0153	0.0029	0.027
Iron	7439-89-6	NE	NE	NE	NE	NE	1.300	100%	2.3	1.7	3.2
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.0001	100%	0.00025	0.00017	0.00036
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.033	100%	0.041	0.0310	0.047
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	NP	0%			
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0037 [J]	100%	0.0064	0.0045	0.0087
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0076	100%	0.014	0.0100	0.018
Potassium	7440-09-7	NE	NE	NE	NE	NE	19.0	100%	29	25	33
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0037 [J]	100%	0.015	0.0051	0.023
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	960	100%	950	250	1300
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0001	33%	0.0002	0.0001	0.0004
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00015	33%	0.0008	0.0002	0.0018
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	*0.072* B	100%	0.095	0.0940	0.096
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0027	100%	0.012	0.0087	0.018

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
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[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-808S Total Metals 11/2012	MW-808S Total Metals 7/17/2013	MW-808S Total Metals 9/14/2017	MW-808S Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-809D Total Metals 11/2012	M Tot 7/
Metals (mg/L)																
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0037 J	0.0013 J	< 0.0021 U	0.00097 J	67%	0.0024	0.0013	0.0037	0.0028 J	0.0018 J
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.035** A(MCL,I,DCL)	**0.013** A(MCL,I,DCL)	**0.017** A(MCL,I,DCL)	**0.014** J A(MCL,I,DCL)	100%	0.022	0.0130	0.035	***0.19*** A(MCL,I,DCL),B	***0.2***
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.37	0.22	0.24	0.25 J+	100%	0.28	0.22	0.37	0.45	0.44
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%				< 0.00015	0.00021 J
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.005	0.0048	0.0035 J	< 0.004	100%	0.004	0.0035	0.005	0.017	0.015
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	< **0.001**	NP	0%				NP	NP
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.0023 J B	0.0085 J B	0.0068 B	< 0.0016	100%	0.0059	0.0023	0.009	0.028 B	0.11
Iron	7439-89-6	NE	NE	NE	NE	NE	0.33	1.1	0.9 J	0.160 J	100%	0.78	0.33	1.10	3.6	3.4
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00049 J	0.00071 J	0.00036 J	< 0.0004	100%	0.00052	0.00036	0.00071	0.0003 J	0.0016 J
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.32 B	0.29	0.34	0.26	100%	0.317	0.2900	0.340	0.0084	0.011
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	0.000056 J B	0.000025 J B	NP	67%	0.000034	0.000020	0.000056	0.000044 J B	< 0.000030 B
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.013 J	0.0046 J	< 0.0045 U	0.004 J	67%	0.0074	0.0045	0.0130	0.0038 J	0.0098 J
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.016	0.0084 J	0.0072	< 0.0014	100%	0.011	0.0072	0.016	0.015	0.017
Potassium	7440-09-7	NE	NE	NE	NE	NE	6.1	4.6	7.9	7.9	100%	6.2	4.6	7.9	38	38
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0068 B	0.0042 J	0.02 J+ B	< 0.0016	100%	0.010	0.0042	0.020	0.019 B	0.027
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015
Sodium	7440-23-5	NE	NE	NE	NE	NE	71	27	97	110	100%	65	27	97	1100	1100
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.00024 J	< 0.00015	< 0.0001	< 0.0004	33%	0.0002	0.0001	0.0002	< 0.00015	0.0012 J
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0063 J	0.0024 J	0.0022 J	0.002 J	100%	0.0036	0.0022	0.0063	0.00052 J	0.0039 J
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00330 J	0.00480 J	0.0036 J	< 0.0054	100%	0.004	0.0033	0.005	0.05500 B	0.04400
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0039 J	0.01 J	0.0075 J	< 0.011	100%	0.007	0.0039	0.010	0.0052 J	0.03

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
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[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	W-809D al Metals 18/2013	MW-809D Total Metals 9/14/2017	MW-809D Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)													
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08		< 0.0041 U	0.0043 J	67%	0.0029	0.0018	0.0041
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	A(MCL,I,DCL),B	***0.24*** A(MCL,I,DCL),B	***0.27*** A(MCL,I,DCL),B	100%	0.210	0.1900	0.240
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036		< 0.00015	< 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE		0.39	0.4	100%	0.43	0.39	0.45
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	B	< 0.0001	< 0.0001	33%	0.00015	0.00010	0.00021
Chromium	7440-47-3	NE	0.1	150	150	0.042		0.015	0.014	100%	0.016	0.0150	0.017
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE		< **0.001**	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	B	*0.025* B	< 0.0004	100%	0.0543	0.0250	0.110
Iron	7439-89-6	NE	NE	NE	NE	NE		5.3	5.100	100%	4.1	3.4	5.3
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	B	0.0004 J	< 0.0001	100%	0.00077	0.00030	0.00160
Manganese	7439-96-5	NE	NE	NE	NE	NE		0.008	0.0063	100%	0.009	0.0080	0.011
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013		< *2E-05*	NP	33%	0.000031	0.000020	0.000044
Molybdenum	7439-98-7	NE	NE	NE	NE	NE		0.0048 J	0.0046 J	100%	0.0061	0.0038	0.0098
Nickel	7440-2-0	NE	NE	2	2	0.0289		0.021	0.021	100%	0.018	0.0150	0.021
Potassium	7440-09-7	NE	NE	NE	NE	NE		38	38.0	100%	38	38	38
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	B	*0.006* B	*0.0059* B	100%	0.017	0.0060	0.027
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012		< 0.0001	< 0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE		22 J+	1200	100%	741	22	1100
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01		< 0.0001	< 0.0001	33%	0.0005	0.0001	0.0012
Tin	7440-31-5	NE	NE	NE	NE	0.18		< 0.00015	< 0.00015	67%	0.0015	0.0002	0.0039
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	B	*0.048* B	*0.048* B	100%	0.049	0.0440	0.055
Zinc	7440-66-6	NE	NE	31	31	0.0657		0.016 J	0.0027 J	100%	0.017	0.0052	0.030

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-809M Total Metals 11/2012	MW-809M Total Metals 7/18/2013	MW-809M-Dup Total Metals 7/18/2013	MW-809M Total Metals 9/14/2017	MW-809M Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-809S Total Metals 11/2012	MW-809S Total Metals 7/15/2013
Metals (mg/L)																	
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.0002	< 0.0002	< 0.0002	< 0.00022 U	< 0.0002	0%	0.0002	0.0002	0.0002	< 0.0002	0.0011 J
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0095** J A(I)	**0.027** A(MCL,I,DCL)	**0.027** A(MCL,I,DCL)	**0.022** A(MCL,I,DCL)	**0.023** A(MCL,I,DCL)	100%	0.0214	0.0095	0.0270	< 0.00015	**0.0036** J A(I)
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.37	0.3	0.3	0.32	0.29	100%	0.32	0.30	0.37	0.33	0.32
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%				< 0.00015	< 0.00015
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0025 J	0.0022 J	0.002 J	0.0029 J	< 0.004	100%	0.0024	0.0020	0.0029	0.0023 J	0.0042
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	NP	< 0.001	NP	0%				NP	NP
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.00072 J	0.0023 J B	0.0018 J B	0.00042 J	< 0.0016	100%	0.0013	0.0004	0.0023	0.00024 J	0.0024 J B
Iron	7439-89-6	NE	NE	NE	NE	NE	0.86	0.49	0.46	0.2 J	0.140 J	100%	0.5	0.2	0.9	0.81	1.1
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	< 0.0001	0.00021 J	< 0.0001	< 0.0001	< 0.0004	25%	0.0001	0.0001	0.0002	< 0.0001	0.00028 J
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.074 B	0.016	0.016	0.01	0.0086	100%	0.0290	0.0100	0.0740	0.2 B	1.1
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< ####### B	< ####### B	< 2E-05	NP	0%				< #######	< #######
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0006 J	< 0.0003	< 0.0003	< 0.0001 U	0.0019 J	25%	0.000	0.000	0.001	0.00057 J	0.021
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0037 J	0.0036 J	0.0036 J	0.0019 J	< 0.0014	100%	0.0032	0.0019	0.0037	0.0051 J	0.0043 J
Potassium	7440-09-7	NE	NE	NE	NE	NE	2.1	2.1	2.1	2	1.7	100%	2.1	2.0	2.1	2.6	10
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0042 J	0.0057 B	0.0052 B	< 0.0037 U	< 0.0016	75%	0.0047	0.0037	0.0057	0.0018 J	0.012 B
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001 UJ	0%				< 0.00015	< 0.00015
Sodium	7440-23-5	NE	NE	NE	NE	NE	93	190	210	100	91	100%	148	93	210	47	64
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%				< 0.00015	**0.0024** J A(MCL)
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.0004	< 0.0004	< 0.0004	< 0.00015	< 0.0006	0%				< 0.0004	0.0066 J
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00820	0.01300 B	0.01200 B	< 0.0014	< 0.0054	75%	0.0087	0.0014	0.0130	0.00520 J	0.00430 J
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.00083 J	0.0097 J	0.029	0.0097 J	< 0.011	100%	0.0123	0.0008	0.0290	0.0015 J	0.013 J

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
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[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-809S Total Metals 9/14/2017	MW-809S Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)												
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00022 U	≤ 0.0002	33%	0.0005	0.0002	0.0011
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.0008	≤ **0.0032**	33%	0.002	0.0002	0.004
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	0.00015	≤ 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.28	0.28	100%	0.31	0.28	0.33
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	0.0001	≤ *0.0004*	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.002 J	≤ 0.004	100%	0.003	0.0020	0.004
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	**0.001**	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0018* J B	≤ *0.0016*	100%	0.0015	0.0002	0.002
Iron	7439-89-6	NE	NE	NE	NE	NE	1.6	0.090 J	100%	1.2	0.8	1.6
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.0001	≤ 0.0004	33%	0.00016	0.00010	0.00028
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.24	0.23	100%	0.513	0.2000	1.100
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	*2E-05*	NP	0%			
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.00013 U	0.0021 J	67%	0.0072	0.0001	0.0210
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0018 J	≤ 0.0014	100%	0.004	0.0018	0.005
Potassium	7440-09-7	NE	NE	NE	NE	NE	5.6	5.2	100%	6	3	10
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0037 U	≤ 0.0016	67%	0.006	0.0018	0.012
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	0.0001	≤ 0.0001 UJ	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	84	74	100%	65	47	84
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0001	0.00049 J	33%	0.0009	0.0001	0.0024
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00015	≤ 0.0006	33%	0.0024	0.0002	0.0066
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.0014	≤ 0.0054	67%	0.004	0.0014	0.005
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0033 J	≤ 0.011	100%	0.006	0.0015	0.013

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
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A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-810D Total Metals 10/31/2012	MW-810D Total Metals 7/16/2013	MW-810D Total Metals 9/14/2017	MW-810D Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-810S Total Metals 10/31/2012	MW-810S Total Metals 7/16/2013	MW-810S Total Metals 9/14/2017	MW-810S DUP Total Metals 9/14/2017	MW-810S Dissolved Metals 9/14/2017	MW-810S DUP Dissolved Metals 9/14/2017	% Detect
Metals (mg/L)																					
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0016 J	0.00047 J	< 0.00005	< 0.0002	67%	0.0007	0.0001	0.0016	0.00082 J	0.00083 J	< 0.00052 U	< 0.00052 U	0.00037 J	0.00048 J	50%
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.0015 J	0.0013 J	< 0.0008	< 0.0032	67%	0.001	0.0008	0.002	**0.0069** J A(I)	**0.0028** J A(I)	**0.0035** J A(I)	**0.0029** J A(I)	**0.004** J A(I)	**0.0037** J A(I)	100%
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%
Boron	7440-42-8	NE	NE	NE	NE	NE	0.39	0.24	0.2	0.2 J+	100%	0.28	0.20	0.39	0.25	0.19	0.14	0.14	0.14 J+	0.15 J+	100%
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0%
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0051	0.0031	0.0018 J	< 0.004	100%	0.003	0.0018	0.005	0.0016 J	0.002 J	< 0.001	< 0.001	< 0.001	< 0.001	50%
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	< 0.001	NP	0%				NP	NP	< 0.001	< 0.001	NP	NP	0%
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.014 B	0.029 B	< 0.0004	< 0.0016	67%	0.0145	0.0004	0.029	0.0025 J B	0.0026 J B	0.00044 J	< 0.0004	0.00044 J	0.00052 J	75%
Iron	7439-89-6	NE	NE	NE	NE	NE	3.2	1.1	0.7 J	0.230 J	100%	1.7	0.7	3.2	0.13	< 0.0015	0.53 J	0.55 J	0.010 J	< 0.009	75%
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00049 J	< 0.0001	< 0.0001	< 0.0004	33%	0.00023	0.00010	0.00049	0.00013 J	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	25%
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.056	0.049	0.019	0.017	100%	0.041	0.0190	0.056	0.067	0.052	0.065	0.067	0.064	0.067	100%
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< #######	< 2E-05	NP	0%				< #######	< #######	< 2E-05	< 2E-05	NP	NP	0%
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0088 J	0.0015 J	0.0035 J	0.0011 J	100%	0.0046	0.0015	0.0088	0.0082 J	0.012 J	0.013	0.012	0.013	0.013	100%
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0047 J	0.002 J	< 0.00035	< 0.0014	67%	0.002	0.0004	0.005	0.004 J	0.002 J	0.0016 J	0.0017 J	0.0016 J	0.0017 J	100%
Potassium	7440-09-7	NE	NE	NE	NE	NE	33	31	22	21.0	100%	29	22	33	58	22	26	22	27	23	100%
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0097 B	0.0044 J	0.00086 J	< 0.0016	100%	0.005	0.0009	0.010	0.011 B	0.0086 B	< 0.00099 U	< 0.00084 U	0.00096 J	0.0011 J	50%
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001 UJ	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0%
Sodium	7440-23-5	NE	NE	NE	NE	NE	940	820	560	550	100%	773	560	940	68	97	290	250	310	280	100%
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0012 J	< 0.00015	< 0.0001	< 0.0004	33%	0.0005	0.0001	0.0012	< 0.00015	0.00017 J	< 0.0001	< 0.0001	< 0.0001	< 0.0001	25%
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0051 J	0.00045 J	< 0.00015	< 0.0006	67%	0.0019	0.0002	0.0051	0.00052 J	< 0.0004	< 0.00015	< 0.00015	< 0.00015	0.00039 J	25%
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00490 J	0.00430 J	0.0031 J	< 0.0054	100%	0.004	0.0031	0.005	0.01100	0.00360 J	< 0.0014	0.0014 J	< 0.0014	< 0.0014	75%
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0035 J	0.0045 J	< 0.0027	< 0.011	67%	0.004	0.0027	0.005	0.0027 J	0.025	< 0.0027	< 0.0027	< 0.0027	< 0.0027	50%

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
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NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
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A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Average	Minimum Detected	Maximum Detected	MW-811S Total Metals 10/29/2012	MW-811S Total Metals 7/16/2013	MW-811S Total Metals 9/13/2017	MW-811S Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)																	
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0007	0.0005	0.0008	0.00066 J	0.00025 J	< 0.0008 U	< 0.0002	67%	0.0006	0.0003	0.0008
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.0040	0.0028	0.0069	**0.0033** J A(I)	0.0005 J	< 0.0008	**0.0033** J A(I)	67%	0.002	0.0005	0.003
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036				< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.18	0.14	0.25	0.069	0.012 J	< 0.0032	0.027 J+	67%	0.028	0.003	0.069
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015				< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.001	0.001	0.002	0.0014 J	0.018	0.0073	0.006 J	100%	0.009	0.0014	0.018
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE				NP	NP	**0.13** A(MCL)	NP	100%	0.130	0.130	0.130
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.0015	0.0004	0.0026	*0.0091* J B	*0.02* B	*0.014* B	*0.012* J B	100%	0.0144	0.0091	0.020
Iron	7439-89-6	NE	NE	NE	NE	NE	0.30	0.0015	0.55	0.037 J	< 0.0015	0.78 J	< 0.009	67%	0.273	0.002	0.78
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00011	0.00010	0.00013	0.00085 J	*0.0094* B	***0.024*** A(MCL),B	***0.022*** A(MCL),B	100%	0.01142	0.00085	0.024
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.063	0.052	0.067	0.0012 J	0.00069 J	0.0015 J	< 0.00035	100%	0.0011	0.0007	0.0015
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013				< #######	< #######	< 2E-05	NP	0%			
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0113	0.0082	0.0130	0.012 J	0.0043 J	< 0.0045 U	0.007 J	67%	0.0069	0.0043	0.0120
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0023	0.0016	0.0040	0.023	*0.033* B	0.019	0.01 J	100%	0.025	0.0190	0.033
Potassium	7440-09-7	NE	NE	NE	NE	NE	32	22	58	59 E	31	73	71.0	100%	54	31	73
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0054	0.0008	0.011	0.0033 J	*0.0058* B	*0.0077* J+ B	< 0.0016	100%	0.006	0.0033	0.008
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012				< 0.00015	< 0.00015	< 0.0001	< 0.0001 UJ	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	176	68	290	600	830	560	480	100%	663	560	830
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0001	0.0001	0.0002	0.00028 J	< 0.00015	< 0.0001	< 0.0004	33%	0.0002	0.0001	0.0003
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0003	0.0002	0.0005	< 0.0004	< 0.0004	< 0.00015	< 0.0006	0%			
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.0044	0.0014	0.0110	0.00350 J	0.00064 J	< 0.0014	< 0.0054	67%	0.002	0.0006	0.004
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0083	0.0027	0.0250	0.0029 J	0.025	0.035	0.035 J	100%	0.021	0.0029	0.035

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
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[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
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[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-812S Total Metals 10/31/2012	MW-812S Total Metals 7/16/2013	MW-812S Total Metals 9/13/2017	MW-812S Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-813S Total Metals 10/31/2012	MW-813S Total Metals 7/15/2013	MW-813S Total Metals 9/13/2017	MW-813 Dissolve Metals 9/13/201
Metals (mg/L)																		
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.0002	< 0.0002	< 0.00047 U	< 0.00005	0%	0.0003	0.0002	0.0005	< 0.0002	0.00037 J	< 0.001 U	0.00017
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.027** A(MCL,I,DCL)	**0.03** A(MCL,I,DCL)	**0.019** J A(MCL,I,DCL)	**0.016** A(MCL,I,DCL)	100%	0.025	0.0190	0.030	< 0.00015	0.0018 J	< 0.0008	< 0.0008
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015 UJ	< 0.00015 UJ	0%				< 0.00015	< 0.00015	< 0.00015 UJ	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.19 J	0.17	0.18	0.17 J+	100%	0.180	0.170	0.190	0.23	0.18	0.12 J+	0.11
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0016 J	< 0.0003	< 0.0027 U	< 0.001	33%	0.002	0.0003	0.003	0.0023 J	0.00099 J	< 0.003 U	< 0.001
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	< 0.001	NP	0%				NP	NP	< 0.001	NP
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.001 J	0.0016 J B	0.00092 J	< 0.0004	100%	0.0012	0.0009	0.002	0.002 J B	0.0018 J B	0.002 J B	< 0.0004
Iron	7439-89-6	NE	NE	NE	NE	NE	1.7	1.8	1.1	0.017 J	100%	1.533	1.100	1.80	0.35	0.15	1.1	0.940
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0%				0.00012 J	< 0.0001	0.0004 J	< 0.0001
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.17	0.18	0.11	0.1	100%	0.1533	0.1100	0.1800	0.17	0.13	0.043	0.037
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< #######	< 0.00013 U	NP	0%	0.00006	0.00002	0.00013	< #######	< #######	< 0.00013 U	NP
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0069 J	0.0096 J	< 0.0014 U	0.00058 J	67%	0.0060	0.0014	0.0096	0.0028 J	0.0058 J	0.016	0.014
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0049 J	0.0038 J	< 0.00035	< 0.00035	67%	0.003	0.0004	0.005	0.0031 J	0.00078 J	0.001 J	0.00043
Potassium	7440-09-7	NE	NE	NE	NE	NE	39	23	15	14.0	100%	26	15	39	42	33	17	15.0
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0025 J	0.0022 J	0.00055 J	< 0.0004	100%	0.002	0.0006	0.003	0.0041 J	0.0042 J	0.0013 J	< 0.0004
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001
Sodium	7440-23-5	NE	NE	NE	NE	NE	100	150	51	51	100%	100	51	150	160	140	59	62
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.00015	0.00026 J	< 0.00098 U	< 0.0001	33%	0.0005	0.0002	0.0010	< 0.00015	0.00031 J	< 0.002 U	0.0001
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.0004	0.00064 J	< 0.00015	< 0.00015	33%	0.00040	0.00015	0.00064	< 0.0004	0.001 J	0.0011 J	< 0.00015
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	< 0.00050	0.00360 J	0.0036 J	< 0.0014	67%	0.003	0.0005	0.004	< 0.00050	0.00480 J	0.0057 J	0.0027
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0036 J	0.0085 J	< 0.0027	< 0.0027	67%	0.005	0.0027	0.009	0.0034 J	0.0053 J	< 0.0027	< 0.0027

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	S d	% Detect	Average	Minimum Detected	Maximum Detected	MW-814S Total Metals 10/29/2012	MW-814S Total Metals 7/16/2013	MW-814S Total Metals 9/13/2017	MW-814S Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)																			
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	J	33%	0.0005	0.0002	0.0010	0.00047 J	< 0.0002	< 0.0013 U	< 0.00031 U	33%	0.0007	0.0002	0.0013
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148		33%	0.001	0.0002	0.002	**0.0072** J A(I)	0.00047 J	**0.008** J A(I)	**0.0084** A(I)	100%	0.005	0.0005	0.008
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036		0%				< 0.00015	< 0.00015	< 0.00015 UJ	< 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	J+	100%	0.177	0.120	0.230	0.21	0.055	0.18	0.15 J+	100%	0.148	0.055	0.210
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015		0%				< 0.00015	< 0.0002	< 0.0001	< 0.0001	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042		67%	0.002	0.0010	0.003	0.0042	0.023	0.0064 J+	0.003 J	100%	0.011	0.0042	0.023
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE		0%				NP	NP	< 0.001	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158		100%	0.0019	0.0018	0.002	0.00068 J	0.0026 J B	0.0017 J B	0.00083 J	100%	0.0017	0.0007	0.003
Iron	7439-89-6	NE	NE	NE	NE	NE		100%	0.53	0.15	1.10	0.095 J	< 0.0015	< 0.086 U	0.063 J	33%	0.06	0.00	0.10
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117		67%	0.00021	0.00010	0.00040	< 0.0001	0.00014 J	0.00033 J	< 0.0001	67%	0.00019	0.00010	0.00033
Manganese	7439-96-5	NE	NE	NE	NE	NE		100%	0.1143	0.0430	0.1700	0.041	0.00088 J	0.016	0.0091 J+	100%	0.0193	0.0009	0.0410
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013		0%	0.00006	0.00002	0.00013	< #######	< #######	< 0.00013 U	NP	0%	0.00006	0.00002	0.00013
Molybdenum	7439-98-7	NE	NE	NE	NE	NE		100%	0.0082	0.0028	0.0160	0.009 J	0.0083 J	0.012	0.011 J+	100%	0.0098	0.0083	0.0120
Nickel	7440-2-0	NE	NE	2	2	0.0289	J	100%	0.002	0.0008	0.003	0.0011 J	0.0011 J	0.0014 J	0.00091 J	100%	0.001	0.0011	0.001
Potassium	7440-09-7	NE	NE	NE	NE	NE		100%	31	17	42	33	39	32	29.0	100%	35	32	39
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005		100%	0.003	0.0013	0.004	0.0021 J	0.0016 J	0.003 J	< 0.0004	100%	0.002	0.0016	0.003
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012		0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE		100%	120	59	160	130	130	250	190	100%	170	130	250
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	J	33%	0.0008	0.0002	0.0020	0.00039 J	0.00038 J	< 0.0053 U	< 0.0001 B	67%	0.0020	0.0004	0.0053
Tin	7440-31-5	NE	NE	NE	NE	0.18		67%	0.00083	0.00040	0.00110	0.00054 J	< 0.0004	0.0016 J	< 0.00015	67%	0.00085	0.00040	0.00160
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	J	67%	0.004	0.0005	0.006	0.01400 B	0.03000 B	0.029 B	0.036 B	100%	0.024	0.0140	0.030
Zinc	7440-66-6	NE	NE	31	31	0.0657		67%	0.004	0.0027	0.005	< 0.0005	0.005 J	< 0.0027	< 0.0027	33%	0.003	0.0005	0.005

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-815D Total Metals 10/29/2012	MW-815D Total Metals 7/15/2013	MW-815D Total Metals 9/11/2017	MW-815D Dissolved Metals 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-815S Total Metals 10/29/2012	MW-815S Total Metals 7/17/2013	MW-815S Total Metals 9/11/2017	MW-815S Dissolved Metals 9/11/2017	% Detect	Average	Minimum Detected
Metals (mg/L)																					
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00084 J	0.00043 J	0.00031 J	< 0.00005	100%	0.0005	0.0003	0.0008	0.0048 J	< 0.0002	0.00026 J	< 0.00005	67%	0.0018	0.0002
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0041** J A(I)	**0.0043** J A(I)	< 0.0008	< 0.0008	67%	0.003	0.0008	0.004	**0.015** A(MCL,I,DCL)	0.0016 J	**0.0019** J A(I)	0.0016 J	100%	0.006	0.0016
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%		
Boron	7440-42-8	NE	NE	NE	NE	NE	0.34	0.36	0.43	0.38	100%	0.377	0.340	0.430	0.35	0.28	0.26	0.23	100%	0.297	0.260
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%		
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0022 J	0.0014 J	< 0.0019 U	< 0.001	67%	0.002	0.0014	0.002	0.0017 J	0.0012 J	< 0.0018 U	< 0.001	67%	0.002	0.0012
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	< **0.001**	NP	0%				NP	NP	< **0.001**	NP	0%		
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0023* J B	*0.0036* J B	*0.0061* B	*0.0016* J B	100%	0.0040	0.0023	0.006	< 0.00015	0.0013 J	*0.0024* B	< 0.0004	67%	0.0013	0.0002
Iron	7439-89-6	NE	NE	NE	NE	NE	0.81	0.57	0.81	0.220 J	100%	0.73	0.57	0.81	2.9	1.6	1.8	0.038 J	100%	2.1	1.6
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00026 J	0.00023 J	0.00032 J	< 0.0001	100%	0.00027	0.00023	0.00032	0.0002 J	< 0.0001	< 0.0001	< 0.0001	33%	0.00013	0.00010
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.026	0.024	0.023	0.019 J+	100%	0.0243	0.0230	0.0260	0.25	0.21	0.28	0.28	100%	0.2467	0.2100
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< #######	< *0.000036* U	NP	0%	0.00003	0.00002	0.00004	< #######	< #######	< *0.000032* U	NP	0%	0.00003	0.00002
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0043 J	0.0063 J	0.0014 J	0.00063 J	100%	0.0040	0.0014	0.0063	0.034	0.006 J	0.011	0.01	100%	0.0170	0.0060
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0012 J	0.00058 J	0.0024 J	0.00067 J	100%	0.001	0.0006	0.002	0.001 J	0.0015 J	0.0043 J	0.00054 J	100%	0.002	0.0010
Potassium	7440-09-7	NE	NE	NE	NE	NE	19	17	15	14.0	100%	17	15	19	22	43	18	18.0	100%	28	18
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	*0.0089* B	*0.012* B	*0.0099* B	< 0.0004	100%	0.010	0.0089	0.012	*0.012* B	0.003 J	< 0.0004	< 0.0004	67%	0.005	0.0004
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< *0.00015*	< *0.00015*	< 0.0001	< 0.0001	0%				< *0.00015*	< *0.00015*	< 0.0001	< 0.0001	0%		
Sodium	7440-23-5	NE	NE	NE	NE	NE	250	260	250	250	100%	253	250	260	42	110	45	45	100%	66	42
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.00078 J	0.00059 J	0.00011 J	< 0.0001	100%	0.0005	0.0001	0.0008	**0.0054** A(MCL)	0.00024 J	< 0.0001	< 0.0001	67%	0.0019	0.0001
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0019 J	0.002 J	< 0.00015	< 0.00015	67%	0.00135	0.00015	0.00200	0.016 J	< 0.0004	< 0.00015	< 0.00015	33%	0.00552	0.00015
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00280 J	0.00350 J	< 0.0014	< 0.0014	67%	0.003	0.0014	0.004	0.00290 J	< 0.00050	< 0.0014	< 0.0014	33%	0.002	0.0005
Zinc	7440-66-6	NE	NE	31	31	0.0657	< 0.0005	0.0035 J	< 0.0099 U	< 0.0027	33%	0.005	0.0005	0.010	< 0.0005	0.0036 J	< 0.0049 U	< 0.0027	33%	0.003	0.0005

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected	MW-816D Total Metals 11/1/2012	MW-816D Total Metals 7/17/2013	MW-816D Total Metals 9/12/2017	MW-816D Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)															
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0048	0.0034 J	< 0.0002	0.00059 J	< 0.00066 U	67%	0.0014	0.0002	0.0034
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.015	**0.068** A(MCL,I,DCL)	**0.072** A(MCL,I,DCL)	**0.017** J A(MCL,I,DCL)	**0.046** A(MCL,I,DCL)	100%	0.052	0.0170	0.072
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036		< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.350	0.18 J	0.2	0.097	0.16	100%	0.159	0.097	0.200
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015		< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.002	0.0044	0.0055	< 0.001	0.0019 J	67%	0.004	0.0010	0.006
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE		NP	NP	< **0.001**	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.002	0.00083 J	*0.0021* J B	0.00045 J	0.0012 J	100%	0.0011	0.0005	0.002
Iron	7439-89-6	NE	NE	NE	NE	NE	2.9	0.98	1.4	0.35	0.730 J-	100%	0.9	0.4	1.4
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00020	0.00037 J	< 0.0001	0.00033 J	0.00019 J	67%	0.00027	0.00010	0.00037
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.2800	0.013	0.0094	0.0031 J	0.0046 J	100%	0.0085	0.0031	0.0130
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	0.00003	< #######	< ####### B	< *0.000078* U	NP	0%	0.00004	0.00002	0.00008
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0340	0.028	0.0037 J	0.0058 J+	0.0077	100%	0.0125	0.0037	0.0280
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.004	0.0033 J	0.0038 J	0.0016 J	0.0029 J	100%	0.003	0.0016	0.004
Potassium	7440-09-7	NE	NE	NE	NE	NE	43	12	13	4.5	9.6 J-	100%	10	5	13
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.012	*0.015* B	*0.0073* B	0.0043 J	< 0.0004	100%	0.009	0.0043	0.015
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012		< *0.00015*	< *0.00015*	< 0.0001	< 0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	110	51	64	24	50	100%	46	24	64
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0054	**0.0032** J A(MCL)	< 0.00015	0.0017 J+	0.0015 J	67%	0.0017	0.0002	0.0032
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.016	0.013 J	< 0.0004	0.0018	0.00017 J	67%	0.00507	0.00040	0.013
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.003	0.00870	0.00850	*0.012* B	0.01	100%	0.010	0.0085	0.012
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.005	0.0068 J	0.0049 J	< 0.0042 U	0.0027 J	67%	0.005	0.0042	0.007

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
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[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
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[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-816S Total Metals 11/1/2012	MW-816S Total Metals 7/16/2013	MW-816S Total Metals 9/12/2017	MW-816S Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-817D Total Metals 11/1/2012	MW-817D Dup Total Metals 11/1/2012	M Tc 7
Metals (mg/L)																	
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00057 J	0.0056 J	< 0.0021 U	0.0015 J	67%	0.0028	0.0006	0.0056	0.00075 J	0.00058 J	0.00078
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.057** A(MCL,I,DCL)	**0.03** A(MCL,I,DCL)	**0.037** A(MCL,I,DCL)	**0.0053** A(I)	100%	0.041	0.0300	0.057	**0.047** A(MCL,I,DCL)	**0.047** A(MCL,I,DCL)	**0.042**
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.31	0.26	0.16	0.13	100%	0.243	0.160	0.310	0.21	0.19 J	0.15
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				*0.00016* J B	*0.0002* J B	< 0.00015
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0039	< 0.0003	0.0013 J	< 0.001	67%	0.002	0.0003	0.004	0.0082	0.0089	0.0054
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	0.0058 J	NP	100%	0.0058	0.0058	0.0058	NP	NP	NP
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.018* B	*0.013* B	*0.0049* B	0.00054 J	100%	0.0120	0.0049	0.018	*0.0037* J B	*0.0036* J B	*0.0023*
Iron	7439-89-6	NE	NE	NE	NE	NE	0.61	< 0.0015	0.66	0.310 J	67%	0.4	0.0	0.7	1.3	1.3	0.85
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00055 J	0.00051 J	0.00049 J	< 0.0001	100%	0.00052	0.00049	0.00055	0.00035 J	0.0004 J	0.00012
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.2	0.00068 J	0.044	< 0.00086 U	100%	0.0816	0.0007	0.2000	0.028	0.038	0.02
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	*0.000280* B	< *0.00011* U	NP	33%	0.00014	0.00002	0.00028	*0.000120* J B	< #######	< #######
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.011 J	0.017 J	0.013	0.012	100%	0.0137	0.0110	0.0170	0.0085 J	0.0076 J	0.0049
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0033 J	0.0045 J	0.0056 J	0.0021 J	100%	0.004	0.0033	0.006	0.0064 J	0.0064 J	0.0045
Potassium	7440-09-7	NE	NE	NE	NE	NE	35	31	21	22	100%	29	21	35	29	29	24
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	*0.011* B	*0.019* B	0.0044 J	0.0027 J	100%	0.011	0.0044	0.019	*0.044* B	*0.046* B	*0.04*
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< *0.00015*	< *0.00015*	< 0.0001	< 0.0001	0%				< *0.00015*	< *0.00015*	< *0.00015*
Sodium	7440-23-5	NE	NE	NE	NE	NE	84	73	20	21	100%	59	20	84	220	210	190
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.00015	0.00018 J	0.00027 J	< 0.0001	67%	0.0002	0.0002	0.0003	0.00043 J	0.00028 J	< 0.00015
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.0004	0.00042 J	0.0005 J	< 0.00015	67%	0.00044	0.00040	0.001	0.0025 J	0.002 J	< 0.0004
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00270 J	0.00660 J	< 0.0014	< 0.0014	67%	0.004	0.0014	0.007	0.00900	0.00950	0.00930
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0031 J	0.0069 J	< 0.0085 U	< 0.0027	67%	0.006	0.0031	0.009	0.0044 J	0.0066 J	0.0063

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
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A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-817D tal Metals /17/2013	MW-817D Total Metals 9/14/2017	MW-817D Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)													
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	J	0.00015 J	0.00013 J	100%	0.0006	0.0002	0.0008
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	A(MCL,I,DCL)	**0.033** A(MCL,I,DCL)	**0.03** A(MCL,I,DCL)	100%	0.042	0.033	0.047
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036		< 0.00015	< 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE		0.13	0.11 J+	100%	0.17	0.13	0.21
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015		< 0.0001	< 0.0001	50%	0.00015	0.00010	0.00020
Chromium	7440-47-3	NE	0.1	150	150	0.042		0.004 J	0.004 J	100%	0.0066	0.0040	0.0089
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE		0.079	NP	100%	0.0790	0.0790	0.0790
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	J B	0.00047 J	0.00071 J	100%	0.0025	0.0005	0.0037
Iron	7439-89-6	NE	NE	NE	NE	NE		0.47 J	0.400 J	100%	0.98	0.47	1.30
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	J	0.00012 J	< 0.0001	100%	0.00025	0.00012	0.00040
Manganese	7439-96-5	NE	NE	NE	NE	NE		0.016	0.012	100%	0.026	0.016	0.038
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013		< *2E-05*	NP	25%	0.00005	0.00002	0.00012
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	J	0.0044 J	0.0044 J	100%	0.0064	0.0044	0.0085
Nickel	7440-2-0	NE	NE	2	2	0.0289	J	0.0037 J	0.0035 J	100%	0.0053	0.0037	0.0064
Potassium	7440-09-7	NE	NE	NE	NE	NE		22	19	100%	26	22	29
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	B	0.003 J	0.003 J	100%	0.033	0.003	0.046
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012		< 0.0001	< 0.0001 UJ	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE		190	160	100%	203	190	220
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01		< 0.0001	< 0.0001	50%	0.00024	0.00010	0.00043
Tin	7440-31-5	NE	NE	NE	NE	0.18		0.00017 J	0.00017 J	75%	0.0013	0.0002	0.0025
Vanadium	7440-62-2	NE	NE	NE	NE	0.012		*0.014* B	*0.012* B	100%	0.010	0.009	0.014
Zinc	7440-66-6	NE	NE	31	31	0.0657	J	< 0.0027	0.0029 J	75%	0.0050	0.0027	0.0066

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-817S Total Metals 11/1/2012	MW-817S Total Metals 7/17/2013	MW-817S Total Metals 9/14/2017	MW-817S Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-818S Total Metals 11/1/2012	MW-818S Total Metals 7/17/2013	MW-818S Total Metals 9/14/2017	MW-818S DUP Total Metals 9/14/2017
Metals (mg/L)																		
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00031 J	< 0.0002	< 0.00034 U	< 0.00005	33%	0.0003	0.0002	0.0003	< 0.0002	0.00024 J	< 0.00029 U	< 0.00033 U
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0022** J A(I)	**0.0036** J A(I)	< 0.0008	**0.0041** J A(I)	67%	0.002	0.0008	0.004	**0.021** A(MCL,I,DCL)	**0.015** A(MCL,I,DCL)	**0.015** A(MCL,I,DCL)	**0.012** A(MCL,I,DCL)
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.28	0.15	0.14	0.14 J+	100%	0.19	0.14	0.28	0.66	0.63	0.32 J	0.44 J
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0039	0.0023 J	0.0023 J	0.0027 J	100%	0.003	0.0023	0.004	0.0044	0.0015 J	0.0028 J	0.0015 J
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	< 0.001	NP	0%				NP	NP	< 0.001	< 0.001
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.0004 J	0.0017 J B	< 0.0004	< 0.0004	67%	0.0008	0.0004	0.002	< 0.00015	0.0014 J	0.0015 J	0.00041 J
Iron	7439-89-6	NE	NE	NE	NE	NE	0.29	7.7	0.68 J	0.560	100%	2.9	0.3	7.7	0.49	4.2	1.4	1.1
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00015 J	0.00054 J	< 0.0001	< 0.0001	67%	0.00026	0.00010	0.00054	< 0.0001	0.00025 J	0.00063 J	0.00057 J
Manganese	7439-96-5	NE	NE	NE	NE	NE	1.5	0.81	0.35	0.38	100%	0.89	0.35	1.50	0.38	1.4	0.43	0.38
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< #######	< 2E-05	NP	0%				< #######	< #######	< 2E-05	< 2E-05
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0042 J	0.0096 J	0.0011 J	0.0011 J	100%	0.0050	0.0011	0.0096	0.0017 J	0.022	0.011	0.01
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0041 J	0.0016 J	0.00099 J	0.001 J	100%	0.002	0.0010	0.004	0.0021 J	0.0022 J	0.0013 J	0.0011 J
Potassium	7440-09-7	NE	NE	NE	NE	NE	28	20	18	18	100%	22	18	28	5.5	9.8	7.2	6.5
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0013 J	0.0024 J	< 0.0004	< 0.0004	67%	0.0014	0.0004	0.0024	0.0032 J	0.0016 J	0.005 J+ B	< 0.0004
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001
Sodium	7440-23-5	NE	NE	NE	NE	NE	56	66	160	160	100%	94	56	160	19	34	55	47
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.00015	0.00031 J	< 0.0001	< 0.0001	33%	0.00019	0.00010	0.00031	< 0.00015	< 0.00015	< 0.0001	< 0.0001
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.0004	0.00045 J	< 0.00015	< 0.00015	33%	0.00033	0.00015	0.0005	< 0.0004	< 0.0004	< 0.00015	< 0.00015
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00240 J	0.00620 J	0.0035 J	0.003 J	100%	0.004	0.0024	0.006	0.00430 J	0.00100 J	< 0.0014	0.0043 J
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0014 J	0.0065 J	< 0.0027	< 0.0027	67%	0.004	0.0014	0.007	0.0022 J	0.0077 J	0.0032 J	< 0.0027

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
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Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-818S Dissolved Metals 9/14/2017	MW-818S DUP Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)												
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.0002	< 0.0002	25%	0.0003	0.0002	0.0003
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.015** [J] A(MCL,I,DCL)	**0.014** [J] A(MCL,I,DCL)	100%	0.016	0.012	0.021
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.47	0.44	100%	0.51	0.32	0.66
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.0004	< 0.0004	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	< 0.004	< 0.004	100%	0.0026	0.0015	0.0044
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	< 0.0016	< 0.0016	75%	0.0009	0.0002	0.0015
Iron	7439-89-6	NE	NE	NE	NE	NE	0.340 [J]	0.340 [J]	100%	1.80	0.49	4.20
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	< 0.0004	< 0.0004	75%	0.00039	0.00010	0.00063
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.40	0.43	100%	0.65	0.38	1.40
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	NP	NP	0%			
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0088 [J]	0.011 [J]	100%	0.0112	0.0017	0.0220
Nickel	7440-2-0	NE	NE	2	2	0.0289	< 0.0014	< 0.0014	100%	0.0017	0.0011	0.0022
Potassium	7440-09-7	NE	NE	NE	NE	NE	6.7	6.4	100%	7.3	5.5	9.8
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	< 0.0016	< 0.0016	75%	0.0026	0.0004	0.0050
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.0001	< 0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	51	49	100%	39	19	55
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.0004	< 0.0004	0%			
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.0006	< 0.0006	0%			
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	< 0.0054	< 0.0054	75%	0.0028	0.0010	0.0043
Zinc	7440-66-6	NE	NE	31	31	0.0657	< 0.011	< 0.011	75%	0.0040	0.0022	0.0077

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-819D Total Metals 11/2/2012	MW-819D Total Metals 7/17/2013	MW-819D Total Metals 9/12/2017	MW-819D Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-819S Total Metals 11/2/2012	MW-819S Total Metals 7/17/2013	MW-819S Total Metals 9/12/2017	MW-819S Dissolved Metals 9/12/2017	% Detect	Average
Metals (mg/L)																				
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00084 [J]	0.00021 [J]	0.000079 [J]	< 0.00083 [U]	100%	0.00038	0.00008	0.00084	0.00032 [J]	< 0.0002	< 0.0004 [U]	< 0.00017 [U]	33%	0.00031
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0057** [J] A(I)	**0.0054** [J] A(I)	< 0.0008	< 0.0008	67%	0.0040	0.0008	0.0057	**0.0058** [J] A(I)	**0.0054** [J] A(I)	< 0.0008	< 0.0008	67%	0.0040
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%	
Boron	7440-42-8	NE	NE	NE	NE	NE	0.16 [J]	0.16	0.16	0.15	100%	0.16	0.16	0.16	0.22	0.24	0.19	0.18	100%	0.22
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%	
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0024 [J]	0.0015 [J]	< 0.001	< 0.001	67%	0.002	0.0010	0.002	0.0024 [J]	0.0019 [J]	0.0014 [J]	< 0.001	100%	0.002
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	0.0065 [J]	NP	100%	0.0065	0.0065	0.0065	NP	NP	< 0.001	NP	0%	
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.0084 [J] B	0.0072 [J] B	0.0025 B	< 0.0004	100%	0.0060	0.0025	0.008	0.00029 [J]	0.0013 [J]	0.01 B	0.00048 [J]	100%	0.0039
Iron	7439-89-6	NE	NE	NE	NE	NE	20	19	14	0.061 [J]	100%	18	14	20	4.8	5.6	18	0.370 [J]	100%	9
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00033 [J]	0.00037 [J]	0.00039 [J]	< 0.0001	100%	0.00036	0.00033	0.00039	0.00021 [J]	0.00071 [J]	0.0053 B	0.00025 [J]	100%	0.00207
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.13 [B]	0.11	0.091	0.087	100%	0.11	0.09	0.13	0.73 [B]	0.47	0.74	0.72	100%	0.65
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< #######	< 0.000099 [U]	NP	0%	0.00005	0.00002	0.00010	< #######	< #######	< 0.000084 [U]	NP	0%	0.00004
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0055 [J]	0.0052 [J]	0.0013 [J+]	0.004 [J]	100%	0.0040	0.0013	0.0055	0.002 [J]	0.0026 [J]	0.0013	0.00073 [J]	100%	0.0020
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.002 [J]	0.0011 [J]	0.0026 [J]	< 0.00035	100%	0.002	0.0011	0.003	0.004 [J]	0.0015 [J]	0.0032 [J]	0.0018 [J]	100%	0.003
Potassium	7440-09-7	NE	NE	NE	NE	NE	6.6	6.5	5.3	6	100%	6	5	7	20	11	7	7 [J-]	100%	13
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0028 [J]	0.0026 [J]	0.0035 [J]	< 0.0004	100%	0.0030	0.0026	0.0035	0.0025 [J]	0.00068 [J]	0.0011 [J]	< 0.0004	100%	0.0014
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%	
Sodium	7440-23-5	NE	NE	NE	NE	NE	230	220	310	290	100%	253	220	310	57	34	23	25 [J-]	100%	38
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.00074 [J]	0.00086 [J]	< 0.00036 [U]	< 0.002	67%	0.00065	0.00036	0.00086	< 0.00015	0.00032 [J]	0.00012 [J]	< 0.0001	67%	0.00020
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0033 [J]	0.002 [J]	0.00066 [J]	< 0.003	100%	0.00199	0.00066	0.0033	0.0005 [J]	0.00065 [J]	0.00068 [J]	< 0.00015	100%	0.00061
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00100 [J]	0.00051 [J]	0.0032 [J]	< 0.0014	100%	0.002	0.0005	0.003	0.00380 [J]	0.00330 [J]	0.0041 [J]	< 0.0014	100%	0.004
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.014 [J]	0.012 [J]	0.012 [J+]	0.0064 [J]	100%	0.013	0.0120	0.014	0.011 [J]	0.004 [J]	0.02 [J+]	0.0094 [J]	100%	0.012

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected	MW-820S Total Metals 11/2/2012	MW-820S Total Metals 7/18/2013	MW-820S Total Metals 9/12/2017	MW-820S Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)																
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00020	0.00040	0.0018 [J]	0.0019 [J]	0.0024 [J]	0.00096 [J-]	100%	0.00203	0.00180	0.00240
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.0008	0.0058	**0.062** A(MCL,I,DCL)	**0.027** A(MCL,I,DCL)	**0.013** [J] A(MCL,I,DCL)	**0.011** [J-] A(MCL,I,DCL)	100%	0.0340	0.0130	0.0620
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036			< 0.00015	< 0.00015	< 0.00015	< 0.00015 [UJ]	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.19	0.24	0.094 [J]	0.045	0.12	0.11	100%	0.09	0.05	0.12
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015			< 0.00015	< 0.00015	< 0.0001	< 0.0001 [UJ]	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0014	0.002	0.0076	0.002 [J]	0.0017 [J]	0.0011 [J]	100%	0.004	0.0017	0.008
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE			NP	NP	< **0.001** [R]	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.0003	0.010	*0.0031* [J] B	*0.0035* [J] B	*0.0024* B	0.0008 [J]	100%	0.0030	0.0024	0.004
Iron	7439-89-6	NE	NE	NE	NE	NE	5	18	0.69	< 0.0015	0.12	0.071 [J]	67%	0.2705	0.0015	0.69
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00021	0.00530	0.00068 [J]	0.00016 [J]	*0.0013* B	0.00014 [J]	100%	0.00071	0.00016	0.00130
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.47	0.74	0.0019 [BJ]	0.00087 [J]	0.0016 [J]	< 0.0015 [UJ]	100%	0.0015	0.0009	0.0019
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	0.00002	0.00008	*0.000066* [J] B	*0.000430* B	< *0.000074* [U]	NP	67%	0.00019	0.00007	0.00043
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0013	0.0026	0.026	0.02 [J]	0.013	0.0084 [J-]	100%	0.0197	0.0130	0.0260
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0015	0.004	0.0064 [J]	0.0062 [J]	0.003 [J]	0.0021 [J]	100%	0.005	0.0030	0.006
Potassium	7440-09-7	NE	NE	NE	NE	NE	7	20	15	14	9.9	11 [J+]	100%	13	10	15
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0007	0.0025	0.0033 [J]	0.0032 [J]	0.0025 [J]	< 0.0004 [UJ]	100%	0.0030	0.0025	0.0033
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012			< *0.00015*	< *0.00015*	< 0.0001	< 0.0001 [UJ]	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	23	57	220	270	32	36 [J+]	100%	174	32	270
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.00012	0.00032	< 0.00015	< 0.00015	0.0018	< 0.0001 [UJ]	33%	0.0007	0.0002	0.0018
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00050	0.0007	< 0.0004	< 0.0004	0.0022	< 0.00015 [UJ]	33%	0.0010	0.0004	0.0022
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.0033	0.004	*0.04300* B	*0.03000* B	*0.012* B	0.011 [J-]	100%	0.028	0.0120	0.043
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0040	0.020	0.0021 [J]	0.024	0.011	< 0.0027 [UJ]	100%	0.012	0.0021	0.024

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
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A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
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[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-821D Total Metals 11/2/2012	MW-821D Total Metals 7/18/2013	MW-821D Total Metals 9/12/2017	MW-821D Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-821S Total Metals 11/2/2012	MW-821S Total Metals 7/18/2013	MW-821S Total Metals 9/12/2017	I
Metals (mg/L)																		
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0016 J	0.00068 J	< 0.0013 U	0.0002 J	67%	0.00119	0.00068	0.00160	0.00027 J	< 0.0002	< 0.00005	
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.019** A(MCL,I,DCL)	**0.024** A(MCL,I,DCL)	**0.023** A(MCL,I,DCL)	**0.015** A(MCL,I,DCL)	100%	0.022	0.019	0.024	**0.0077** J A(I)	**0.0042** J A(I)	< 0.0008	
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	<
Boron	7440-42-8	NE	NE	NE	NE	NE	0.15 J	0.15	0.11	0.12 J+	100%	0.14	0.11	0.15	0.2	0.13	0.083 J+	
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	0.00034 J B	< 0.0001	33%	0.00021	0.00015	0.00034	< 0.00015	< 0.00015	< 0.0001	<
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.011	0.0076	0.0059 J+	0.0052	100%	0.008	0.0059	0.011	0.0011 J	0.0012 J	< 0.001	<
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	< 0.001	NP	0%				NP	NP	< 0.001	
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.018 B	0.0078 J B	0.0066 B	0.0039 J B	100%	0.0108	0.0066	0.018	< 0.00015	0.00051 J	0.00065 J	<
Iron	7439-89-6	NE	NE	NE	NE	NE	0.77	0.95	0.96 J	0.760	100%	0.8933	0.77	0.96	34	14	6.3	
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00097 J	0.0008 J	0.00097 J	0.00066 J	100%	0.00091	0.00080	0.00097	0.00028 J	0.00034 J	0.00019 J	<
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.14 B	0.064	0.047	0.038	100%	0.084	0.047	0.140	0.89 B	0.52	0.38	
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< ####### B	< 0.000092 U	NP	0%	0.000047	0.000020	0.000092	< #######	< ####### B	< 0.0001 U	
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.014 J	0.028	0.009	0.0052	100%	0.017	0.009	0.028	0.0013 J	0.00033 J	< 0.00064 U	
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0045 J	0.0055 J	0.0038 J	0.0027 J	100%	0.005	0.0038	0.006	0.0022 J	0.00086 J	0.0014 J	
Potassium	7440-09-7	NE	NE	NE	NE	NE	3.1	2.8	2.7	3	100%	2.9	2.7	3.1	6.7	7.5	5.8	
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0048 J	0.021 B	0.026 B	0.0017 J	100%	0.0173	0.0048	0.0260	0.0013 J	0.00039 J	< 0.0004	<
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001	<
Sodium	7440-23-5	NE	NE	NE	NE	NE	910	860	910	740	100%	893	860	910	18	31	16	
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0013 J	**0.0039** J A(MCL)	0.0017	< 0.0001	100%	0.0023	0.0013	0.0039	< 0.00015	< 0.00015	< 0.0001	
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0069 J	0.0092 J	0.0029 J	0.00015 J	100%	0.0063	0.0029	0.0092	< 0.0004	< 0.0004	0.00048 J	<
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.04900 B	0.05100 B	0.032 B	0.036 B	100%	0.044	0.0320	0.051	0.007 J	0.00330 J	0.0097	<
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0043 J	0.0047 J	0.016 J+	0.0037 J	100%	0.008	0.0043	0.016	0.0034 J	0.0023 J	< 0.0077 U	<

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-821S Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)											
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00014 J	33%	0.00017	0.00005	0.00027
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.0011 J	67%	0.0042	0.0008	0.0077
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.12 J+	100%	0.14	0.08	0.20
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	0.0001	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.001	67%	0.001	0.0010	0.001
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.0004	67%	0.0004	0.0002	0.001
Iron	7439-89-6	NE	NE	NE	NE	NE	0.045 J	100%	18.1000	6.30	34.00
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.0001	100%	0.00027	0.00019	0.00034
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.53	100%	0.597	0.380	0.890
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	NP	0%	0.00005	0.00002	0.00010
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0041 J	67%	0.0008	0.0003	0.0013
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.00091 J	100%	0.0015	0.0009	0.0022
Potassium	7440-09-7	NE	NE	NE	NE	NE	9	100%	6.7	5.8	7.5
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0004	67%	0.0007	0.0004	0.0013
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	25	100%	22	16	31
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0001 J	0%			
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00015	33%	0.0004	0.0004	0.0005
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.0014	100%	0.007	0.0033	0.010
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0027	67%	0.004	0.0023	0.008

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
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NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
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A(I)=IDEM DQO Exceedance of the Industrial Level
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B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-822D Total Metals 10/31/2012	MW-822D Total Metals 7/16/2013	MW-822D Total Metals 9/13/2017	MW-822D Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-822S Total Metals 10/31/2012	MW-822S Total Metals 7/16/2013	MW-822S Total Metals 9/13/2017	MW-822S DUP Total Metals 9/13/2017	MW-822S Dissolved Metals 9/13/2017
Metals (mg/L)																			
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0047 J	0.00075 J	< 0.000073 U	< 0.000053 U	67%	0.00184	0.00007	0.00470	0.00026 J	< 0.0002	0.00039 J	< 0.00028 U	< 0.000086 U
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0094** J A(I)	**0.014** A(MCL,I,DCL)	**0.0038** J A(I)	< 0.0008	100%	0.0091	0.0038	0.0140	**0.0033** J A(I)	**0.0033** J A(I)	< 0.0008	< 0.0008	< 0.0008
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015 UJ	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015 UJ	< 0.00015 UJ	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.62	0.45	0.45	0.48	100%	0.51	0.45	0.62	0.29	0.23	0.21 J+	0.21	0.21 B
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	*< 0.00015*	*< 0.00015*	< 0.0001	< 0.0001	0%				*< 0.00015*	*< 0.00015*	< 0.0001	< 0.0001	< 0.0001
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.00083 J	< 0.0003	< 0.0016 U	< 0.001	33%	0.0009	0.0003	0.0016	0.0012 J	< 0.0003	< 0.0013 U	< 0.0015 U	< 0.001
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	< **0.001**	NP	0%				NP	NP	< **0.001**	< **0.001**	NP
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0086* J B	*0.0071* J B	0.00064 J	0.00055 J	100%	0.0054	0.0006	0.009	< 0.00015	0.00076 J	0.0012 J	0.0012 J	< 0.0004
Iron	7439-89-6	NE	NE	NE	NE	NE	10	8.8	4.1	0.052 J	100%	7.6333	4.10	10.00	4.6	7.4	3.9	3.3	< 0.009
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	*0.0013* J B	0.0004 J	0.00031 J	0.00014 J	100%	0.00067	0.00031	0.00130	0.00018 J	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.42	0.11	0.037	0.029	100%	0.189	0.037	0.420	0.63	0.64	0.48	0.4	0.4
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	*< #######*	*< #######*	*< 0.00013* U	NP	0%	0.00006	0.00002	0.00013	*< #######*	*< #######*	*< 0.00013* U	*< 0.00012* U	NP
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.033	0.024	< 0.0011 U	< 0.0011 U	67%	0.0194	0.0011	0.0330	0.0062 J	0.0034 J	0.0079 J+	0.0078 J+	0.012 J
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0039 J	0.0015 J	0.0004 J	0.00049 J	100%	0.0019	0.0004	0.0039	0.0021 J	0.00037 J	< 0.00035	< 0.00035	< 0.00035
Potassium	7440-09-7	NE	NE	NE	NE	NE	9.6	6.4	3.4	3	100%	6.5	3.4	9.6	3.6	2.9	4.3	4.2	4.0
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	*0.012* B	*0.01* B	< 0.0004	< 0.0004	67%	0.0075	0.0004	0.0120	0.0011 J	0.00078 J	< 0.0004	< 0.0004	< 0.0004
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	*< 0.00015*	*< 0.00015*	< 0.0001	< 0.0001 UJ	0%				*< 0.00015*	*< 0.00015*	< 0.0001	< 0.0001	< 0.0001 UJ
Sodium	7440-23-5	NE	NE	NE	NE	NE	580	650	130	310	100%	453	130	650	30	27	25	24	23
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	**0.0039** J A(MCL)	**0.0028** J A(MCL)	< 0.00037 U	< 0.0001 B	67%	0.0024	0.0004	0.0039	< 0.00015	< 0.00015	< 0.00068 U	< 0.00049 U	< 0.0001 B
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.015 J	0.0074 J	< 0.00015	< 0.00015	67%	0.0075	0.0002	0.0150	0.00063 J	< 0.0004	< 0.00015	< 0.00015	< 0.00015
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00340 J	0.00140 J	< 0.0014	< 0.0014	67%	0.002	0.0014	0.003	< 0.00050	0.00150 J	0.0048 J	0.0028 J	< 0.0014
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.019 J	0.01 J	0.0094 J	0.0086 J	100%	0.013	0.0094	0.019	0.0029 J	0.0034 J	< 0.0027	< 0.0027	< 0.0027

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-822S DUP Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)											
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.000072 U	50%	0.0003	0.0002	0.0004
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	< 0.0008	50%	0.0021	0.0008	0.0033
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.2 J+	100%	0.24	0.21	0.29
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.0001	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	< 0.001	25%	0.0011	0.0003	0.0015
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	< 0.0004	75%	0.0008	0.0002	0.0012
Iron	7439-89-6	NE	NE	NE	NE	NE	0.018 J	100%	4.80	3.30	7.40
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	< 0.0001	25%	0.00012	0.00010	0.00018
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.35	100%	0.54	0.40	0.64
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	NP	0%	0.00008	0.00002	0.00013
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0079 J	100%	0.0063	0.0034	0.0079
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.00039 J	50%	0.0008	0.0004	0.0021
Potassium	7440-09-7	NE	NE	NE	NE	NE	3.9	100%	3.8	2.9	4.3
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	< 0.0004	50%	0.0007	0.0004	0.0011
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.0001 UJ	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	22	100%	27	24	30
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.0001 B	0%	0.00037	0.00015	0.00068
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.00015	25%	0.00033	0.00015	0.00063
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	< 0.0014	75%	0.0024	0.0005	0.0048
Zinc	7440-66-6	NE	NE	31	31	0.0657	< 0.0027	50%	0.0029	0.0027	0.0034

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-823D Total Metals 11/1/2012	MW-823D Total Metals 7/17/2013	MW-823D Total Metals 9/12/2017	MW-823D Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-823S Total Metals 11/1/2012	MW-823S Total Metals 7/17/2013	MW-823S-Dup Total Metals 7/17/2013
Metals (mg/L)																	
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00033 J	0.00038 J	< 0.00005	< 0.000075 UJ	67%	0.00025	0.00005	0.00038	0.00065 J	0.004 J	0.0039 J
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.052** A(MCL,I,DCL)	**0.044** A(MCL,I,DCL)	**0.011** J A(MCL,I,DCL)	**0.031** A(MCL,I,DCL)	100%	0.0357	0.0110	0.0520	**0.0094** J A(I)	0.0003 J	0.00085 J
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.14 J	0.096	0.1	0.17 J+	100%	0.11	0.10	0.14	0.38	0.32	0.33
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	*< 0.00015*	*< 0.00015*	< 0.0001	< 0.0001	0%				*< 0.00015*	*0.00029* J B	*0.00032* J B
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0052	0.0072	< 0.001	0.0011 J	67%	0.0045	0.0010	0.0072	0.0016 J	0.0052	0.0042
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	< **0.001**	NP	0%				NP	NP	NP
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0068* J B	*0.0064* J B	0.0008 J	0.00084 J	100%	0.0047	0.0008	0.007	0.0012 J	*0.0051* J B	*0.0049* J B
Iron	7439-89-6	NE	NE	NE	NE	NE	0.64	1.1	1.2	0.650 J-	100%	0.9800	0.64	1.20	6.6	1	1.1
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00043 J	0.0011 J	0.00024 J	0.00011 J	100%	0.00059	0.00024	0.00110	0.00054 J	0.00011 J	0.00011 J
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.034	0.027	0.014	0.0075	100%	0.025	0.014	0.034	0.97	0.67	0.68
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< #######	< *0.000091* UJ	NP	0%	0.00005	0.00002	0.00009	< #######	*< 0.000030*	*< 0.000030*
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0047 J	0.0032 J	< 0.00082 UJ	0.0013 J	67%	0.0029	0.0008	0.0047	0.0097 J	0.015 J	0.015 J
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0021 J	0.0027 J	0.00084 J	0.00059 J	100%	0.0019	0.0008	0.0027	0.0036 J	0.004 J	0.0035 J
Potassium	7440-09-7	NE	NE	NE	NE	NE	11	11	3.6	7 J-	100%	8.5	3.6	11.0	10	43	43
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0047 J	0.0035 J	0.00071 J	< 0.0004	100%	0.0030	0.0007	0.0047	*0.014* B	*0.0078* B	*0.0072* B
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	*< 0.00015*	*< 0.00015*	< 0.0001	< 0.0001	0%				*< 0.00015*	*< 0.00015*	*< 0.00015*
Sodium	7440-23-5	NE	NE	NE	NE	NE	490	560	210	340	100%	420	210	560	47	57	58
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				0.00021 J	< 0.00015	< 0.00015
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00089 J	< 0.0004	< 0.00015	< 0.00015	33%	0.0005	0.0002	0.0009	0.0011 J	< 0.0004	< 0.0004
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	*0.02000* B	*0.01400* B	0.0082	0.0065	100%	0.014	0.0082	0.020	0.00079 J	< 0.00050	< 0.00050
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.011 J	0.013 J	< 0.0053 UJ	< 0.0027	67%	0.010	0.0053	0.013	0.0056 J	0.01 J	0.0099 J

Notes:

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A(GW)=IDEM DQO Exceedance of the GW Solubility
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A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-823S Total Metals 9/12/2017	MW-823S Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)												
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0017 [J]	≤ 0.0019 [U]	100%	0.0026	0.0007	0.0040
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	≤ 0.0008	**0.0024** [J] A(I)	75%	0.0028	0.0003	0.0094
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	≤ 0.00015	≤ 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.23	0.26	100%	0.32	0.23	0.38
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	≤ 0.0001	≤ 0.0001	50%	0.00022	0.00010	0.00032
Chromium	7440-47-3	NE	0.1	150	150	0.042	≤ 0.001	≤ 0.001	75%	0.0030	0.0010	0.0052
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	0.0021 [J]	NP	100%	0.0021	0.0021	0.0021
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0048* [J] B	*0.0044* [J] B	100%	0.0040	0.0012	0.0051
Iron	7439-89-6	NE	NE	NE	NE	NE	0.57 [J]	0.061 [J]	100%	2.3	0.6	6.6
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00015 [J]	≤ 0.0001	100%	0.0002	0.0001	0.0005
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.25	0.31	100%	0.64	0.25	0.97
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	≤ *0.00012* [U]	NP	0%	0.00005	0.00002	0.00012
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0072	0.0096	100%	0.012	0.007	0.015
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.002 [J]	0.0008 [J]	100%	0.003	0.002	0.004
Potassium	7440-09-7	NE	NE	NE	NE	NE	8	10	100%	26	8	43
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0036 [J]	0.0026 [J]	100%	0.0082	0.0036	0.0140
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	≤ 0.0001	≤ 0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	16	20 [J+]	100%	45	16	58
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	≤ 0.0001	≤ 0.0001	25%	0.00015	0.00010	0.00021
Tin	7440-31-5	NE	NE	NE	NE	0.18	≤ 0.00015	≤ 0.00015	25%	0.0005	0.0002	0.0011
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.008	0.0033 [J]	50%	0.0024	0.0005	0.0080
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0046 [J]	≤ 0.0027	100%	0.0075	0.0046	0.010

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-824D Total Metals 11/1/2012	MW-824D Total Metals 7/18/2013	MW-824D Total Metals 9/12/2017	MW-824D Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-824S Total Metals 11/1/2012	MW-824S Total Metals 7/15/2013	MW-824S Total Metals 9/12/2017	MW-824S Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected
Metals (mg/L)																					
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0033 J	< 0.0002	< 0.00056 U	< 0.00005	33%	0.00135	0.00020	0.00330	< 0.0002	< 0.0002	< 0.0015 U	< 0.00005	0%	0.00063	0.00020
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0077** J A(I)	**0.0042** J A(I)	< 0.0008	**0.002** J A(I)	67%	0.0042	0.0008	0.0077	0.00075 J	0.0016 J	< 0.0008	0.0017 J	67%	0.0011	0.0008
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%		
Boron	7440-42-8	NE	NE	NE	NE	NE	0.19 J	0.18	0.25	0.22	100%	0.21	0.18	0.25	0.26	0.24	0.13	0.095	100%	0.21	0.13
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	0.0001 J	< 0.0001	33%	0.00013	0.00010	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%		
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0044	0.0014 J	< 0.001	< 0.001	67%	0.0023	0.0010	0.0044	0.0035	0.001 J	< 0.001	< 0.001	67%	0.0018	0.0010
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	0.0016 J	NP	100%	0.0016	0.0016	0.0016	NP	NP	< 0.001	NP	0%		
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.0048 J B	0.0034 J B	0.001	< 0.0004	100%	0.0031	0.0010	0.005	0.00035 J	0.0017 J B	0.0016 B	< 0.0004	100%	0.0012	0.0004
Iron	7439-89-6	NE	NE	NE	NE	NE	1.6	2	6.2	0.091 J	100%	3.3	1.6	6.2	0.4	0.1	0.3	0.110 J	100%	0.27	0.10
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00045 J	0.00017 J	0.00013 J	< 0.0001	100%	0.00025	0.00013	0.00045	0.00011 J	< 0.0001	0.00036 J	< 0.0001	67%	0.00019	0.00010
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.14	0.11	0.12	0.11	100%	0.123	0.110	0.140	0.13	0.2	0.026	0.025 J+	100%	0.119	0.026
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< ####### B	< 0.000038 U	NP	0%	0.000029	0.000020	0.000038	< #######	< #######	< 0.000023 U	NP	0%	0.000024	0.000020
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.028	0.0035 J	0.0031	0.0012 J	100%	0.0115	0.0031	0.0280	0.0019 J	0.0029 J	0.006	0.00076 J	100%	0.0036	0.0019
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0025 J	0.0018 J	0.0031 J	< 0.00035	100%	0.0025	0.0018	0.0031	0.0021 J	0.00049 J	0.0019 J	< 0.00035	100%	0.0015	0.0005
Potassium	7440-09-7	NE	NE	NE	NE	NE	7.7	5.2	5.6	6	100%	6.2	5.2	7.7	31	38	21	24	100%	30	21
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.011 B	0.0002 J	0.0023 J	< 0.0004	100%	0.0045	0.0002	0.0110	0.0031 J	0.0036 J	0.003 J	< 0.0004	100%	0.0032	0.0030
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%		
Sodium	7440-23-5	NE	NE	NE	NE	NE	310	310	270	280	100%	297	270	310	55	79	70	70	100%	68	55
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	**0.0031** J A(MCL)	< 0.00015	0.00055 J	< 0.0001	67%	0.0013	0.0002	0.0031	< 0.00015	0.0002 J	**0.002** A(MCL)	< 0.0001	67%	0.0008	0.0002
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.013 J	< 0.0004	0.0022	< 0.00015	67%	0.0052	0.0004	0.0130	< 0.0004	0.00068 J	0.0033	< 0.00015	67%	0.0015	0.0004
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00740 J	0.00810	0.0052	< 0.0014	100%	0.007	0.0052	0.008	0.00240 J	0.00200 J	0.0026 J	0.003 J	100%	0.002	0.0020
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0067 J	0.0064 J	0.013 J+	0.0074 J	100%	0.009	0.0064	0.013	0.0033 J	0.1 B	< 0.0073 U	0.0035 J	67%	0.037	0.0033

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected
Metals (mg/L)							
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00150
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.0016
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	
Boron	7440-42-8	NE	NE	NE	NE	NE	0.26
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0035
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.002
Iron	7439-89-6	NE	NE	NE	NE	NE	0.40
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00036
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.200
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	0.000030
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0060
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0021
Potassium	7440-09-7	NE	NE	NE	NE	NE	38
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0036
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	
Sodium	7440-23-5	NE	NE	NE	NE	NE	79
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0020
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0033
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.003
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.100

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
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[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
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[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-825S Total Metals 11/1/2012	MW-825S Total Metals 7/15/2013	MW-825S-Dup Total Metals 7/15/2013	MW-825S Total Metals 9/12/2017	MW-825S Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-826M Total Metals 11/2/2012	MW-826M Total Metals 7/16/2013	MW-826M Total Metals 9/14/2017	MW Dissolv 9/1
Metals (mg/L)																			
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	**0.0061** A(MCL)	0.0019 J	0.0019 J	< 0.005 U	< 0.0038 U	75%	0.0037	0.0019	0.0061	0.00052 J	< 0.0002	< 0.00005	< 0.00005
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0096** J A(I)	**0.0029** J A(I)	**0.0022** J A(I)	0.00084 J	**0.0029** J A(I)	100%	0.0039	0.0008	0.0096	**0.007** J A(I)	**0.0078** J A(I)	**0.013** A(MCL,I,DCL)	**0.014**
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.12 J	0.088	0.081	0.14	0.12	100%	0.11	0.08	0.14	0.28	0.33	0.28	0.28 J+
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	0.0014 B	< 0.0001
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0067	0.0039	0.0035	< 0.001	< 0.001	75%	0.0038	0.0010	0.0067	0.0041	0.00089 J	0.0023 J	0.0012 J
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	NP	0.0039 J	NP	100%	0.0039	0.0039	0.0039	NP	NP	**0.13** A(MCL)	NP
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.004 J B	0.0042 J B	0.0042 J B	0.0032 B	0.0014 J	100%	0.0039	0.0032	0.0042	0.0027 J B	0.0011 J	< 0.0004	< 0.0004
Iron	7439-89-6	NE	NE	NE	NE	NE	0.048 J	< 0.0015	< 0.0015	0.13	0.026 J	50%	0.045	0.002	0.13	0.83	0.19	0.34 J	0.210 J
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00072 J	0.00027 J	0.00027 J	0.00018 J	< 0.0001	100%	0.0004	0.0002	0.0007	0.00023 J	< 0.0001	0.00013 J	< 0.0001
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.0023	0.00091 J	0.00062 J	0.00079 J	0.0007 J	100%	0.0012	0.0006	0.0023	0.035	0.021	0.018	0.017
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	0.000093 J B	< #######	< 0.00015 U	NP	25%	0.00007	0.00002	0.00015	< #######	< #######	< 0.00002	NP
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.066	0.038	0.038	0.024	0.024	100%	0.042	0.024	0.066	0.003 J	0.0007 J	0.0077	0.00044 J
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0082 J	0.0059 J	0.006 J	0.0047 J	0.0034 J	100%	0.0062	0.0047	0.0082	0.0027 J	< 0.0001	0.002 J	< 0.00035
Potassium	7440-09-7	NE	NE	NE	NE	NE	85	80	82	46	45 J-	100%	73	46	85	13	12	19	19
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.015 B	0.0045 J	0.0039 J	0.0035 J	0.0012 J	100%	0.0067	0.0035	0.0150	0.0046 J	0.0021 J	< 0.0004	0.00041 J
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0001	0%				< 0.00015	< 0.00015	0.00063 J B	< 0.0001 UJ
Sodium	7440-23-5	NE	NE	NE	NE	NE	170	300	290	110	110	100%	218	110	300	120	97	240	260
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	**0.0042** J A(MCL)	< 0.00015	< 0.00015	0.00016 J	0.00011 J	50%	0.00117	0.00015	0.00420	0.0005 J	< 0.00015	< 0.0001	< 0.0001
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.015 J	< 0.0004	< 0.0004	< 0.00015	< 0.00015	25%	0.0040	0.0002	0.0150	0.002 J	< 0.0004	< 0.00015	0.00017 J
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.03100 B	0.02500 B	0.02400 B	0.031 B	0.03 B	100%	0.0278	0.0240	0.0310	0.00083 J	0.00280 J	0.0044 J	0.0036 J
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0028 J	0.0029 J	0.0027 J	< 0.009 U	< 0.0027	75%	0.0044	0.0027	0.009	0.0064 J	0.0088 J	0.013 J	0.011

Notes:

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[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	-826M ed Metals 4/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)											
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08		33%	0.00026	0.00005	0.00052
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	A(MCL,I,DCL)	100%	0.0093	0.0070	0.0130
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036		0%			
Boron	7440-42-8	NE	NE	NE	NE	NE		100%	0.30	0.28	0.33
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015		33%	0.0006	0.0002	0.0014
Chromium	7440-47-3	NE	0.1	150	150	0.042		100%	0.0024	0.0009	0.0041
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE		100%	0.1300	0.1300	0.1300
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158		67%	0.0014	0.0004	0.003
Iron	7439-89-6	NE	NE	NE	NE	NE		100%	0.45	0.19	0.83
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117		67%	0.00015	0.00010	0.00023
Manganese	7439-96-5	NE	NE	NE	NE	NE		100%	0.025	0.018	0.035
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013		0%			
Molybdenum	7439-98-7	NE	NE	NE	NE	NE		100%	0.0038	0.0007	0.0077
Nickel	7440-2-0	NE	NE	2	2	0.0289		67%	0.0016	0.0001	0.0027
Potassium	7440-09-7	NE	NE	NE	NE	NE		100%	15	12	19
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005		67%	0.0024	0.0004	0.0046
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012		33%	0.0003	0.0002	0.0006
Sodium	7440-23-5	NE	NE	NE	NE	NE		100%	152	97	240
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01		33%	0.0003	0.0001	0.0005
Tin	7440-31-5	NE	NE	NE	NE	0.18		33%	0.0009	0.0002	0.0020
Vanadium	7440-62-2	NE	NE	NE	NE	0.012		100%	0.003	0.0008	0.004
Zinc	7440-66-6	NE	NE	31	31	0.0657		100%	0.009	0.0064	0.013

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-826S Total Metals 11/2/2012	MW-826S Total Metals 7/16/2013	MW-826S Total Metals 9/14/2017	MW-826S Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-827S Total Metals 10/31/2012	MW-827S-Dup Total Metals 10/31/2012	MW-827S Total Metals 7/16/2013	
Metals (mg/L)																		
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.0002	0.0012 J	0.00015 J	< 0.0002	67%	0.00052	0.00015	0.00120	0.0003 J	< 0.0002	0.00023 J	<
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.045** A(MCL,I,DCL)	**0.037** A(MCL,I,DCL)	**0.029** A(MCL,I,DCL)	**0.023** A(MCL,I,DCL)	100%	0.0370	0.0290	0.0450	**0.007** J A(I)	**0.0069** J A(I)	**0.0088** J A(I)	
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	<
Boron	7440-42-8	NE	NE	NE	NE	NE	0.21	0.24	0.16	0.15 J+	100%	0.20	0.16	0.24	0.17 J	0.15 J	0.13	
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%				< 0.00015	< 0.00015	< 0.00015	<
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0013 J	< 0.0003	< 0.001	< 0.004	33%	0.0009	0.0003	0.0013	0.0013 J	0.0025 J	< 0.0003	<
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	NP	**0.14** A(MCL)	NP	100%	0.1400	0.1400	0.1400	NP	NP	NP	<
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.001 J	0.0019 J B	< 0.0004	< 0.0016	67%	0.0011	0.0004	0.002	0.0021 J B	0.002 J B	0.0033 J B	
Iron	7439-89-6	NE	NE	NE	NE	NE	7.3	5.9	1.3	0.026 J	100%	4.8	1.3	7.3	0.019 J	0.018 J	0.047 J	
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	< 0.0001	0.00017 J	< 0.0001	< 0.0004	33%	0.00012	0.00010	0.00017	< 0.0001	< 0.0001	< 0.0001	<
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.16 B	0.14	0.056	0.051	100%	0.119	0.056	0.160	0.035	0.033	0.023	
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< #######	< #######	< 2E-05	NP	0%				< #######	< #######	< #######	<
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.0015 J	0.002 J	0.00052 J	0.0016 J	100%	0.0013	0.0005	0.0020	0.011 J	0.011 J	0.014 J	
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0025 J	0.00059 J	< 0.00035	< 0.0014	67%	0.0011	0.0004	0.0025	0.0045 J	0.0046 J	0.0048 J	
Potassium	7440-09-7	NE	NE	NE	NE	NE	20	30	15	14	100%	22	15	30	62	59	57	
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0024 J	0.0021 J	< 0.0004	< 0.0016	67%	0.0016	0.0004	0.0024	0.0019 J	0.0015 J	0.0055 B	
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.00015	< 0.00015	< 0.0001	< 0.0001 UJ	0%				< 0.00015	< 0.00015	< 0.00015	<
Sodium	7440-23-5	NE	NE	NE	NE	NE	110	150	45	42	100%	102	45	150	180	170	260	
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.00015	< 0.00015	< 0.0001	< 0.0004	0%				< 0.00015	< 0.00015	0.00082 J	
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.0004	0.00043 J	< 0.00015	< 0.0006	33%	0.0003	0.0002	0.0004	0.00048 J	< 0.0004	0.0025 J	<
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.00260 J	0.00068 J	< 0.0014	< 0.0054	67%	0.002	0.0007	0.003	0.00150 J	< 0.00050	0.00350 J	
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.018 J	0.01 J	0.0065 J	< 0.011	100%	0.012	0.0065	0.018	0.0023 J	0.0027 J	0.01 J	<

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-827S Total Metals 9/14/2017	MW-827S Dissolved Metals 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)												
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0017 U	0.00026 J	50%	0.0006	0.0002	0.0017
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.022** A(MCL,I,DCL)	**0.02** J A(MCL,I,DCL)	100%	0.0112	0.0069	0.0220
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	0.00015	≤ 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.07	0.078 J+	100%	0.13	0.07	0.17
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	0.0001	≤ 0.0004	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.001	≤ 0.004	50%	0.0013	0.0003	0.0025
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	**0.001** R	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.00083 J	≤ 0.0016	100%	0.0021	0.0008	0.0033
Iron	7439-89-6	NE	NE	NE	NE	NE	0.64 J	0.046 J	100%	0.181	0.018	0.64
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.0001	≤ 0.0004	0%			
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.11	0.091	100%	0.0503	0.0230	0.1100
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	*0.00013* U	NP	0%	0.00005	0.00002	0.00013
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.02	0.02 J	100%	0.014	0.011	0.020
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0038 J	0.0026 J	100%	0.0044	0.0038	0.0048
Potassium	7440-09-7	NE	NE	NE	NE	NE	69	58	100%	62	57	69
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	*0.0079* B	≤ 0.0016	100%	0.0042	0.0015	0.0079
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	0.0001	≤ 0.0001 UJ	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	360	46	100%	243	170	360
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.00016 J	≤ 0.0004	50%	0.00032	0.00015	0.00082
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00015	≤ 0.0006	50%	0.0009	0.0002	0.0025
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.0019 J	≤ 0.0054	75%	0.0019	0.0005	0.0035
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0027	≤ 0.011	75%	0.0044	0.0023	0.010

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-828S Total Metals 9/12/2017	MW-828S Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-829S Total Metals 9/12/2017	MW-829S Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-830S Total Metals 9/12/2017	MW-830S DUP Total Metals 9/12/2017	MW-830S Dissolved Metals 9/12/2017	MW-830S DUP Dissolved Metals 9/12/2017
Metals (mg/L)																						
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.00005	< 0.000098 U	0%				< 0.00005	< 0.00011 U	0%				< 0.00005	< 0.00047 U	0.000068 J	< 0.00005
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	< 0.0008	**0.009** A(I)	0%				**0.0046** J A(I)	0.0016 J	100%	0.0046	0.0046	0.0046	< 0.0008	**0.0033** J A(I)	0.0011 J	0.00087 J
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.15	0.25	100%	0.15	0.15	0.15	0.12	0.11 J+	100%	0.12	0.12	0.12	0.42	0.39	0.4	0.42
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.0001	< 0.0001	0%				< 0.0001	< 0.0001	0%				< 0.0001	< 0.0001	< 0.0001	< 0.0001
Chromium	7440-47-3	NE	0.1	150	150	0.042	< 0.001	< 0.001	0%				< 0.001	< 0.001	0%				< 0.001	0.005 J+	< 0.001	< 0.001
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	< 0.001	NP	0%				0.0018 J	NP	100%	0.0018	0.0018	0.0018	< 0.001	< 0.001	NP	NP
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.00084 J	< 0.0004	100%	0.00084	0.00084	0.00084	0.002 J B	< 0.0004	100%	0.002	0.002	0.002	0.0011 J	0.0011 J	< 0.0004	< 0.0004
Iron	7439-89-6	NE	NE	NE	NE	NE	0.38 J	0.240 J	100%	0.38	0.38	0.38	2.7	0.077 J	100%	2.7	2.7	2.7	1.9	1.9	0.052 J	0.059 J
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00018 J	< 0.0001	100%	0.00018	0.00018	0.00018	0.0001 J	< 0.0001	100%	0.0001	0.0001	0.0001	0.00014 J	0.00015 J	< 0.0001	< 0.0001
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.17	0.29	100%	0.17	0.17	0.17	0.42	0.43	100%	0.42	0.42	0.42	0.25	0.25	0.25	0.26
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< 0.000081 U	NP	0%	0.000081	0.000081	0.000081	< 0.000088 U	NP	0%	0.000088	0.000088	0.000088	< 0.00009 U	< 0.000082 U	NP	NP
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	< 0.001 U	0.0015 J	0%	0.001	0.001	0.001	0.013	0.014	100%	0.013	0.013	0.013	< 0.0029 U	0.0046 J	0.0039 J	0.0031 J
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0012 J	0.00064 J	100%	0.0012	0.0012	0.0012	0.0024 J	< 0.00035	100%	0.0024	0.0024	0.0024	0.0019 J	0.0035 J	< 0.00035	< 0.00035
Potassium	7440-09-7	NE	NE	NE	NE	NE	8.2	15 J-	100%	8.2	8.2	8.2	23	23	100%	23	23	23	11	12	11	12
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	< 0.0004	< 0.0004	0%				< 0.0004	< 0.0004	0%				< 0.0004	< 0.0024 U	< 0.0004	< 0.0004
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.0001	< 0.0001	0%				< 0.0001	< 0.0001	0%				< 0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	7440-23-5	NE	NE	NE	NE	NE	6	11 J-	100%	6	6	6	12	13	100%	12	12	12	10	11	11	11
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.0001	< 0.0001	0%				< 0.0001	< 0.0001	0%				< 0.0001	0.00055 J	< 0.0001	< 0.0001
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.00015	0.00027 J	0%				< 0.00015	< 0.00015	0%				< 0.00015	0.00066 J	< 0.00015	< 0.00015
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.0099	0.0055	100%	0.0099	0.0099	0.0099	< 0.0014	< 0.0014	0%				< 0.0014	< 0.0014	< 0.0014	< 0.0014
Zinc	7440-66-6	NE	NE	31	31	0.0657	< 0.0055 U	< 0.0027	0%	0.0055	0.0055	0.0055	< 0.0045 U	< 0.0027	0%	0.0045	0.0045	0.0045	< 0.0068 U	0.2 B	< 0.0027	< 0.0027

Notes:

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Metals (mg/L)										
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0%	0.0003	0.0001	0.0005
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	50%	0.0021	0.0008	0.0033
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	100%	0.405	0.39	0.42
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	50%	0.003	0.001	0.005
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	100%	0.0011	0.0011	0.0011
Iron	7439-89-6	NE	NE	NE	NE	NE	100%	1.9	1.9	1.9
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	100%	0.00015	0.00014	0.00015
Manganese	7439-96-5	NE	NE	NE	NE	NE	100%	0.25	0.25	0.25
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	0%	0.00009	0.000082	0.00009
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	50%	0.0038	0.0029	0.0046
Nickel	7440-2-0	NE	NE	2	2	0.0289	100%	0.0027	0.0019	0.0035
Potassium	7440-09-7	NE	NE	NE	NE	NE	100%	11.5	11	12
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0%	0.0014	0.0004	0.0024
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	100%	10.5	10	11
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	50%	0.0003	0.0001	0.00055
Tin	7440-31-5	NE	NE	NE	NE	0.18	50%	0.00041	0.00015	0.00066
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0%			
Zinc	7440-66-6	NE	NE	31	31	0.0657	50%	0.1034	0.0068	0.2

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-831S Total Metals 9/13/2017	MW-831S Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-832D Total Metals 9/11/2017	MW-832D DUP Total Metals 9/11/2017	MW-832D Dissolved Metals 9/11/2017	MW-832D DUP Dissolved Metals 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-832S Total Metals 9/11/2017	D
Metals (mg/L)																						
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.00047 U	0.00012 J	0%	0.00047	0.00047	0.00047	0.00047 J	0.00052 J	0.00016 J	0.000058 J	100%	0.0005	0.0005	0.0005	0.0019 J	
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.001 J	< 0.0008	100%	0.001	0.001	0.001	**0.0061** J A(I)	**0.0044** J A(I)	**0.0024** J A(I)	**0.0022** J A(I)	100%	0.0053	0.0044	0.0061	< 0.0008	<
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%				< 0.00015	<
Boron	7440-42-8	NE	NE	NE	NE	NE	0.43	0.39	100%	0.43	0.43	0.43	0.26	0.25	0.22	0.21	100%	0.255	0.25	0.26	0.4	
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.0001	< 0.0001	0%				< 0.0001	0.0001 J	< 0.0001	< 0.0001	50%	0.0001	0.0001	0.0001	< 0.0001	<
Chromium	7440-47-3	NE	0.1	150	150	0.042	< 0.0033 U	< 0.001	0%	0.0033	0.0033	0.0033	< 0.0019 U	< 0.0029 U	< 0.001	< 0.001	0%	0.0024	0.0019	0.0029	< 0.0014 U	<
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	< **0.001**	NP	0%				< **0.001**	< **0.001**	NP	NP	0%				< **0.001**	
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0033* J B	< 0.0004	100%	0.0033	0.0033	0.0033	*0.0018* B	*0.0029* B	< 0.0004	< 0.0004	100%	0.0024	0.0018	0.0029	*0.0016* B	<
Iron	7439-89-6	NE	NE	NE	NE	NE	2.9	< 0.009	100%	2.9	2.9	2.9	4.5	5.1	0.029 J	0.021 J	100%	4.8	4.5	5.1	0.82	<
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00012 J	< 0.0001	100%	0.00012	0.00012	0.00012	0.00068 J	*0.0022* B	< 0.0001	< 0.0001	100%	0.0014	0.00068	0.0022	0.00033 J	<
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.83	0.77	100%	0.83	0.83	0.83	0.24 J	0.41 J	0.21 J	0.36 J	100%	0.33	0.24	0.41	0.79	
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< *0.000094* U	NP	0%	0.000094	0.000094	0.000094	< *0.000034* U	< *0.000035* U	NP	NP	0%	0.00003	0.000034	0.00004	< *0.000027* U	
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.031	0.025	100%	0.031	0.031	0.031	0.0059 J	0.0082 J	0.0043 J	0.0081 J	100%	0.0071	0.0059	0.0082	0.019	
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0019 J	< 0.00035	100%	0.0019	0.0019	0.0019	0.0032 J	0.0045 J	0.00036 J	0.00058 J	100%	0.0039	0.0032	0.0045	0.0047 J	
Potassium	7440-09-7	NE	NE	NE	NE	NE	44	40	100%	44	44	44	7.4	7.7	7	7	100%	7.6	7.4	7.7	13	
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	< 0.0046 U	0.00047 J	0%	0.0046	0.0046	0.0046	0.0023 J	0.0019 J	< 0.0004	< 0.0004	100%	0.0021	0.0019	0.0023	0.0034 J	
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.0001	< 0.0001	0%				< 0.0001	< 0.0001	< 0.0001	< 0.0001	0%				< 0.0001	<
Sodium	7440-23-5	NE	NE	NE	NE	NE	160	130	100%	160	160	160	130	130	120	110	100%	130	130	130	19	
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.00026 J	< 0.0001	100%	0.00026	0.00026	0.00026	0.0004 J	0.00033 J	< 0.0001	< 0.0001	100%	0.0004	0.00033	0.0004	0.0017	
Tin	7440-31-5	NE	NE	NE	NE	0.18	< 0.00015	< 0.00015	0%				0.00073 J	0.00046 J	< 0.00015	< 0.00015	100%	0.00060	0.00046	0.00073	0.0022 J	<
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	< 0.0014	< 0.0014	0%				< 0.0014	< 0.0014	< 0.0014	< 0.0014	0%				< 0.0014	<
Zinc	7440-66-6	NE	NE	31	31	0.0657	< 0.0062 U	< 0.0027	0%	0.0062	0.0062	0.0062	< 0.014 U	< 0.021 U	0.0066 J	0.0058 J	0%	0.0175	0.014	0.021	< 0.0081 U	<

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
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[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-832S Dissolved Metals 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)											
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0011 [J]	100%	0.0019	0.0019	0.0019
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.0008	0%			
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.34	100%	0.4	0.4	0.4
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	0.0001	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.001	0%	0.0014	0.0014	0.0014
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	NP	0%			
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.0004	100%	0.0016	0.0016	0.0016
Iron	7439-89-6	NE	NE	NE	NE	NE	0.009	100%	0.82	0.82	0.82
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.0001	100%	0.00033	0.00033	0.00033
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.78	100%	0.79	0.79	0.79
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	NP	0%	0.000027	0.000027	0.000027
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.016	100%	0.019	0.019	0.019
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0016 [J]	100%	0.0047	0.0047	0.0047
Potassium	7440-09-7	NE	NE	NE	NE	NE	13	100%	13	13	13
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.00069 [J]	100%	0.0034	0.0034	0.0034
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	18	100%	19	19	19
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0019 [J]	100%	0.0017	0.0017	0.0017
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00015	100%	0.0022	0.0022	0.0022
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.0014	0%			
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0027	0%	0.0081	0.0081	0.0081

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
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NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
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A(I)=IDEM DQO Exceedance of the Industrial Level
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B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-833S Total Metals 9/11/2017	MW-833S Dissolved Metals 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-834D Total Metals 9/13/2017	MW-834D Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-835D Total Metals 9/13/2017	MW-835D Dissolved Metals 9/13/2017
Metals (mg/L)																				
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.00051 J	0.00016 J	100%	0.00051	0.00051	0.00051	< 0.00026 U	< 0.0002	0%	0.00026	0.00026	0.00026	< 0.00011 U	< 0.00005
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.018** J A(MCL,I,DCL)	**0.017** A(MCL,I,DCL)	100%	0.018	0.018	0.018	< 0.0008	< **0.0032**	0%				< 0.0008	< 0.0008
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	0%				< 0.00015 UJ	< 0.00015	0%				< 0.00015 UJ	< 0.00015
Boron	7440-42-8	NE	NE	NE	NE	NE	0.11	0.09	100%	0.11	0.11	0.11	0.43	0.44	100%	0.43	0.43	0.43	0.47	0.98 J+
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.0001	< 0.0001	0%				< 0.0001	< *0.0004*	0%				< 0.0001	< 0.0001
Chromium	7440-47-3	NE	0.1	150	150	0.042	< 0.0018 U	< 0.001	0%	0.0018	0.0018	0.0018	0.0064 J+	< 0.004	100%	0.0064	0.0064	0.0064	< 0.0018 U	< 0.001
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	< **0.001**	NP	0%				0.0015 J	NP	100%	0.0015	0.0015	0.0015	**0.14** A(MCL)	NP
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0024* B	0.00061 J	100%	0.0024	0.0024	0.0024	*0.0065* J B	*0.0024* J B	100%	0.0065	0.0065	0.0065	0.00092 J	0.00081 J
Iron	7439-89-6	NE	NE	NE	NE	NE	0.69	0.093 J	100%	0.69	0.69	0.69	9.9	0.077 J	100%	9.9	9.9	9.9	2.9	0.071 J
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00083 J	< 0.0001	100%	0.00083	0.00083	0.00083	*0.0034* B	< 0.0004	100%	0.0034	0.0034	0.0034	0.00041 J	0.00018 J
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.31	0.29 J+	100%	0.31	0.31	0.31	0.19	0.14	100%	0.19	0.19	0.19	0.13	0.14
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< *0.000035* U	NP	0%	0.000035	0.000035	0.000035	*0.00032* J+ B	NP	100%	0.00032	0.00032	0.00032	< *0.00014* U	NP
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.017	0.014	100%	0.017	0.017	0.017	0.0084 J+	< 0.0086 U	100%	0.0084	0.0084	0.0084	< 0.0037 U	< 0.0042 U
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0018 J	0.00057 J	100%	0.0018	0.0018	0.0018	0.0034 J	< 0.0014	100%	0.0034	0.0034	0.0034	0.0007 J	0.00067 J
Potassium	7440-09-7	NE	NE	NE	NE	NE	14	14	100%	14	14	14	8.8	8	100%	8.8	8.8	8.8	4.9	5
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	< 0.0004	< 0.0004	0%				< 0.0004	< 0.0016	0%				0.00071 J	< 0.0004
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.0001	< 0.0001	0%				< 0.0001	< *0.0004*	0%				< 0.0001	< 0.0001 UJ
Sodium	7440-23-5	NE	NE	NE	NE	NE	39	38	100%	39	39	39	680	690	100%	680	680	680	190	430
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.0001	< 0.0001	0%				< 0.00032 U	< 0.0004	0%	0.00032	0.00032	0.00032	< 0.00032 U	< 0.0001
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00019 J	0.00084 J	100%	0.00019	0.00019	0.00019	< 0.00015	< 0.0006	0%				< 0.00015	< 0.00015
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	< 0.0014	0.003 J	0%				0.0058 J	< 0.0054	100%	0.0058	0.0058	0.0058	< 0.0014	< 0.0014
Zinc	7440-66-6	NE	NE	31	31	0.0657	< 0.0093 U	< 0.0027	0%	0.0093	0.0093	0.0093	0.024 J	0.026 J	100%	0.024	0.024	0.024	0.0093 J	0.012

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
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TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)										
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0%	0.00011	0.00011	0.00011
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0%			
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	100%	0.47	0.47	0.47
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0%	0.0018	0.0018	0.0018
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	100%	0.1400	0.1400	0.1400
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	100%	0.00092	0.00092	0.00092
Iron	7439-89-6	NE	NE	NE	NE	NE	100%	2.9	2.9	2.9
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	100%	0.00041	0.00041	0.00041
Manganese	7439-96-5	NE	NE	NE	NE	NE	100%	0.13	0.13	0.13
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	0%	0.00014	0.00014	0.00014
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0%	0.0037	0.0037	0.0037
Nickel	7440-2-0	NE	NE	2	2	0.0289	100%	0.0007	0.0007	0.0007
Potassium	7440-09-7	NE	NE	NE	NE	NE	100%	4.9	4.9	4.9
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	100%	0.00071	0.00071	0.00071
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	100%	190	190	190
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0%	0.00032	0.00032	0.00032
Tin	7440-31-5	NE	NE	NE	NE	0.18	0%			
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0%			
Zinc	7440-66-6	NE	NE	31	31	0.0657	100%	0.0093	0.0093	0.0093

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-836S Total Metals 9/13/2017	MW-836S Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-837S Total Metals 9/13/2017	MW-837S DUP Total Metals 9/13/2017	MW-837S Dissolved Metals 9/13/2017	MW-837S DUP Dissolved Metals 9/13/2017	% Detect
Metals (mg/L)																	
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.0046 U	0.0017 J	0%	0.0046	0.0046	0.0046	< 0.0016 U	< 0.0014 U	0.00078 J	0.00078 J	0%
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0082** J A(I)	**0.024** A(MCL,I,DCL)	100%	0.0082	0.0082	0.0082	**0.014** A(MCL,I,DCL)	**0.011** A(MCL,I,DCL)	**0.014** A(MCL,I,DCL)	**0.014** A(MCL,I,DCL)	100%
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	0.00023 J	< 0.00015	100%	0.00023	0.00023	0.00023	< 0.00015	< 0.00015	< 0.00015	< 0.00015	0%
Boron	7440-42-8	NE	NE	NE	NE	NE	0.23 J+	0.22 J+	100%	0.23	0.23	0.23	0.14	0.13	0.15 J+	0.14 J+	100%
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	*0.00032* J B	< 0.0001	100%	0.00032	0.00032	0.00032	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0%
Chromium	7440-47-3	NE	0.1	150	150	0.042	< 0.0043 U	< 0.001	0%	0.0043	0.0043	0.0043	0.0017 J	0.001 J	< 0.001	< 0.001	100%
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	< **0.001**	NP	0%				0.0011 J	< **0.001**	NP	NP	50%
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	*0.0019* J B	< 0.0004	100%	0.0019	0.0019	0.0019	*0.0031* J B	*0.0028* J B	*0.0022* J B	*0.0023* J B	100%
Iron	7439-89-6	NE	NE	NE	NE	NE	1.1	0.850	100%	1.1	1.1	1.1	0.23 J	0.21 J	0.170 J	0.170 J	100%
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	*0.0033* B	< 0.0001	100%	0.0033	0.0033	0.0033	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0%
Manganese	7439-96-5	NE	NE	NE	NE	NE	< 0.0039 U	0.00088 J	0%	0.0039	0.0039	0.0039	0.00066 J	0.00043 J	< 0.00035	< 0.00035	100%
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	*0.00024* B	NP	100%	0.00024	0.00024	0.00024	< *2E-05*	< *2E-05*	NP	NP	0%
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.016	0.035	100%	0.016	0.016	0.016	0.018	0.015	0.015	0.015	100%
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0085	0.0052	100%	0.0085	0.0085	0.0085	0.0019 J	0.0017 J	0.0014 J	0.0014 J	100%
Potassium	7440-09-7	NE	NE	NE	NE	NE	44	42	100%	44	44	44	51	49	47	47	100%
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0039 J	0.0019 J	100%	0.0039	0.0039	0.0039	*0.0088* J+ B	*0.0055* J+ B	0.002 J	0.0022 J	100%
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	*0.00028* J B	< 0.0001	100%	0.00028	0.00028	0.00028	< 0.0001	< 0.0001	< 0.0001 UJ	< 0.0001 UJ	0%
Sodium	7440-23-5	NE	NE	NE	NE	NE	180	170	100%	180	180	180	160	150	130	140	100%
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	< 0.0082 U	< 0.0001	0%	0.0082	0.0082	0.0082	0.00053 J	0.00011 J	< 0.0001	< 0.0001	100%
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0035 J	< 0.00015	100%	0.0035	0.0035	0.0035	0.0006 J	< 0.00015	< 0.00015	< 0.00015	50%
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.011	0.008	100%	0.011	0.011	0.011	*0.062* B	*0.059* B	*0.058* B	*0.059* B	100%
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0055 J	< 0.0027	100%	0.0055	0.0055	0.0055	< 0.0027	< 0.0027	< 0.0027	< 0.0027	0%

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Average	Minimum Detected	Maximum Detected
Metals (mg/L)									
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	0.0015	0.0014	0.0016
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	0.013	0.011	0.014
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.14	0.13	0.14
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0014	0.001	0.0017
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	0.0011	0.001	0.0011
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.0030	0.0028	0.0031
Iron	7439-89-6	NE	NE	NE	NE	NE	0.22	0.21	0.23
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117			
Manganese	7439-96-5	NE	NE	NE	NE	NE	0.00055	0.00043	0.00066
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013			
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.017	0.015	0.018
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0018	0.0017	0.0019
Potassium	7440-09-7	NE	NE	NE	NE	NE	50	49	51
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	0.0072	0.0055	0.0088
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012			
Sodium	7440-23-5	NE	NE	NE	NE	NE	155	150	160
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.00032	0.00011	0.00053
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.00038	0.00015	0.00060
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	0.06050	0.05900	0.06200
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0027	0.0027	0.0027

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4C
Groundwater Sample Laboratory Results - Metals

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-838S Total Metals 9/13/2017	MW-838S Dissolved Metals 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-839S Total Metals 9/12/2017	MW-839S Dissolved Metals 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Metals (mg/L)																		
Antimony	7440-36-0	NE	0.006	0.041	0.041	0.08	< 0.0013 U	< 0.00005	0%	0.0013	0.0013	0.0013	0.0027 J	0.0017 J	100%	0.0027	0.0027	0.0027
Arsenic	7440-38-2	NE	0.01	0.0019	0.01	0.148	**0.0057** A(I)	**0.0022** J A(I)	100%	0.0057	0.0057	0.0057	**0.015** A(MCL,I,DCL)	**0.012** A(MCL,I,DCL)	100%	0.015	0.015	0.015
Beryllium	7440-41-7	NE	0.004	0.2	0.2	0.0036	< 0.00015	< 0.00015	0%				< 0.00015	< 0.00015	0%			
Boron	7440-42-8	NE	NE	NE	NE	NE	0.21	0.19	100%	0.21	0.21	0.21	0.12	0.13 J+	100%	0.12	0.12	0.12
Cadmium	7440-43-9	NE	0.005	0.051	0.051	0.00015	< 0.0001	< 0.0001	0%				< 0.0001	< 0.0001	0%			
Chromium	7440-47-3	NE	0.1	150	150	0.042	0.0028 J	< 0.001	100%	0.0028	0.0028	0.0028	0.0029 J	< 0.001	100%	0.0029	0.0029	0.0029
Chromium, Hexavalent	18540-29-9	NE	0.1	0.31	0.31	NE	< 0.001	NP	0%				0.0035 J	NP	100%	0.0035	0.0035	0.0035
Copper	7440-50-8	NE	1.3	4.1	4.1	0.00158	0.00083 J	< 0.0004	100%	0.00083	0.00083	0.00083	*0.0021* J B	0.00098 J	100%	0.0021	0.0021	0.0021
Iron	7439-89-6	NE	NE	NE	NE	NE	12	0.033 J	100%	12	12	12	0.92 J	0.600	100%	0.92	0.92	0.92
Lead	7439-92-1	NE	0.015	0.042	0.042	0.00117	0.00056 J	< 0.0001	100%	0.00056	0.00056	0.00056	*0.0016* B	< 0.0001	100%	0.0016	0.0016	0.0016
Manganese	7439-96-5	NE	NE	NE	NE	NE	1.5	1.4	100%	1.5	1.5	1.5	0.011	0.0015 J	100%	0.011	0.011	0.011
Mercury	7439-97-6	69,000	0.002	0.031	0.031	0.0000013	< *2E-05*	NP	0%				< *0.000093* U	NP	0%	0.000093	0.000093	0.000093
Molybdenum	7439-98-7	NE	NE	NE	NE	NE	0.005	0.001 J	100%	0.005	0.005	0.005	0.012	0.0078	100%	0.012	0.012	0.012
Nickel	7440-2-0	NE	NE	2	2	0.0289	0.0015 J	0.00045 J	100%	0.0015	0.0015	0.0015	0.0019 J	0.0014 J	100%	0.0019	0.0019	0.0019
Potassium	7440-09-7	NE	NE	NE	NE	NE	16	13	100%	16	16	16	25	22	100%	25	25	25
Selenium	7782-49-2	NE	0.05	0.51	0.51	0.005	*0.0094* J+ B	< 0.0004	100%	0.0094	0.0094	0.0094	0.0045 J	0.0018 J	100%	0.0045	0.0045	0.0045
Silver	7440-22-4	NE	NE	0.51	0.51	0.00012	< 0.0001 UJ	< 0.0001	0%				< 0.0001	< 0.0001	0%			
Sodium	7440-23-5	NE	NE	NE	NE	NE	86	66	100%	86	86	86	27	26	100%	27	27	27
Thallium	7440-28-0	NE	0.002	0.0072	0.0072	0.01	0.0018	< 0.0001	100%	0.0018	0.0018	0.0018	0.0014	< 0.0001	100%	0.0014	0.0014	0.0014
Tin	7440-31-5	NE	NE	NE	NE	0.18	0.0025 J	< 0.00015	100%	0.0025	0.0025	0.0025	0.002 J	< 0.00015	100%	0.002	0.002	0.002
Vanadium	7440-62-2	NE	NE	NE	NE	0.012	< 0.0014	< 0.0014	0%				0.0077	0.0078	100%	0.0077	0.0077	0.0077
Zinc	7440-66-6	NE	NE	31	31	0.0657	0.0059 J	0.0034 J	100%	0.0059	0.0059	0.0059	0.011	< 0.0027	100%	0.011	0.011	0.011

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.
[B] EPA - US EPA Region V Ecological Screening Levels August 2003.
[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.
[C] IDEM = Bromodichloromethane.
[D] Listed by EPA as Methane [bis (2-chloroethoxy)].
[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].
[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.
[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample
[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.
[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.
[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.
NP = Not Performed
A(GW)=IDEM DQO Exceedance of the GW Solubility
A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level
A(I)=IDEM DQO Exceedance of the Industrial Level
A(DCL)=IDEM DQO Exceedance of the Default Closure Level
B=EPA Ecological Screening Level Exceedance
[1] Percent detection, average, minimum detected, and maximum detected values calculated using Total Metals resu

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-801D 10/29/2012	MW-801D Dup 10/29/2012	MW-801D 7/16/2013	MW-801D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-801S 10/29/2012	MW-801S 7/16/2013	MW-801S 9/13/2017	% Detect	Average
Other (mg/L)																			
Alkalinity	None1	NE	NE	NE	NE	NE	450	400	560	450	100%	465	400	560	400	< 2	400	67%	267
Ammonia	7664-41-7	NE	NE	NE	NE	NE	14	14	17	11	100%	14	11	17	2.4	2.9	2.6	100%	3
Hardness	None2	NE	NE	NE	NE	NE				620	100%	620	620	620			270	100%	270
Sulfide	18496-25-8	NE	NE	NE	NE	NE	< 0.022	< 0.022	< 0.04	< 0.015	0%				3.2	1.3	1.6	100%	2.0
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.061* B	*0.062* B	*0.049* B	*0.052* B	100%	0.056	0.049	0.062		*0.93* B	*0.89* B	100%	0.91
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	< 0.0050	< 0.0050	< 0.0060	0.0062 J	25%	0.0056	0.0050	0.0062	0.15	0.11	*0.3* B	100%	0.19
Total Organic Carbon	None3	NE	NE	NE	NE	NE	7.2	7.3	7.2	9.6	100%	7.8	7.2	9.6	17	7	8.3	100%	11
Chloride	16887-00-6	NE	NE	NE	NE	NE	150	150	250	220	100%	193	150	250	650	1000	170	100%	607
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	21	21	23	39	100%	26	21	39	52	34	54	100%	47
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*8.6* J B	*9.2* J B	*2.4* J B	*4.2* J B	100%	6.1	2.4	9.2	*190* B	*240* B	*86* B	100%	172

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.

[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.

[UJ] Laboratory flag indicating analyte was analyzed for, but not detected. The value is approximate and may be inaccurate or imprecise.

A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level

A(I)=IDEM DQO Exceedance of the Industrial Level

A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected
Other (mg/L)								
Alkalinity	None1	NE	NE	NE	NE	NE	2	400
Ammonia	7664-41-7	NE	NE	NE	NE	NE	2	3
Hardness	None2	NE	NE	NE	NE	NE	270	270
Sulfide	18496-25-8	NE	NE	NE	NE	NE	1.3	3.2
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.89	0.93
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.11	0.30
Total Organic Carbon	None3	NE	NE	NE	NE	NE	7	17
Chloride	16887-00-6	NE	NE	NE	NE	NE	170	1000
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	34	54
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	86	240

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.

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A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-802S 10/31/2012	MW-802S-Dup 10/31/2012	MW-802S 7/16/2013	% Detect	Average	Minimum Detected	Maximum Detected	MW-803D 10/31/2012	MW-803D 7/17/2013	MW-803D 9/13/2017	% Detect	Average	Minimum Detected
Other (mg/L)																			
Alkalinity	None1	NE	NE	NE	NE	NE	400	400	360	100%	386.67	360	400	2900	2900	3200	100%	3000	2900
Ammonia	7664-41-7	NE	NE	NE	NE	NE	1	3.6	0.15	100%	1.58333	0.15	3.6	990	950	750	100%	897	750
Hardness	None2	NE	NE	NE	NE	NE										930	100%	930	930
Sulfide	18496-25-8	NE	NE	NE	NE	NE	< 0.022	< 0.022	< 0.04	0%				1.1	8.1	19	100%	9.4	1.1
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.096* B	*0.11* B	*0.011* B	100%	0.07233	0.011	0.11	*0.68* B	*0.49* B	*0.43* B	100%	0.53	0.43
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	< 0.0050	< 0.0050	0.0075 J	33%	0.00583	0.005	0.0075	*3.9* B	*5.1* B	*15* B	100%	8.0	3.9
Total Organic Carbon	None3	NE	NE	NE	NE	NE	7.7	7.6	4.1	100%	6.47	4.1	7.7	150	160	260	100%	190	150
Chloride	16887-00-6	NE	NE	NE	NE	NE	580	570	250	100%	467	250	580	910	880	820	100%	870	820
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	61	68	16	100%	48.3	16	68	690	700	930	100%	773	690
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*510* B	*570* B	*330* B	100%	470	330	570	*1600* B	*1200* B	*390* B	100%	1063	390

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected	MW-803M 10/31/2012	MW-803M 7/17/2013	MW-803M 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)														
Alkalinity	None1	NE	NE	NE	NE	NE	3200	450	440	300	100%	397	300	450
Ammonia	7664-41-7	NE	NE	NE	NE	NE	990	83	110	46	100%	80	46	110
Hardness	None2	NE	NE	NE	NE	NE	930			180	100%	180	180	180
Sulfide	18496-25-8	NE	NE	NE	NE	NE	19	1.8	3	0.24	100%	1.68	0.24	3.00
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.68	*0.12* B	*0.069* B	*0.0052* B	100%	0.0647	0.0052	0.1200
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	15.0	0.11	0.13	0.047	100%	0.10	0.05	0.13
Total Organic Carbon	None3	NE	NE	NE	NE	NE	260	20	12	7.9	100%	13	8	20
Chloride	16887-00-6	NE	NE	NE	NE	NE	910	60	90	96	100%	82	60	96
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	930	66	52	< 9.3	67%	42	9	66
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	1600	*190* B	*94* B	*15* B	100%	100	15	190

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-803S 10/31/2012	MW-803S 7/17/2013	MW-803S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-804S 10/29/2012	MW-804S 7/16/2013	MW-804S 9/13/2017	% Detect	Average
Other (mg/L)																		
Alkalinity	None1	NE	NE	NE	NE	NE	400	300	350	100%	350	300	400	250	380	400	100%	343
Ammonia	7664-41-7	NE	NE	NE	NE	NE	8.2	9.4	8.3	100%	8.6	8.2	9.4	11	6.6	1.5	100%	6.4
Hardness	None2	NE	NE	NE	NE	NE			730	100%	730	730	730			490	100%	490
Sulfide	18496-25-8	NE	NE	NE	NE	NE	23	11	8.3	100%	14.1	8.3	23.0	< 0.022	< 0.04	< 0.015	0%	
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*1.1* B	*0.99* B	*1.5* B	100%	1.20	0.99	1.50	*0.13* B	*0.12* B	*0.027* B	100%	0.09
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.0210	0.0150	0.032	100%	0.023	0.015	0.032	< 0.0050	< 0.0060	0.15 J-	33%	0.0537
Total Organic Carbon	None3	NE	NE	NE	NE	NE	9.5	8.1	7.8	100%	8.5	7.8	9.5	6.3	5.9	6.2	100%	6.1
Chloride	16887-00-6	NE	NE	NE	NE	NE	83	110	85	100%	93	83	110	24	38	15	100%	26
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	94	56	52	100%	67	52	94	39	14	20	100%	24
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*440* B	*490* B	*340* B	100%	423	340	490	*200* B	*260* B	*180* B	100%	213

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected	MW-805D 10/31/2012	MW-805D 7/16/2013	MW-805D-Dup 7/16/2013	MW-805D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)																
Alkalinity	None1	NE	NE	NE	NE	NE	250	400	600	600	600	800	100%	650	600	800
Ammonia	7664-41-7	NE	NE	NE	NE	NE	1.5	11.0	23	2.6	2.4	39	100%	16.8	2.4	39
Hardness	None2	NE	NE	NE	NE	NE	490	490				660	100%	660	660	660
Sulfide	18496-25-8	NE	NE	NE	NE	NE			0.03 J	< 0.04	< 0.04	< 0.015	25%	0.031	0.015	0.04
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.03	0.13	*0.19* B	*0.047* B	*0.14* B	*0.2* B	100%	0.144	0.047	0.2
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.0050	0.15	< 0.0050	< 0.0060	< 0.0060	0.023	25%	0.010	0.005	0.023
Total Organic Carbon	None3	NE	NE	NE	NE	NE	5.9	6.3	15	12	14	40	100%	20	12	40
Chloride	16887-00-6	NE	NE	NE	NE	NE	15	38	150	350	320	130	100%	238	130	350
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	14	39	54	50	43	130	100%	69	43	130
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	180	260	*5.9* J B	*68* B	*45* B	*3.7* J B	100%	30.7	3.7	68.0

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

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B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-805S 10/31/2012	MW-805S 7/17/2013	MW-805S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-806D 10/31/2012	MW-806D 7/17/2013	MW-806D 9/14/2017	% Detect	Average	Minimum Detected
Other (mg/L)																			
Alkalinity	None1	NE	NE	NE	NE	NE	600	600	250	100%	483	250	600	2000	1400	1100	100%	1500	1100
Ammonia	7664-41-7	NE	NE	NE	NE	NE	3.7	5.2	1.7	100%	3.5	1.7	5.2	410	460	340	100%	403.3	340.0
Hardness	None2	NE	NE	NE	NE	NE			190	100%	190	190	190			1300	100%	1300	1300
Sulfide	18496-25-8	NE	NE	NE	NE	NE	0.53	< 0.04	0.042 J	67%	0.204	0.040	0.53	0.42	1.2	< 0.015	67%	0.545	0.015
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.0045 J	*0.048* B	*0.062* B	100%	0.0382	0.0045	0.062	*0.78* B	*0.14* B	*0.17* B	100%	0.3633	0.1400
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	< 0.0050	0.0190	0.098	67%	0.0407	0.0050	0.098	0.0780	0.0180	0.027	100%	0.0410	0.0180
Total Organic Carbon	None3	NE	NE	NE	NE	NE	7.6	6.4	8.3	100%	7.4	6.4	8.3	74	53	48	100%	58.3	48.0
Chloride	16887-00-6	NE	NE	NE	NE	NE	270	680	16	100%	322	16	680	410	420	340	100%	390	340
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	43	28	13	100%	28	13	43	390	220	170	100%	260	170
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*39* B	*91* B	*18* B	100%	49	18	91	*1800* B	*2500* B	*2400* B	100%	2233	1800

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected	MW-806S 10/31/2012	MW-806S 7/16/2013	MW-806S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)														
Alkalinity	None1	NE	NE	NE	NE	NE	2000	300	440	150	100%	297	150	440
Ammonia	7664-41-7	NE	NE	NE	NE	NE	460.0	1.9	0.86	2.9	100%	1.9	0.9	2.9
Hardness	None2	NE	NE	NE	NE	NE	1300			460	100%	460	460	460
Sulfide	18496-25-8	NE	NE	NE	NE	NE	1.20	0.028 [J]	< 0.04	< 0.015	33%	0.028	0.015	0.04
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.780	*0.056* B	*0.074* B	*0.046* B	100%	0.0587	0.0460	0.074
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.078	< 0.0050	< 0.0060	0.093	33%	0.0347	0.0050	0.093
Total Organic Carbon	None3	NE	NE	NE	NE	NE	74.0	4.8	4.3	5.5	100%	4.9	4.3	5.5
Chloride	16887-00-6	NE	NE	NE	NE	NE	420	49	320	120	100%	163	49	320
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	390	16	14	24	100%	18	14	24
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	2500	*40* B	*360* B	*190* B	100%	197	40	360

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-807D 11/1/2012	MW-807D 7/18/2013	MW-807D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-807S 11/1/2012	MW-807S 7/16/2013	MW-807S-Dup 7/16/2013	MW-807S 9/13/2017
Other (mg/L)																	
Alkalinity	None1	NE	NE	NE	NE	NE	5000	5000	3900	100%	4633	3900	5000	300	210	190	450
Ammonia	7664-41-7	NE	NE	NE	NE	NE	650	640	620	100%	636.7	620.0	650.0	1.8	1.7	1.6	2.6
Hardness	None2	NE	NE	NE	NE	NE			4.1	100%	4.1	4.1	4.1				510
Sulfide	18496-25-8	NE	NE	NE	NE	NE	11	2.4	< 0.015	67%	4.472	0.015	11.00	2.2	1.8	1.1	1.1
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*6* B	*5.4* B	*1.8* B	100%	4.4000	1.8000	6.000	*2.2* B	*1.5* B	*2.4* B	*3.6* B
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	*160* B	*150* B	*110* B	100%	140.0000	110.0000	160.000	0.0430	< 0.0060	< 0.0060	0.15
Total Organic Carbon	None3	NE	NE	NE	NE	NE	330	350	250	100%	310.0	250.0	350.0	13	12	12	16
Chloride	16887-00-6	NE	NE	NE	NE	NE	1500	1200	10	100%	903	10	1500	44	86	84	16
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	1500	1200	1000	100%	1233	1000	1500	55	42	42	73
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*83* B	*81* B	*42* B	100%	69	42	83	*110* B	*130* B	*130* B	*150* B

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)										
Alkalinity	None1	NE	NE	NE	NE	NE	100%	288	190	450
Ammonia	7664-41-7	NE	NE	NE	NE	NE	100%	1.9	1.6	2.6
Hardness	None2	NE	NE	NE	NE	NE	100%	510	510	510
Sulfide	18496-25-8	NE	NE	NE	NE	NE	100%	1.6	1.1	2.2
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	100%	2.4	1.5	3.6
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	50%	0.0513	0.0060	0.15
Total Organic Carbon	None3	NE	NE	NE	NE	NE	100%	13	12	16
Chloride	16887-00-6	NE	NE	NE	NE	NE	100%	58	16	86
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	100%	53	42	73
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	100%	130	110	150

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

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A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level

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B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-808D 11/2/2012	MW-808D 7/17/2013	MW-808D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-808S 11/2/2012	MW-808S 7/17/2013	MW-808S 9/14/2017	% Detect
Other (mg/L)																	
Alkalinity	None1	NE	NE	NE	NE	NE	2000	2500	2100	100%	2200	2000	2500	500	580	650	100%
Ammonia	7664-41-7	NE	NE	NE	NE	NE	370	320	290	100%	327	290	370	5.5	0.65	4.0	100%
Hardness	None2	NE	NE	NE	NE	NE			5800	100%	5800	5800	5800			2000	100%
Sulfide	18496-25-8	NE	NE	NE	NE	NE	16	13	33	100%	21	13	33	0.19	8.7	84	100%
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*4.4* B	*4.6* B	*5.3* B	100%	4.77	4.40	5.30	*0.37* B	*0.31* B	*0.38* B	100%
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	*0.4400* B	*420* B	*300* B	100%	240.15	0.44	420	0.1300	*23* B	*24* B	100%
Total Organic Carbon	None3	NE	NE	NE	NE	NE	1100	1000	770	100%	956.7	770	1100	200	75	74	100%
Chloride	16887-00-6	NE	NE	NE	NE	NE	300	320	50	100%	223	50	320	4	5	5.5	100%
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	3000	1300	2000	100%	2100	1300	3000	1300	260	370	100%
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*9200* B	*8700* B	*5800* B	100%	7900	5800	9200	*1600* B	*730* B	*1200* B	100%

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Average	Minimum Detected	Maximum Detected
Other (mg/L)									
Alkalinity	None1	NE	NE	NE	NE	NE	577	500	650
Ammonia	7664-41-7	NE	NE	NE	NE	NE	3.38	0.65	5.5
Hardness	None2	NE	NE	NE	NE	NE	2000	2000	2000
Sulfide	18496-25-8	NE	NE	NE	NE	NE	30.96	0.19	84
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.35	0.31	0.38
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	15.71	0.13	24
Total Organic Carbon	None3	NE	NE	NE	NE	NE	116.3	74	200
Chloride	16887-00-6	NE	NE	NE	NE	NE	4.8	4.0	5.5
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	643	260	1300
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	1177	730	1600

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-809D 11/2/2012	MW-809D 7/18/2013	MW-809D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-809M 11/2/2012	MW-809M 7/18/2013	MW-809M-Dup 7/18/2013	MW-80 9/14/20
Other (mg/L)																	
Alkalinity	None1	NE	NE	NE	NE	NE	3400	4200	4700	100%	4100	3400	4700	450	820	330	750
Ammonia	7664-41-7	NE	NE	NE	NE	NE	130	360	470	100%	320	130	470	120	120	120	110
Hardness	None2	NE	NE	NE	NE	NE			4100	100%	4100	4100	4100				360
Sulfide	18496-25-8	NE	NE	NE	NE	NE	350	170	130	100%	217	130	350	1.8	3.7	3.6	0.032 J
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*33* B	*5* B	*15* B	100%	18	5	33	*0.52* B	*0.73* B	*0.66* B	*0.33*
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	*88* B	*170* B	*38* B	100%	99	38	170	*0.9800* B	*1.7* B	*3.0* B	*0.47*
Total Organic Carbon	None3	NE	NE	NE	NE	NE	580	890	49	100%	506	49	890	20	26	26	16
Chloride	16887-00-6	NE	NE	NE	NE	NE	3.5	2.5	4.0	100%	3.3	2.5	4.0	90	150	140	130
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	2400	2500	2100	100%	2333	2100	2500	91	140	140	66
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*3200* B	*3800* B	*3200* B	100%	3400	3200	3800	*340* B	*170* B	*180* B	*46*

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

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[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	M 17	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)											
Alkalinity	None1	NE	NE	NE	NE	NE		100%	588	330	820
Ammonia	7664-41-7	NE	NE	NE	NE	NE		100%	118	110	120
Hardness	None2	NE	NE	NE	NE	NE		100%	360	360	360
Sulfide	18496-25-8	NE	NE	NE	NE	NE		100%	2	0.032	3.7
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	B	100%	1	0.33	0.73
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	B	100%	1.54	0.47	3
Total Organic Carbon	None3	NE	NE	NE	NE	NE		100%	22	16	26
Chloride	16887-00-6	NE	NE	NE	NE	NE		100%	128	90	150
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE		100%	109	66	140
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	B	100%	184	46	340

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-809S 11/2/2012	MW-809S 7/15/2013	MW-809S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-810D 10/31/2012	MW-810D 7/16/2013	MW-810D 9/14/2017	% Detect	Average	Minimum Detected
Other (mg/L)																			
Alkalinity	None1	NE	NE	NE	NE	NE	250	740	700	100%	563	250	740	1400	1300	1100	100%	1267	1100
Ammonia	7664-41-7	NE	NE	NE	NE	NE	9.6	7.5	28	100%	15	7.5	28	130	120	86	100%	112	86
Hardness	None2	NE	NE	NE	NE	NE			950	100%	950	950	950			1800	100%	1800	1800
Sulfide	18496-25-8	NE	NE	NE	NE	NE	1.5	0.29	0.31	100%	0.70	0.29	1.5	0.33	8	< 0.015	67%	2.8	0.015
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.34* B	*0.19* B	*0.13* B	100%	0.22	0.13	0.34	*0.19* B	*0.26* B	*0.29* B	100%	0.25	0.19
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.0180	< 0.0060	*0.18* B	67%	0.068	0.006	0.18	0.0410	< 0.0060	< 0.006	33%	0.0177	0.0060
Total Organic Carbon	None3	NE	NE	NE	NE	NE	14	16	11	100%	13.7	11	16	220	180	120	100%	173	120
Chloride	16887-00-6	NE	NE	NE	NE	NE	62	110	200	100%	124	62	200	400	450	15	100%	288.3	15
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	48	100	49	100%	66	48	100	980	750	710	100%	813	710
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*700* B	*1100* B	*310* B	100%	703	310	1100	*4200* B	< 0.81	*1900* B	67%	2034	0.81

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected	MW-810S 10/31/2012	MW-810S 7/16/2013	MW-810S 9/14/2017	MW-810S DUP 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)															
Alkalinity	None1	NE	NE	NE	NE	NE	1400	200	220	250	250	100%	230	200	250
Ammonia	7664-41-7	NE	NE	NE	NE	NE	130	2.4	0.79	0.99	0.8	100%	1.25	0.79	2.4
Hardness	None2	NE	NE	NE	NE	NE	1800			260	310	100%	285	260	310
Sulfide	18496-25-8	NE	NE	NE	NE	NE	8	< 0.022	< 0.04	< 0.015	< 0.015	0%			
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.29	*0.049* B	*0.031* B	*0.034* B	*0.032* B	100%	0.037	0.031	0.049
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.0410	< 0.0050	< 0.0060	0.01 J	0.038 J	50%	0.0148	0.005	0.038
Total Organic Carbon	None3	NE	NE	NE	NE	NE	220	4.5	3.3	2.4	2.6	100%	3.2	2.4	4.5
Chloride	16887-00-6	NE	NE	NE	NE	NE	450.0	160	300	480	400	100%	335	160	480
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	980	21	11	21 J	13 J	100%	16.5	11	21
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	4200	*170* B	*160* B	*90* B	*99* B	100%	129.75	90	170

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-811S 10/29/2012	MW-811S 7/16/2013	MW-811S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-812S 10/31/2012	MW-812S 7/16/2013	MW-812S 9/13/2017	% Detect	Average	Minimum Detected
Other (mg/L)																			
Alkalinity	None1	NE	NE	NE	NE	NE	900	2000	2200	100%	1700	900	2200	300	250	200	100%	250	200
Ammonia	7664-41-7	NE	NE	NE	NE	NE	3	0.96	3.1	100%	2.4	1.0	3.1	9.2	10	7.1	100%	8.8	7.1
Hardness	None2	NE	NE	NE	NE	NE			2000	100%	2000	2000	2000			310	100%	310	310
Sulfide	18496-25-8	NE	NE	NE	NE	NE	0.43	0.12	< 0.015	67%	0.19	0.015	0.43	0.99	0.27	< 0.015	67%	0.43	0.015
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.0053* B	*0.025* B	*0.01* J- B	100%	0.013	0.005	0.025	*0.1* B	*0.086* B	*0.054* B	100%	0.08	0.054
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.0180	0.0580	*0.3* B	100%	0.125	0.018	0.3	0.0310	< 0.0060	0.051 J+	67%	0.029	0.006
Total Organic Carbon	None3	NE	NE	NE	NE	NE	8.1	6.7	9.9	100%	8.2	6.7	9.9	11	8.8	7.3	100%	9.0	7.3
Chloride	16887-00-6	NE	NE	NE	NE	NE	1100	1300	720	100%	1040	720	1300	240	380	84	100%	235	84
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	54	34	68	100%	52	34	68	52	34	24	100%	37	24
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*120* B	*18* B	*13* B	100%	50	13	120	*120* B	*160* B	*84* B	100%	121	84

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

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[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected	MW-813S 10/31/2012	MW-813S 7/15/2013	MW-813S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)														
Alkalinity	None1	NE	NE	NE	NE	NE	300	300	220	150	100%	223	150	300
Ammonia	7664-41-7	NE	NE	NE	NE	NE	10	4.4	5.6	2.5	100%	4.2	2.5	5.6
Hardness	None2	NE	NE	NE	NE	NE	310			220	100%	220	220	220
Sulfide	18496-25-8	NE	NE	NE	NE	NE	0.99	0.52	0.092	0.06	100%	0.22	0.060	0.52
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.1	*0.5* B	*0.2* B	*2.6* B	100%	1.1	0.2	2.6
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.051	< 0.0050	< 0.0060	0.026 J+	33%	0.012	0.005	0.026
Total Organic Carbon	None3	NE	NE	NE	NE	NE	11	5.6	9.1	5.8	100%	6.8	5.6	9.1
Chloride	16887-00-6	NE	NE	NE	NE	NE	380	350	300	62	100%	237	62	350
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	52	25	16	35	100%	25	16	35
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	160	*310* B	*270* B	*130* B	100%	237	130	310

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

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[J+] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased high.

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A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-814S 10/29/2012	MW-814S 7/16/2013	MW-814S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-815D 10/29/2012	MW-815D 7/15/2013	MW-815D 9/11/2017	% Detect	Average	Minimum Detected
Other (mg/L)																			
Alkalinity	None1	NE	NE	NE	NE	NE	200	200	150	100%	183	150	200	350	680	650	100%	560	350
Ammonia	7664-41-7	NE	NE	NE	NE	NE	9.1	3	1.9	100%	4.7	1.9	9.1	240	< 0.098	240	67%	160	0.10
Hardness	None2	NE	NE	NE	NE	NE			140	100%	140	140	140			480	100%	480	480
Sulfide	18496-25-8	NE	NE	NE	NE	NE	< 0.022	< 0.04	< 0.015	0%				0.028 J	0.062	< 0.015	67%	0.035	0.015
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.058* B	*0.049* B	*0.12* B	100%	0.076	0.049	0.12	*0.23* B	*0.2* B	*0.13* B	100%	0.19	0.13
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	< 0.0050	0.0110	0.01	67%	0.009	0.005	0.011	< 0.0050	< 0.0060	0.061	33%	0.024	0.005
Total Organic Carbon	None3	NE	NE	NE	NE	NE	7.8	4	6.9	100%	6.2	4.0	7.8	24	16	20	100%	20	16
Chloride	16887-00-6	NE	NE	NE	NE	NE	500	350	260	100%	370	260	500	600	500	540	100%	547	500
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	68	8.0 J	31	100%	36	8.0	68	130	130	69	100%	110	69
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*140* B	*180* B	*130* B	100%	150	130	180	*1500* B	*840* B	*500* B	100%	947	500

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected	MW-815S 10/29/2012	MW-815S 7/17/2013	MW-815S 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)														
Alkalinity	None1	NE	NE	NE	NE	NE	680	< 2	270	250	67%	174	2	270
Ammonia	7664-41-7	NE	NE	NE	NE	NE	240	2.1	1.7	1.5	100%	1.8	1.5	2.1
Hardness	None2	NE	NE	NE	NE	NE	480			500	100%	500	500	500
Sulfide	18496-25-8	NE	NE	NE	NE	NE	0.062	0.024 J	< 0.04	< 0.015	33%	0.026	0.015	0.040
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.23	*0.14* B	*0.14* B	*0.085* B	100%	0.12	0.085	0.14
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.061	< 0.0050	< 0.0060	0.028	33%	0.013	0.005	0.028
Total Organic Carbon	None3	NE	NE	NE	NE	NE	24	4.8	4.2	5.6	100%	4.9	4.2	5.6
Chloride	16887-00-6	NE	NE	NE	NE	NE	600	60	300	45	100%	135	45	300
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	130	9.6 J	< 7.8	14	67%	10	7.8	14
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	1500	*880* B	*580* B	*280* B	100%	580	280	880

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-816D 11/1/2012	MW-816D 7/17/2013	MW-816D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-816S 11/1/2012	MW-816S 7/16/2013	MW-816S 9/12/2017	% Detect	Average
Other (mg/L)																		
Alkalinity	None1	NE	NE	NE	NE	NE	2400	2800	2200	100%	2467	2200	2800	150	320	300	100%	257
Ammonia	7664-41-7	NE	NE	NE	NE	NE	550	760	660	100%	657	550	760	7.7	7.6	5.5 J-	100%	6.9
Hardness	None2	NE	NE	NE	NE	NE			65	100%	65	65	65			420	100%	420
Sulfide	18496-25-8	NE	NE	NE	NE	NE	16	3.2	< 0.015	67%	6.4	0.015	16	3.2	3.1	2.6	100%	3.0
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*1.8* B	*1.9* B	*0.97* B	100%	1.56	0.97	1.9	*0.47* B	*0.15* B	*0.86* B	100%	0.49
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	*1.1* B	*0.93* B	*0.9* B	100%	0.977	0.90	1.1	*0.19* B	*0.33* B	*0.26* B	100%	0.26
Total Organic Carbon	None3	NE	NE	NE	NE	NE	88	83	62	100%	78	62	88	13	8.8	14	100%	11.9
Chloride	16887-00-6	NE	NE	NE	NE	NE	390	360	250	100%	333	250	390	220	250	3.5	100%	158
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	450	440	290	100%	393	290	450	44	38	66	100%	49
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*210* B	*140* B	*48* B	100%	133	48	210	*150* B	*130* B	*34* B	100%	105

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

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[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

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A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected	MW-817D 11/1/2012	MW-817D Dup 11/1/2012	MW-817D 7/17/2013	MW-817D 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)																
Alkalinity	None1	NE	NE	NE	NE	NE	150	320	2600	2800	2600	2600	100%	2650	2600	2800
Ammonia	7664-41-7	NE	NE	NE	NE	NE	5.5	7.7	710	810	730	800	100%	763	710	810
Hardness	None2	NE	NE	NE	NE	NE	420	420				1800	100%	1800	1800	1800
Sulfide	18496-25-8	NE	NE	NE	NE	NE	2.6	3.2	6.7	3.8	1.8	< 0.015	75%	3.1	0.015	6.7
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.15	0.9	*0.59* B	*0.52* B	*0.48* B	*0.39* B	100%	0.50	0.39	0.59
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.19	0.3	*0.48* B	*0.52* B	*1.0* B	*0.44* B	100%	0.61	0.44	1.0
Total Organic Carbon	None3	NE	NE	NE	NE	NE	8.8	14	260	240	150	150	100%	200	150	260
Chloride	16887-00-6	NE	NE	NE	NE	NE	3.5	250	980	900	800	640	100%	830	640	980
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	38	66	890	920	720	640	100%	793	640	920
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	34	150	*3000* B	*3000* B	*2300* B	*1900* B	100%	2550	1900	3000

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-817S 11/1/2012	MW-817S 7/17/2013	MW-817S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-818S 11/1/2012	MW-818S 7/17/2013	MW-818S 9/14/2017	MW-818S DUP 9/14/2017
Other (mg/L)																	
Alkalinity	None1	NE	NE	NE	NE	NE	450	200	200	100%	283	200	450	250	580	200	160
Ammonia	7664-41-7	NE	NE	NE	NE	NE	5.7	2.2	2.5	100%	3.5	2.2	5.7	9.7	7.3	2.0	2.1
Hardness	None2	NE	NE	NE	NE	NE			370	100%	370	370	370			220	230
Sulfide	18496-25-8	NE	NE	NE	NE	NE	8	0.044 J	0.17	100%	2.7	0.044	8.0	2	0.94	0.12 J	0.076 J
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.51* B	*0.11* B	*3.3* B	100%	1.31	0.11	3.3	*0.39* B	*1.9* B	*0.58* B	*0.55* B
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.03	0.012	0.0069 J	100%	0.016	0.0069	0.03	0.0260	< 0.0120	*0.24* J B	0.13 J
Total Organic Carbon	None3	NE	NE	NE	NE	NE	14	11	6.7	100%	10.6	6.7	14	13	17	13	13
Chloride	16887-00-6	NE	NE	NE	NE	NE	150	250	380	100%	260	150	380	26	38	28	27
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	57	45	33	100%	45	33	57	39	45	47	47
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*200* B	*250* B	*74* B	100%	175	74	250	*130* B	*280* B	*100* B	*88* B

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	% Detect	Average	Minimum Detected	Maximum Detected	MW-819D 11/2/2012	MW-819D 7/17/2013	MW-819D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)																	
Alkalinity	None1	NE	NE	NE	NE	NE	100%	298	160	580	900	990	1200	100%	1030	900	1200
Ammonia	7664-41-7	NE	NE	NE	NE	NE	100%	5.3	2.0	9.7	14	14	13	100%	14	13	14
Hardness	None2	NE	NE	NE	NE	NE	100%	225	220	230			590	100%	590	590	590
Sulfide	18496-25-8	NE	NE	NE	NE	NE	100%	0.78	0.076	2.0	0.19	< 0.04	0.029 J	67%	0.09	0.029	0.19
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	100%	0.86	0.39	1.9	*0.048* B	*0.062* B	*0.089* B	100%	0.066	0.048	0.089
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	75%	0.10	0.012	0.24	0.0670	0.0440	0.041	100%	0.051	0.041	0.067
Total Organic Carbon	None3	NE	NE	NE	NE	NE	100%	14	13	17	130	120	110	100%	120	110	130
Chloride	16887-00-6	NE	NE	NE	NE	NE	100%	30	26	38	80	110	54	100%	81	54	110
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	100%	45	39	47	580	470	400	100%	483	400	580
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	100%	150	88	280	*16* B	*8.4* J B	*6.0* J B	100%	10	6.0	16

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-819S 11/2/2012	MW-819S 7/17/2013	MW-819S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-820S 11/2/2012	MW-820S 7/18/2013	MW-820S 9/12/2017	% Detect	Average	Minimum Detected
Other (mg/L)																			
Alkalinity	None1	NE	NE	NE	NE	NE	500	530	450	100%	493	450	530	150	450	100	100%	233	100
Ammonia	7664-41-7	NE	NE	NE	NE	NE	3.7	1.4	3.4	100%	2.8	1.4	3.7	5.4	2.2	2.2	100%	3.3	2.2
Hardness	None2	NE	NE	NE	NE	NE			410	100%	410	410	410			110	100%	110	110
Sulfide	18496-25-8	NE	NE	NE	NE	NE	1.8	0.62	0.13	100%	0.85	0.13	1.8	4.7	3	0.047 [J]	100%	2.58	0.05
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.065* B	*0.083* B	*0.15* B	100%	0.099	0.065	0.15	*1.4* B	*0.18* B	*0.18* [J-] B	100%	0.587	0.18
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.14	0.074	*0.21* B	100%	0.141	0.074	0.21	*0.23* B	0.092	0.10	100%	0.141	0.092
Total Organic Carbon	None3	NE	NE	NE	NE	NE	31	30	44	100%	35	30	44	32	26	24	100%	27	24
Chloride	16887-00-6	NE	NE	NE	NE	NE	160	23	15	100%	66	15	160	370	510	2.0 [J+]	100%	294	2.0
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	240	170	260	100%	223	170	260	230	94	120 [J+]	100%	148	94
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*360* B	*110* B	*20* B	100%	163	20	360	*39* B	*57* B	*22* B	100%	39	22

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

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[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.

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B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Maximum Detected	MW-821D 11/2/2012	MW-821D 7/18/2013	MW-821D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)														
Alkalinity	None1	NE	NE	NE	NE	NE	450	1800	2000	1600	100%	1800	1600	2000
Ammonia	7664-41-7	NE	NE	NE	NE	NE	5.4	33	26	32	100%	30	26	33
Hardness	None2	NE	NE	NE	NE	NE	110			53	100%	53	53	53
Sulfide	18496-25-8	NE	NE	NE	NE	NE	4.7	10	0.34	0.047 [J]	100%	3.46	0.047	10
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	1.4	*1.3* B	*1.2* B	*2.1* B	100%	1.533	1.2	2.1
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.23	*0.22* B	*0.44* B	*0.34* B	100%	0.333	0.22	0.44
Total Organic Carbon	None3	NE	NE	NE	NE	NE	32	180	170	140	100%	163	140	180
Chloride	16887-00-6	NE	NE	NE	NE	NE	510	8.5	16	35	100%	20	8.5	35
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	230	1200	< 7.80	1300	67%	836	7.8	1300
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	57	*270* B	*250* B	*270* B	100%	263	250	270

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

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A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level

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B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-821S 11/2/2012	MW-821S 7/18/2013	MW-821S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-822D 10/31/2012	MW-822D 7/16/2013	MW-822D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)																				
Alkalinity	None1	NE	NE	NE	NE	NE	2200	320	250	100%	923	250	2200	500	480	500	100%	493	480	500
Ammonia	7664-41-7	NE	NE	NE	NE	NE	4.3	4.8	3.8	100%	4.3	3.8	4.8	5.7	7.1	4.1	100%	5.6	4.1	7.1
Hardness	None2	NE	NE	NE	NE	NE			230	100%	230	230	230			490	100%	490	490	490
Sulfide	18496-25-8	NE	NE	NE	NE	NE	0.84	0.97	0.03 [J]	100%	0.61	0.030	0.97	< 0.022	< 0.04	< 0.015	0%			
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.12* B	*0.082* B	*0.081* B	100%	0.094	0.081	0.12	*0.031* B	*0.034* B	*0.063* B	100%	0.043	0.031	0.06
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.078	0.052	0.08	100%	0.07	0.05	0.08	< 0.0050	< 0.0060	0.036 [J+]	33%	0.02	0.0050	0.04
Total Organic Carbon	None3	NE	NE	NE	NE	NE	55	22	22	100%	33	22	55	5.5	3.4 [M2]	8.6	100%	5.8	3.4	8.6
Chloride	16887-00-6	NE	NE	NE	NE	NE	22	38	28	100%	29	22	38	1400	1600	220	100%	1073	220	1600
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	250	110	140	100%	167	110	250	71	27	36	100%	45	27	71
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*24* B	*17* B	*9.6* [J] B	100%	17	10	24	*290* B	*150* B	*2.8* [J] B	100%	148	2.8	290

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-822S 10/31/2012	MW-822S 7/16/2013	MW-822S 9/13/2017	MW-822S DUP 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)														
Alkalinity	None1	NE	NE	NE	NE	NE	300	500	300	350	100%	363	300	500
Ammonia	7664-41-7	NE	NE	NE	NE	NE	0.41	0.31	0.86	0.86	100%	0.61	0.31	0.86
Hardness	None2	NE	NE	NE	NE	NE			360	360	100%	360	360	360
Sulfide	18496-25-8	NE	NE	NE	NE	NE	< 0.022	< 0.04	< 0.015	0.015 J	25%	0.023	0.015	0.04
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.0027 J	< 0.003	*0.008* B	*0.0073* B	75%	0.0053	0.0027	0.008
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	< 0.0050	< 0.0060	0.058 J	0.024 J	50%	0.023	0.005	0.058
Total Organic Carbon	None3	NE	NE	NE	NE	NE	3.3	2.4	< 1.0	< 1.0	50%	1.9	1.0	3.3
Chloride	16887-00-6	NE	NE	NE	NE	NE	20	56	14	13	100%	26	13	56
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	13	< 7.8	21	23	75%	16	7.8	23
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*40* B	*55* B	*91* J B	*85* B	100%	68	40	91

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-823D 11/1/2012	MW-823D 7/17/2013	MW-823D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-823S 11/1/2012	MW-823S 7/17/2013	MW-823S-Dup 7/17/2013	MW-823S 9/12/2017	% Detect
Other (mg/L)																		
Alkalinity	None1	NE	NE	NE	NE	NE	2200	2500	1400	100%	2033	1400	2500	350	220	220	250	100%
Ammonia	7664-41-7	NE	NE	NE	NE	NE	310	320	200	100%	277	200	320	2.4	1.3	1	0.7	100%
Hardness	None2	NE	NE	NE	NE	NE			130	100%	130	130	130				410	100%
Sulfide	18496-25-8	NE	NE	NE	NE	NE	0.13	0.38	0.084	100%	0.20	0.08	0.38	< 0.022	< 0.04	< 0.04	< 0.015	0%
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.12* B	*0.13* B	*0.048* B	100%	0.099	0.048	0.13	*0.22* B	*0.22* B	*0.18* B	*0.16* B	100%
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	*0.46* B	*0.70* B	*0.53* B	100%	0.56	0.46	0.70	0.0062 J	< 0.0060	< 0.0060	0.034	50%
Total Organic Carbon	None3	NE	NE	NE	NE	NE	160	160	64	100%	128	64	160	11	5.3	5.3	6.9	100%
Chloride	16887-00-6	NE	NE	NE	NE	NE	190	170	120	100%	160	120	190	250	38	42	20	100%
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	620	290	300	100%	403	290	620	31	15	< 7.8	36	75%
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*60* B	*29* B	*21* B	100%	37	21	60	*270* B	*750* B	*750* B	*140* B	100%

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Average	Minimum Detected	Maximum Detected	MW-824D 11/1/2012	MW-824D 7/18/2013	MW-824D 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)																
Alkalinity	None1	NE	NE	NE	NE	NE	260	220	350	850	1100	1000	100%	983	850	1100
Ammonia	7664-41-7	NE	NE	NE	NE	NE	1.35	0.7	2.4	10	10	11	100%	10	10	11
Hardness	None2	NE	NE	NE	NE	NE	410	410	410			560	100%	560	560	560
Sulfide	18496-25-8	NE	NE	NE	NE	NE	0.029	0.015	0.04	0.2	0.12	< 0.015	67%	0.11	0.015	0.2
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.1950	0.16	0.22	*0.29* B	*0.35* B	*0.13* B	100%	0.257	0.130	0.35
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.013	0.006	0.034	0.1300	0.1400	*0.18* B	100%	0.15	0.13	0.18
Total Organic Carbon	None3	NE	NE	NE	NE	NE	7.1	5.3	11	52	43	38	100%	44	38	52
Chloride	16887-00-6	NE	NE	NE	NE	NE	88	20	250	120	60	91	100%	90	60	120
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	22	7.8	36	360	200	320	100%	293	200	360
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	478	140	750	*19* B	*28* B	*6.5* J B	100%	18	6.5	28

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-824S 11/1/2012	MW-824S 7/15/2013	MW-824S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-825S 11/1/2012	MW-825S 7/15/2013	MW-825S-Dup 7/15/2013	MW-825S 9/12/2017	% Detect
Other (mg/L)																		
Alkalinity	None1	NE	NE	NE	NE	NE	250	310	110	100%	223	110	310	160	250	280	200	100%
Ammonia	7664-41-7	NE	NE	NE	NE	NE	1.6	2.1	2.7	100%	2.1	1.6	2.7	5.3	6.2	5.8	3.4	100%
Hardness	None2	NE	NE	NE	NE	NE			240	100%	240	240	240				160	100%
Sulfide	18496-25-8	NE	NE	NE	NE	NE	1.0	0.4	0.35	100%	0.58	0.35	1.00	1.0	0.26	0.23	2.7	100%
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.49* B	*0.31* B	*0.11* B	100%	0.303	0.110	0.49	*0.073* B	< 0.003	0.004 J	*0.064* J B	75%
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.0250	< 0.0060	0.033	67%	0.02	0.01	0.03	0.0350	0.0560	0.0340	0.057	100%
Total Organic Carbon	None3	NE	NE	NE	NE	NE	11	28	5.6	100%	15	5.6	28	17	17	17	13	100%
Chloride	16887-00-6	NE	NE	NE	NE	NE	200	300	48	100%	183	48	300	350	680	600	120	100%
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	35	32	30	100%	32	30	35	57	74	60	58	100%
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*140* B	*230* B	*230* B	100%	200	140	230	*160* B	*240* B	*240* B	*130* B	100%

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

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Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Average	Minimum Detected	Maximum Detected	MW-826M 11/2/2012	MW-826M 7/16/2013	MW-826M 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)																
Alkalinity	None1	NE	NE	NE	NE	NE	223	160	280	800	960	1200	100%	987	800	1200
Ammonia	7664-41-7	NE	NE	NE	NE	NE	5.2	3.4	6.2	86	80	120	100%	95	80	120
Hardness	None2	NE	NE	NE	NE	NE	160	160	160			940	100%	940	940	940
Sulfide	18496-25-8	NE	NE	NE	NE	NE	1.05	0.23	2.7	0.5	0.63	4.3	100%	1.81	0.50	4.3
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.0360	0.0030	0.073	*0.15* B	*0.15* B	*0.39* B	100%	0.230	0.150	0.39
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.046	0.034	0.057	0.0100	< 0.0060	0.0067 J	67%	0.0076	0.006	0.010
Total Organic Carbon	None3	NE	NE	NE	NE	NE	16	13	17	37	28	54	100%	40	28	54
Chloride	16887-00-6	NE	NE	NE	NE	NE	438	120	680	110	120	300	100%	177	110	300
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	62	57	74	120	93	310	100%	174	93	310
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	193	130	240	*230* B	*140* B	*190* B	100%	187	140	230

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-826S 11/2/2012	MW-826S 7/16/2013	MW-826S 9/14/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-827S 10/31/2012	MW-827S-Dup 10/31/2012	MW-827S 7/16/2013	MW-827S 9/13/2017	% Detect	Average
Other (mg/L)																			
Alkalinity	None1	NE	NE	NE	NE	NE	400	650	350	100%	467	350	650	100	100	110	130	100%	110
Ammonia	7664-41-7	NE	NE	NE	NE	NE	17	23	13	100%	18	13	23	2.8	2.7	3.1	3.0 J+	100%	2.9
Hardness	None2	NE	NE	NE	NE	NE			260	100%	260	260	260				140	100%	140
Sulfide	18496-25-8	NE	NE	NE	NE	NE	< 0.022	< 0.04	< 0.015	0%				3.0	3.0	1.1	< 0.015	75%	1.78
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.064* B	*0.064* B	*0.056* B	100%	0.061	0.056	0.06	*0.06* B	*0.077* B	*0.061* B	*0.12* B	100%	0.0795
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	< 0.0050	< 0.0060	0.0099 J	33%	0.0070	0.0050	0.0099	0.0150	< 0.0050	< 0.0060	0.015	50%	0.010
Total Organic Carbon	None3	NE	NE	NE	NE	NE	15	17	11	100%	14	11	17	4.7	4.8	5.3	3.5	100%	4.6
Chloride	16887-00-6	NE	NE	NE	NE	NE	250	450	61	100%	254	61	450	300	320	440	500	100%	390
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	58	53	38	100%	50	38	58	30	36	21	14	100%	25
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*160* B	*130* B	*13* B	100%	101	13	160	*130* B	*140* B	*87* B	*140* B	100%	124

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

[U] Laboratory flag indicating analyte was analyzed for, but not detected above the level of the reported sample quantitation limit.

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A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected	MW-828S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)													
Alkalinity	None1	NE	NE	NE	NE	NE	100	130	250	100%	250	250	250
Ammonia	7664-41-7	NE	NE	NE	NE	NE	2.7	3.1	0.87	100%	0.87	0.87	0.87
Hardness	None2	NE	NE	NE	NE	NE	140	140	350	100%	350	350	350
Sulfide	18496-25-8	NE	NE	NE	NE	NE	0.015	3.0	0.047 J	100%	0.047	0.047	0.047
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.0600	0.12	*0.61* B	100%	0.61	0.61	0.61
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.0050	0.015	0.12	100%	0.12	0.12	0.12
Total Organic Carbon	None3	NE	NE	NE	NE	NE	3.5	5.3	12	100%	12	12	12
Chloride	16887-00-6	NE	NE	NE	NE	NE	300	500	3.5	100%	3.5	3.5	3.5
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	14	36	220	100%	220	220	220
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	87	140	*110* B	100%	110	110	110

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

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A(MCL)=IDEM DQO Exceedance of the Maximum Contaminant Level

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-829S 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-830S 9/12/2017	MW-830S DUP 9/12/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-831S 9/13/2017	% Detect	Average
Other (mg/L)																				
Alkalinity	None1	NE	NE	NE	NE	NE	130	100%	130	130	130	300	300	100%	300	300	300	550	100%	550
Ammonia	7664-41-7	NE	NE	NE	NE	NE	0.3	100%	0.3	0.3	0.3	0.42	0.47	100%	0.445	0.420	0.47	1.3	100%	1.3
Hardness	None2	NE	NE	NE	NE	NE	420	100%	420	420	420	460	440	100%	450	440	460	760	100%	760
Sulfide	18496-25-8	NE	NE	NE	NE	NE	< 0.015	0%				0.072	< 0.015	50%	0.044	0.015	0.072	0.037 J	100%	0.037
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.21* B	100%	0.21	0.21	0.21	*0.17* B	*0.16* B	100%	0.17	0.16	0.17	*0.017* B	100%	0.017
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.033	100%	0.03	0.03	0.03	0.16 J	0.069 J	100%	0.115	0.069	0.16	0.04 J+	100%	0.04
Total Organic Carbon	None3	NE	NE	NE	NE	NE	34	100%	34	34	34	6.4	6.4	100%	6.4	6.4	6.4	19	100%	19
Chloride	16887-00-6	NE	NE	NE	NE	NE	7.0	100%	7.0	7.0	7.0	3.5 J	5.5 J	100%	4.5	3.5	5.5	37	100%	37
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	< 9.3	0%				31	36	100%	34	31	36	77	100%	77
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*310* B	100%	310	310	310	*130* B	*150* B	100%	140	130	150	*520* B	100%	520

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

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[J-] Laboratory flag indicating analyte concentrations detected between RL and MDL may be biased low.

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected	MW-832D 9/11/2017	MW-832D DUP 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)														
Alkalinity	None1	NE	NE	NE	NE	NE	550	550	950	950	100%	950	950	950
Ammonia	7664-41-7	NE	NE	NE	NE	NE	1.3	1.3	8.3	8.5	100%	8.4	8.3	8.5
Hardness	None2	NE	NE	NE	NE	NE	760	760	750	780	100%	765	750	780
Sulfide	18496-25-8	NE	NE	NE	NE	NE	0.037	0.037	0.026 J	0.034 J	100%	0.030	0.026	0.034
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	0.017	0.017	*0.024* J B	*0.035* J B	100%	0.0295	0.024	0.035
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.04	0.04	0.11	0.11	100%	0.11	0.11	0.11
Total Organic Carbon	None3	NE	NE	NE	NE	NE	19	19	63	61	100%	62	61	63
Chloride	16887-00-6	NE	NE	NE	NE	NE	37	37	71	70	100%	71	70	71
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	77	77	400	460	100%	430	400	460
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	520	520	*23* J B	*13* J B	100%	18	13	23

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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A(DCL)=IDEM DQO Exceedance of the Default Closure Level

B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-832S 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-833S 9/11/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-834D 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW 9/1
Other (mg/L)																						
Alkalinity	None1	NE	NE	NE	NE	NE	350	100%	350	350	350	250	100%	250	250	250	400	100%	400	400	400	450
Ammonia	7664-41-7	NE	NE	NE	NE	NE	0.1	100%	0.1	0.1	0.1	3.1	100%	3.1	3.1	3.1	13	100%	13	13	13	3.3
Hardness	None2	NE	NE	NE	NE	NE	420	100%	420	420	420	170	100%	170	170	170	950	100%	950	950	950	530
Sulfide	18496-25-8	NE	NE	NE	NE	NE	< 0.015	0%				< 0.015	0%				0.044 J	100%	0.044	0.044	0.044	0.028
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.012* B	100%	0.012	0.012	0.012	*0.11* B	100%	0.11	0.11	0.11	0.0029 J	100%	0.0029	0.0029	0.0029	*0.04*
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.056	100%	0.056	0.056	0.056	0.029	100%	0.029	0.029	0.029	0.052 J+	100%	0.052	0.052	0.052	0.052
Total Organic Carbon	None3	NE	NE	NE	NE	NE	< 1.0	0%				15	100%	15	15	15	7.3	100%	7.3	7.3	7.3	9.1
Chloride	16887-00-6	NE	NE	NE	NE	NE	8.0	100%	8.0	8.0	8.0	24	100%	24	24	24	1400	100%	1400	1400	1400	320
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	< 9.3	0%				73	100%	73	73	73	70	100%	70	70	70	36
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*95* B	100%	95	95	95	*7.7* J B	100%	7.7	7.7	7.7	*67* B	100%	67	67	67	*2.7*

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

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B=EPA Ecological Screening Level Exceedance

TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	W-835D 3/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-836S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected
Other (mg/L)																
Alkalinity	None1	NE	NE	NE	NE	NE		100%	450	450	450	110	100%	110	110	110
Ammonia	7664-41-7	NE	NE	NE	NE	NE		100%	3.3	3.3	3.3	5.3	100%	5.3	5.3	5.3
Hardness	None2	NE	NE	NE	NE	NE		100%	530	530	530	260	100%	260	260	260
Sulfide	18496-25-8	NE	NE	NE	NE	NE	J	100%	0.028	0.028	0.028	6.1	100%	6.1	6.1	6.1
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	B	100%	0.04	0.04	0.04	*2.7* B	100%	2.7	2.7	2.7
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	J*	100%	0.052	0.052	0.052	0.12	100%	0.12	0.12	0.12
Total Organic Carbon	None3	NE	NE	NE	NE	NE		100%	9.1	9.1	9.1	16	100%	16	16	16
Chloride	16887-00-6	NE	NE	NE	NE	NE		100%	320	320	320	380	100%	380	380	380
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE		100%	36	36	36	94	100%	94	94	94
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	J B	100%	2.7	2.7	2.7	*140* B	100%	140	140	140

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

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[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	MW-837S 9/13/2017	MW-837S DUP 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-838S 9/13/2017	% Detect	Average	Minimum Detected	Maximum Detected	MW-839S 9/12/2017	% Detect	Average
Other (mg/L)																				
Alkalinity	None1	NE	NE	NE	NE	NE	110	110	100%	110	110	110	500	100%	500	500	500	85	100%	85
Ammonia	7664-41-7	NE	NE	NE	NE	NE	0.87	0.97	100%	0.92	0.87	0.97	3.5	100%	3.5	3.5	3.5	1.8	100%	1.8
Hardness	None2	NE	NE	NE	NE	NE	120	120	100%	120	120	120	410	100%	410	410	410	130	100%	130
Sulfide	18496-25-8	NE	NE	NE	NE	NE	< 0.015	< 0.015	0%				< 0.015	0%				< 0.015	0%	
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	*0.3* J B	*0.55* J B	100%	0.43	0.30	0.55	*0.067* B	100%	0.067	0.067	0.067	*2.1* B	100%	2.1
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.012	0.015	100%	0.014	0.012	0.015	0.16	100%	0.16	0.16	0.16	0.17	100%	0.17
Total Organic Carbon	None3	NE	NE	NE	NE	NE	6.6	6.2	100%	6.4	6.2	6.6	17	100%	17	17	17	8.5	100%	8.5
Chloride	16887-00-6	NE	NE	NE	NE	NE	220	220	100%	220	220	220	90	100%	90	90	90	28	100%	28
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	24	30	100%	27	24	30	200	100%	200	200	200	36	100%	36
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	*83* B	*93* B	100%	88	83	93	*5.0* J B	100%	5.0	5.0	5.0	*59* B	100%	59

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

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TABLE 2-4D
Groundwater Sample Laboratory Results - Other Parameters

Parameters	CAS #	IDEM [A] GW Solubility (mg/L)	IDEM [A] MCL (mg/L)	IDEM [A] Industrial (mg/L)	IDEM [A] Default Closure Level (mg/L)	EPA [B] ESLs - water (mg/L)	Minimum Detected	Maximum Detected
Other (mg/L)								
Alkalinity	None1	NE	NE	NE	NE	NE	85	85
Ammonia	7664-41-7	NE	NE	NE	NE	NE	1.8	1.8
Hardness	None2	NE	NE	NE	NE	NE	130	130
Sulfide	18496-25-8	NE	NE	NE	NE	NE		
Total Cyanides	57-12-5	NE	NE	NE	NE	0.0052	2.1	2.1
Total Phenolics	64743-03-9	NE	NE	NE	NE	0.18	0.17	0.17
Total Organic Carbon	None3	NE	NE	NE	NE	NE	8.5	8.5
Chloride	16887-00-6	NE	NE	NE	NE	NE	28	28
Chemical Oxygen Demand	None4	NE	NE	NE	NE	NE	36	36
Sulfate	18785-72-3	NE	NE	NE	NE	0.18	59	59

Notes:

[A] IDEM - Indiana Department of Environmental Management, 2001, Risk Integrated System of Closure, Appendix 1 Table A - Default Closure Table - Industrial with 2006 & 2009 updates.

[B] EPA - US EPA Region V Ecological Screening Levels August 2003.

[B] Laboratory flag indicating analyte detected in the laboratory method blank, results are estimated.

[C] IDEM = Bromodichloromethane.

[D] Listed by EPA as Methane [bis (2-chloroethoxy)].

[E] Listed by EPA as Chloro-2-methylethyl ether [bis(2-)].

[J] Laboratory flag indicating estimated concentration between the method detection limit and the reporting limit.

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Table 4-1: Surfactant-Enhanced Subsurface Remediation Processes and Metrics

Technology	Surfactant-enhanced subsurface remediation	Injection wells deliver surfactant solution to LNAPL zone while extraction wells capture mobilized/solubilized LNAPL.	
Remediation Process	Physical mass recovery	Yes	Surfactant enhances LNAPL mobility and recovery by significantly reducing LNAPL/water interfacial tension.
	Phase change	No	LNAPL is solubilized above its typical aqueous solubility.
	In-situ destruction	No	Surfactants are cometabolites and may enhance aerobic and anaerobic microbial hydrocarbon digestion.
	Stabilization/ binding	No	N/A
Objective Applicability	LNAPL saturation	Yes	SESR reduces LNAPL saturation and even mobilizes otherwise residual LNAPL from pores. Properly designed surfactant systems enhance removal efficiency of residual LNAPL potentially by several orders of magnitude compared to extraction remediation approach alone, which rely on standard dissolution to remove residual LNAPL.
		Example performance metrics	Reduced LNAPL transmissivity; reduction or elimination of measurable LNAPL in wells.
	LNAPL composition	Yes	Abate accumulation of unacceptable constituent concentrations in soil vapor and/or dissolved phase from an LNAPL source.
		Example performance metrics	LNAPL composition change; soil VOC concentrations to below regulatory standard; soil vapor plume concentrations to below regulatory standard.
Applicable LNAPL Type	All LNAPL types, though mobility enhancement for those with higher oil-water interfacial tension are less efficient.		
Geologic Factors	Unsaturated zone	When unsaturated zone LNAPL is near water table, water table can be raised (via mounding effect) to flood the zone with surfactant. When unsaturated zone LNAPL is far above water table, infiltration techniques may be used to flush the zone with surfactant but are not as effective as saturated zone treatment. More homogeneity and moderate permeability result in more effective treatment through even distribution of surfactant.	
	Saturated zone	Permeability	Surfactant delivery and LNAPL recovery are more rapid and more effective in higher-permeability soil.
		Grain size	LNAPL recovery is more rapid and effective in larger-grained soils (sands) than in smaller-grained soils (e.g., silt and clay).
		Heterogeneity	High levels of heterogeneity can reduce surfactant solution delivery efficiency, which increase the required number of pore volumes.
		Consolidation	High consolidation may reduce pore sizes, permeability, and injection feasibility; unconsolidated/loosely consolidated may allow larger spacing within well network (i.e., tend to be more favorable for recovery).

Table 7-1: Evaluation of Corrective Measures for LNAPL
Remedial Study, Former Coke Plant, East Chicago, Indiana

Evaluation Criteria	Corrective Measure 1 SER	Corrective Measure 2 ISCO	Corrective Measure 3 ISTR-SEE
Protection of Human Health and the Environment	Provides both short-term and long-term protection by reducing concentrations and exposure to LNAPL.	Provides both short-term and long-term protection by reducing concentrations and exposure to LNAPL and VOCs.	Provides both short-term and long-term protection by reducing concentrations and exposure to LNAPL and VOCs.
Achievement of CMOs	Provides moderate to high degree of compliance with CMOs. CMOs are met through corrective measure.	Provides moderate degree of compliance with CMOs. CMOs are met through corrective measure.	Provides moderate to high degree of compliance with CMOs. CMOs are met through corrective measure.
Controlling Sources of Contaminant Release	Achieved through dissolution of LNAPL and desorption of VOCs via injection and extraction of surfactant solution.	Achieved through chemical oxidation of VOCs to carbon dioxide and water, via batch injection of oxidant.	Achieved through vaporization of LNAPL and VOCs followed by heat-enhanced extraction and ex situ treatment.
Long-Term Effectiveness and Reliability	SER is a well-demonstrated technology for removing LNAPL from soil and groundwater. Long-term monitoring (e.g., 7 years from commencement of remedy) appropriate to verify effectiveness of remedy.	ISCO is a well-demonstrated technology for removing VOCs from soil and groundwater; however, multiple injection events will likely be required. Long-term monitoring (e.g., 7 years from commencement of remedy) appropriate to verify effectiveness of remedy.	ISTR is a well-demonstrated technology for removing LNAPL and VOCs from soil and groundwater. Long-term monitoring (e.g., 7 years from commencement of remedy) appropriate to verify effectiveness of remedy.
Short-Term Effectiveness	SER can be implemented within relatively short timeframe (approximately 1 year) and will be effective shortly after surfactant application events. Does not present substantial risk to on-site workers or members of the community.	ISCO can be implemented within relatively short timeframe (approximately 1 year) and will be effective shortly after injection events. Does not present substantial risk to on-site workers or members of the community.	ISTR can be implemented within relatively short timeframe (approximately 1 year) and will be effective within several months of implementation. Does not present a substantial risk to on-site workers or members of the community.
Reduction of Toxicity, Mobility, or Volume Through Treatment	Moderate to high degree of reduction of toxicity, mobility and volume of contamination through removal of LNAPL.	Moderate to high degree of reduction of toxicity, mobility and volume of contamination through VOC destruction.	High degree of reduction of toxicity and mobility of contamination and high degree of reduction of volume of contamination through treatment by LNAPL and VOC extraction.
Implementability	SER is reliable and can be verified through post-treatment groundwater monitoring. Agency approvals can be obtained.	ISCO is reliable and can be verified through post-treatment groundwater monitoring. Agency approvals can be obtained.	ISTR is reliable and can be verified through post-treatment groundwater monitoring. Agency approvals can be obtained.
Cost	High NPV = $3,512,000	Very High NPV = $7,252,000	Very High NPV = $5,440,000

Notes:

CMO - Corrective Measure Objective

ISCO - In Situ Chemical Oxidation

ISTR - In Situ Thermal Remediation

LNAPL - Light Non-Aqueous Phase Liquid

NPV - Net Present Value

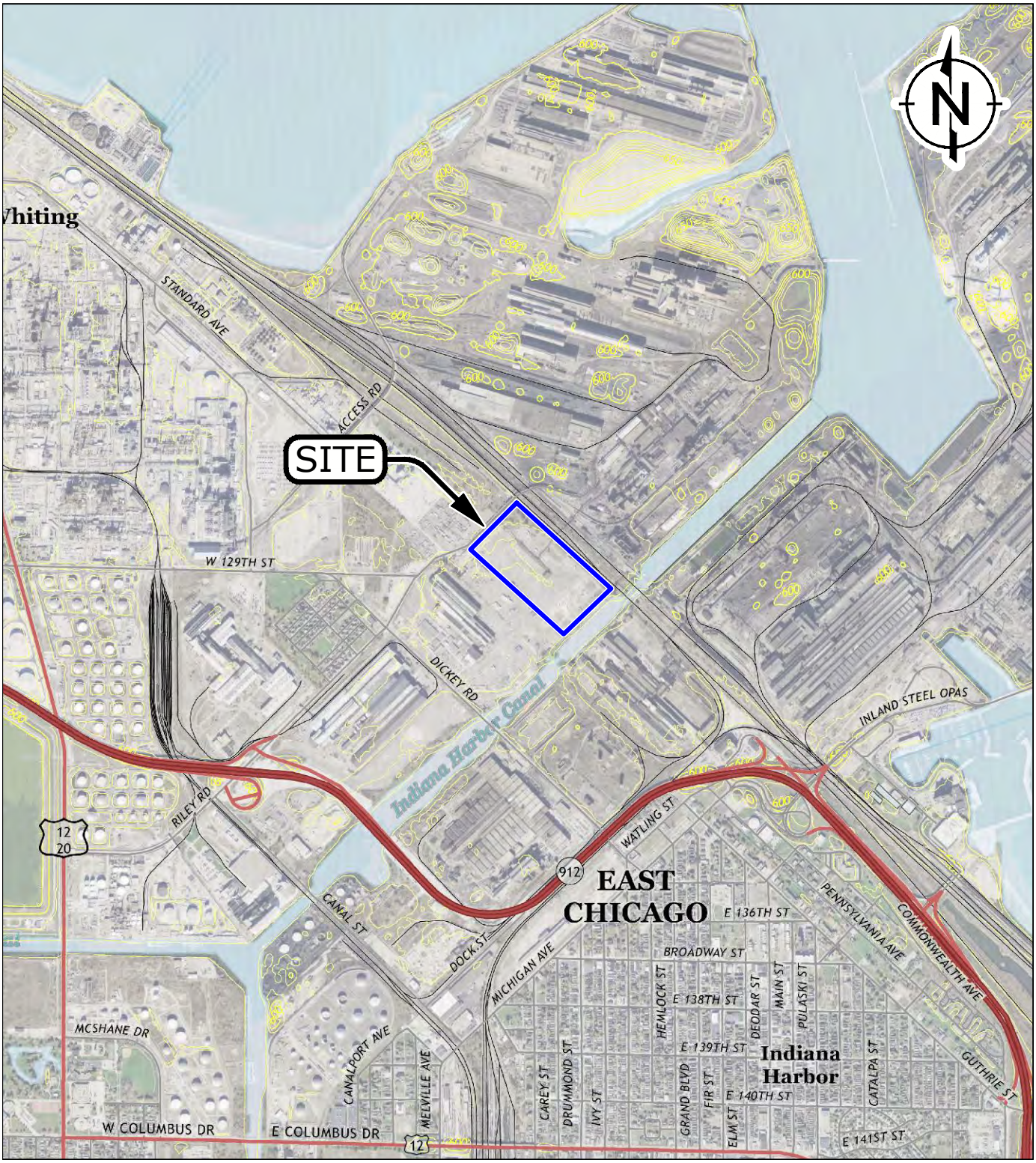
SEE - Steam Enhanced Extraction

SER - Surfactant Enhanced Recovery

VOC - Volatile Organic Compound

NPV Costs include 7 years of groundwater monitoring and reporting.

FIGURES



CONTOUR INTERVAL 10 FEET

0 1/2 1 MILE

0 2000 4000 FEET

LEGEND:

PROPERTY BOUNDARY (APPROXIMATE)

SOURCE:
2016 USGS 7.5 Minute Series Whiting, Indiana Topographic Quadrangle.
Site Location; N: 41.661314° W: 87.457289° WGS84

QUADRANGLE LOCATION

RAMBOLL

DRAFTED BY: HJW

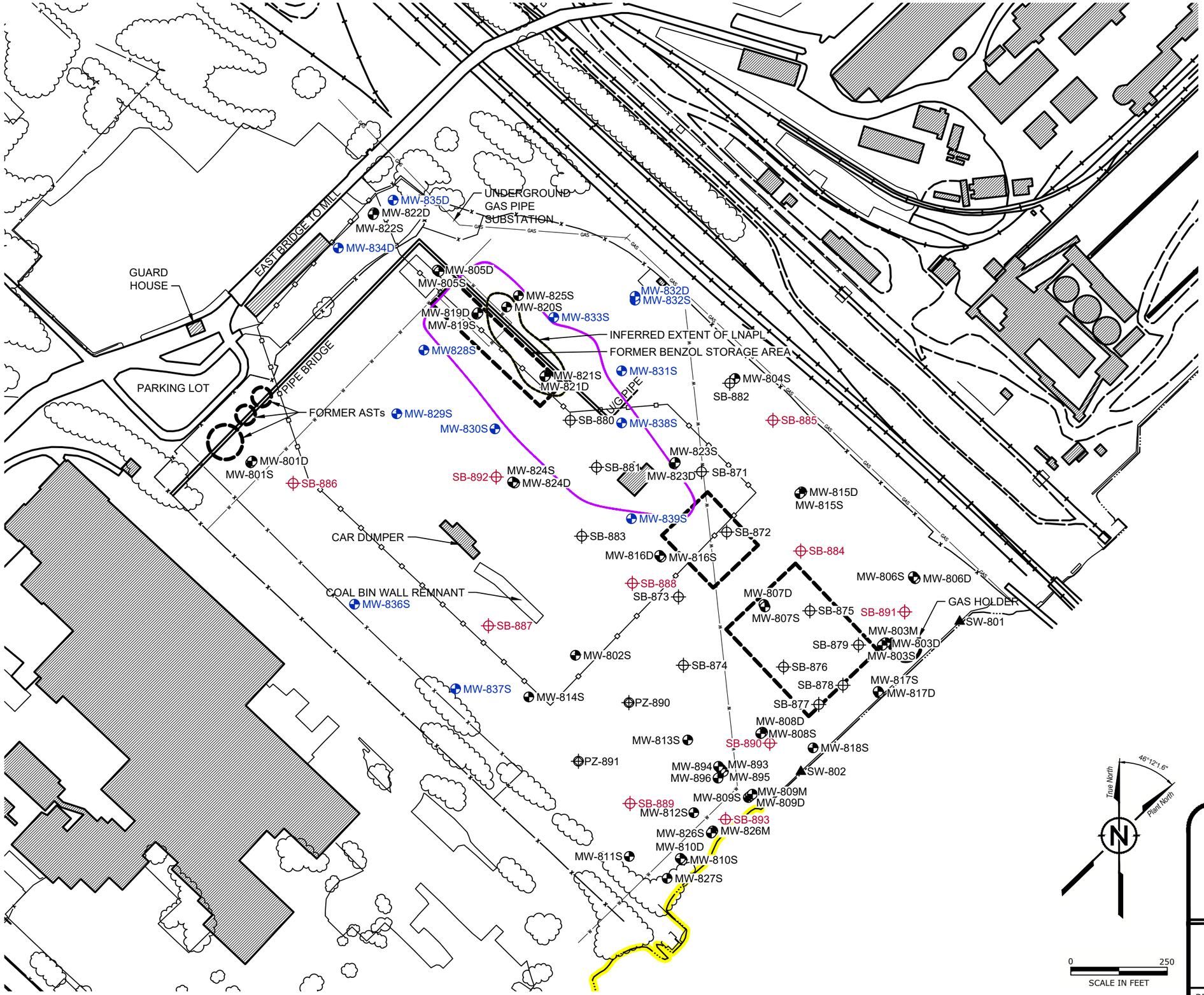
DATE: 1/6/20

SITE LOCATION MAP
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

FIGURE
1-1

1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\1-1_Site Location Map.dwg



LEGEND

- SOIL BORING
- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- PIEZOMETER
  (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- SOIL BORING ADVANCED IN 2017
- MONITORING WELL INSTALLED IN 2017
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- FENCED-IN PARKING AREA
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA
- APPROXIMATE LOCATION OF LASER INDUCED FLUORESCENCE INVESTIGATION
- LOCATION OF BREACHED SHEET PILE WALL

NOTES:

1. SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.
2. LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

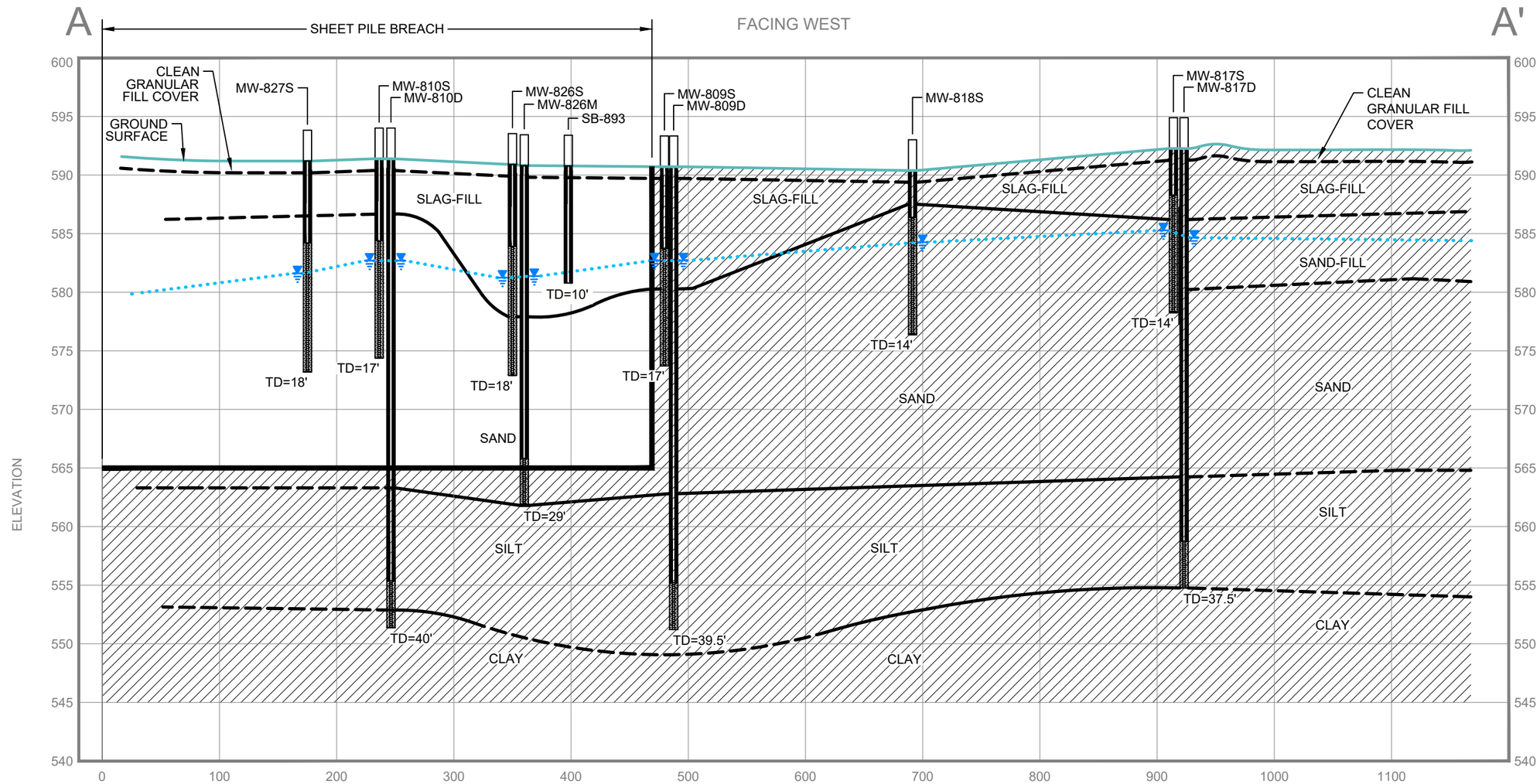
SAMPLE LOCATIONS
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

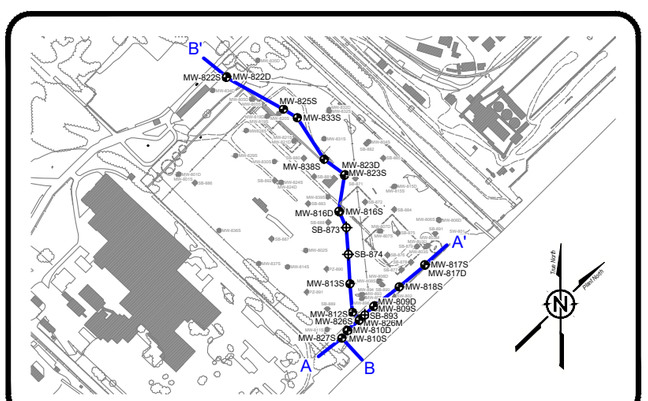
RAMBOLL

FIGURE
1-2

DRAFTED BY: HJW | DATE: 1/6/20 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\1-2_Sample Locations.dwg





CROSS SECTION INDEX

LEGEND

	GROUNDWATER ELEVATION (SEPTEMBER 2017)
	LITHOLOGICAL CONTACT (DASHED WHERE INFERRED)
SLAG-FILL	GRANULAR, SAND-SIZED, BLACK, VERY DENSE TO EXTREMELY DENSE
SAND	FINE TO COARSE, LAYERED (FINING UPWARD), GREY, MEDIUM DENSE TO DENSE
CLAY	GREY, FIRM TO STIFF, PLASTIC
SILT	COARSE, OCCASIONAL 2-9" LAYERS OF SAND (FINE OR COARSE), GREY, DENSE
DEEP WELLS	3' SCREEN
MID-DEPTH WELLS	5' SCREEN
SHALLOW WELLS	10' SCREEN
	SHEET PILE BARRIER

APPROX. VERTICAL SCALE (ft.) 0 10

APPROX. HORIZONTAL SCALE (ft.) 0 100

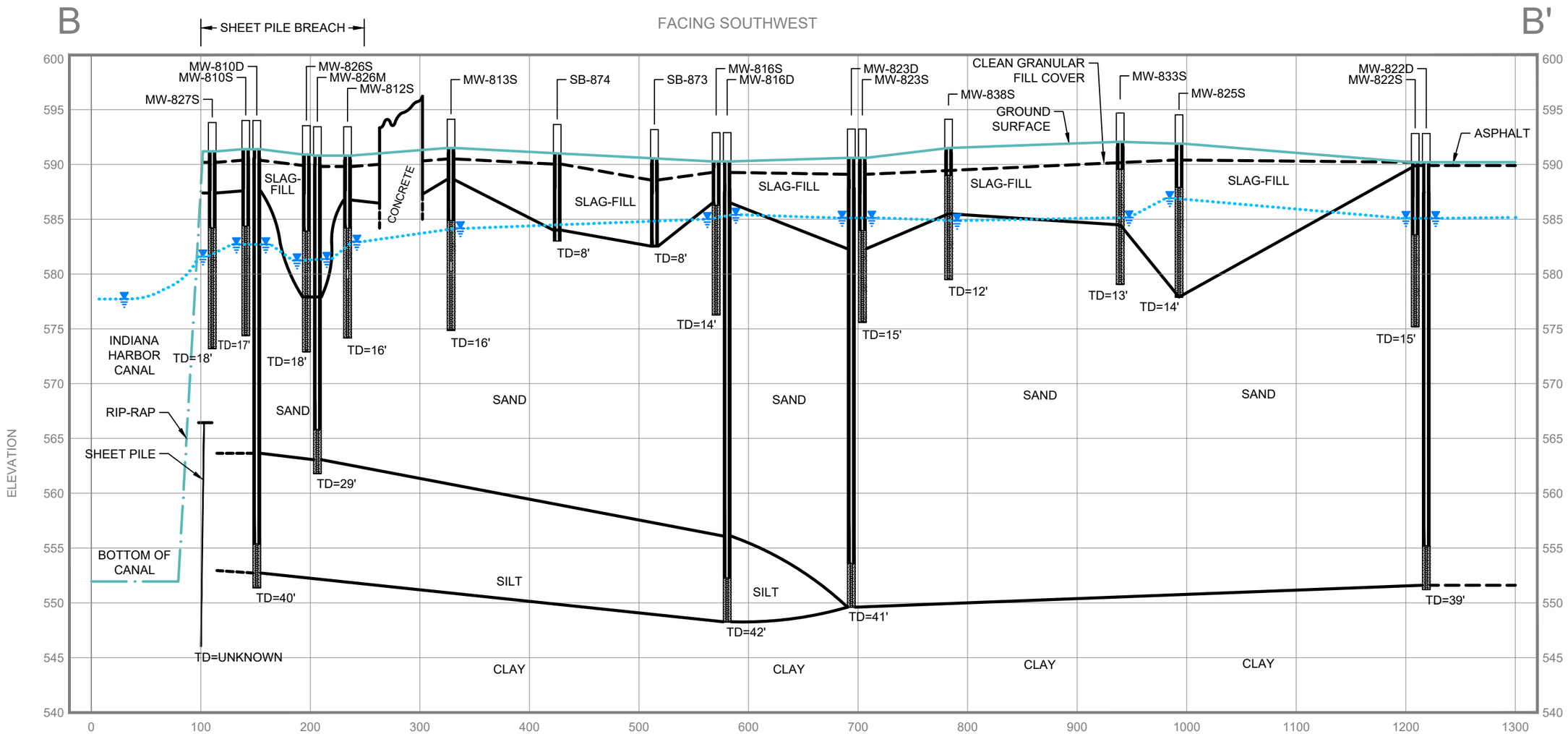
GEOLOGIC CROSS SECTION A - A'
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

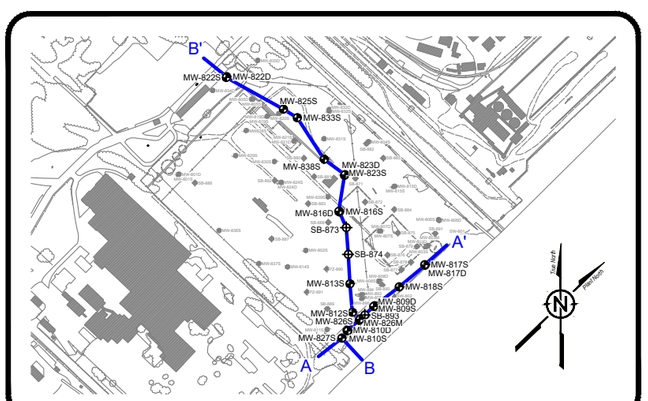
RAMBOLL

FIGURE **2-1**

DRAFTED BY: HJW | DATE: 1/6/20 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-1_Geologic Cross Section A-A'.dwg





CROSS SECTION INDEX

LEGEND

	GROUNDWATER ELEVATION (SEPTEMBER 2017)
	LITHOLOGICAL CONTACT (DASHED WHERE INFERRED)
SLAG-FILL	GRANULAR, SAND-SIZED, BLACK, VERY DENSE TO EXTREMELY DENSE
SAND	FINE TO COARSE, LAYERED (FINING UPWARD), GREY, MEDIUM DENSE TO DENSE
CLAY	GREY, FIRM TO STIFF, PLASTIC
SILT	COARSE, OCCASIONAL 2-9" LAYERS OF SAND (FINE OR COARSE), GREY, DENSE
DEEP WELLS	3' SCREEN
MID-DEPTH WELLS	5' SCREEN
SHALLOW WELLS	10' SCREEN

APPROX. VERTICAL SCALE (ft.) 0 10

APPROX. HORIZONTAL SCALE (ft.) 0 200

GEOLOGIC CROSS SECTION B - B'

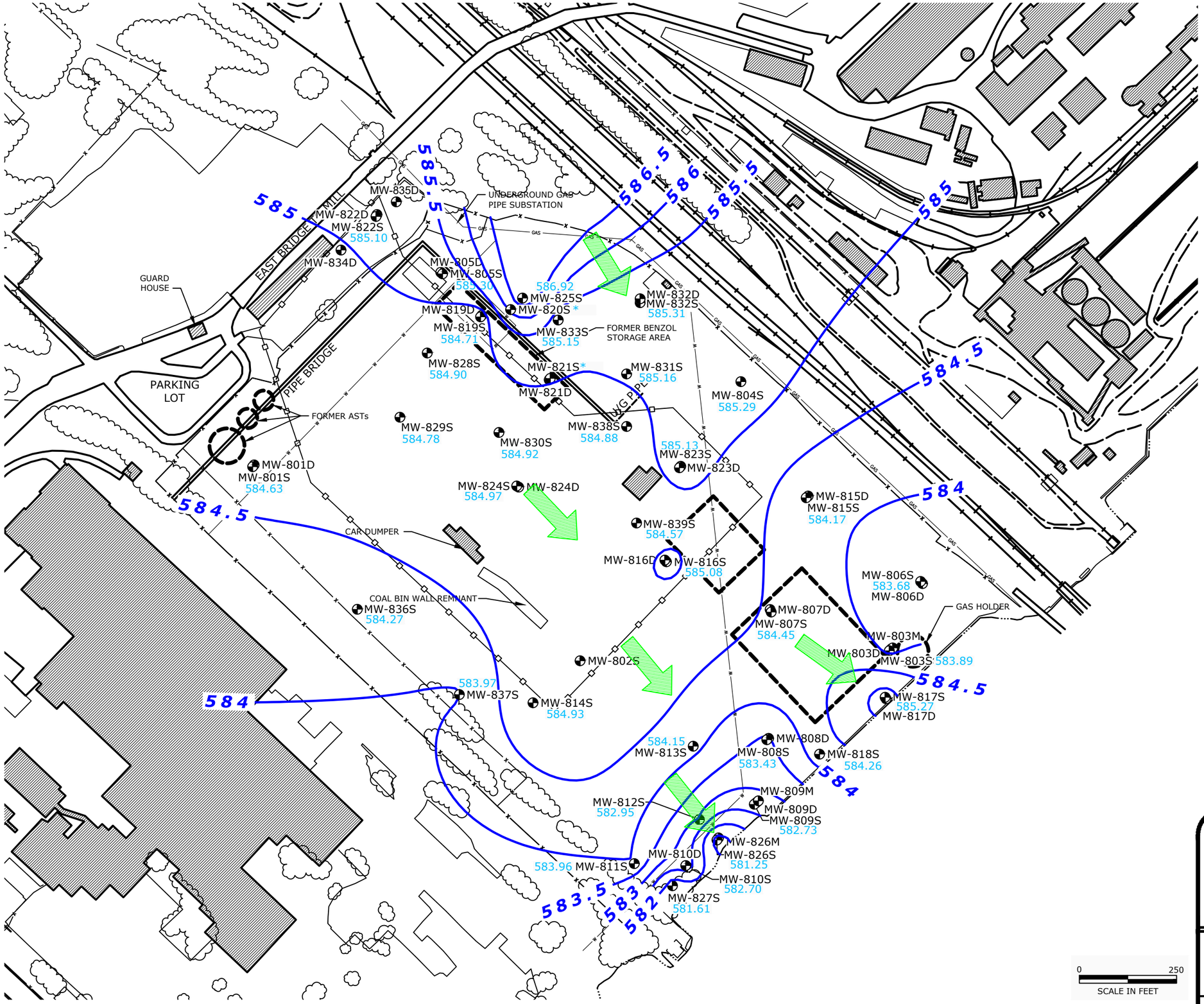
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

FIGURE 2-2

DRAFTED BY: HJW | DATE: 1/6/20 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-2_Geologic Cross Section B-B'.dwg



LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- 581.38 GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- FENCED-IN PARKING AREA
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O2, NO2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

* WELLS CONTAINING FREE PRODUCT EXCLUDED FROM MONITORING

SEWER, FIRE, WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE (SEPTEMBER 2017)

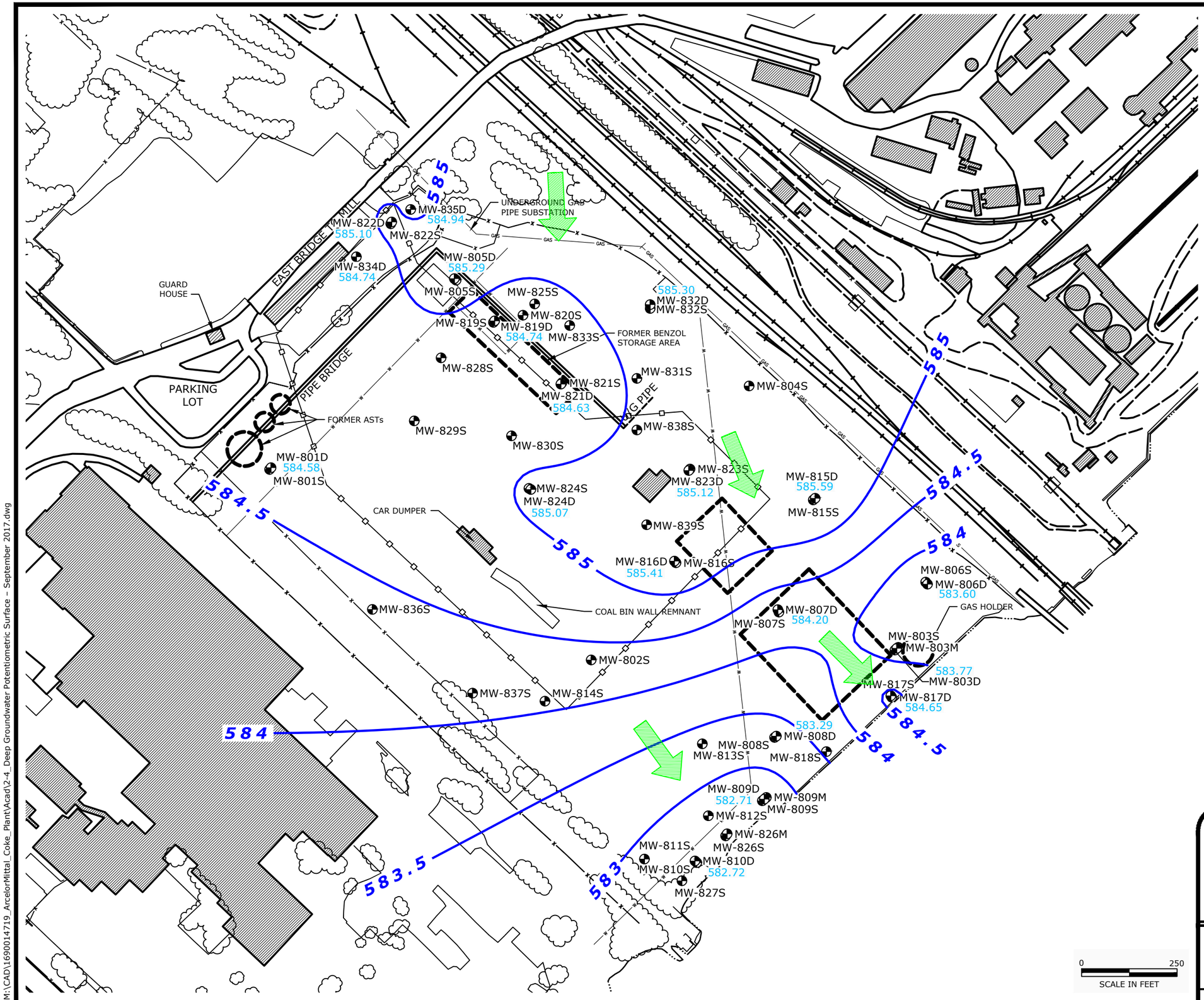
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

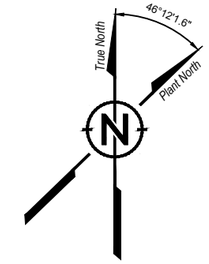
RAMBOLL

FIGURE 2-3

DRAFTED BY: HJW | DATE: 1/15/20 | 1690014719

L:\Loop Project Files_CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-3_Shallow Groundwater Potentiometric Surface – September 2017.dwg





LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- 581.38 GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- FENCED-IN PARKING AREA
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O2, NO2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE, WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

DEEP GROUNDWATER POTENTIOMETRIC SURFACE (SEPTEMBER 2017)

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

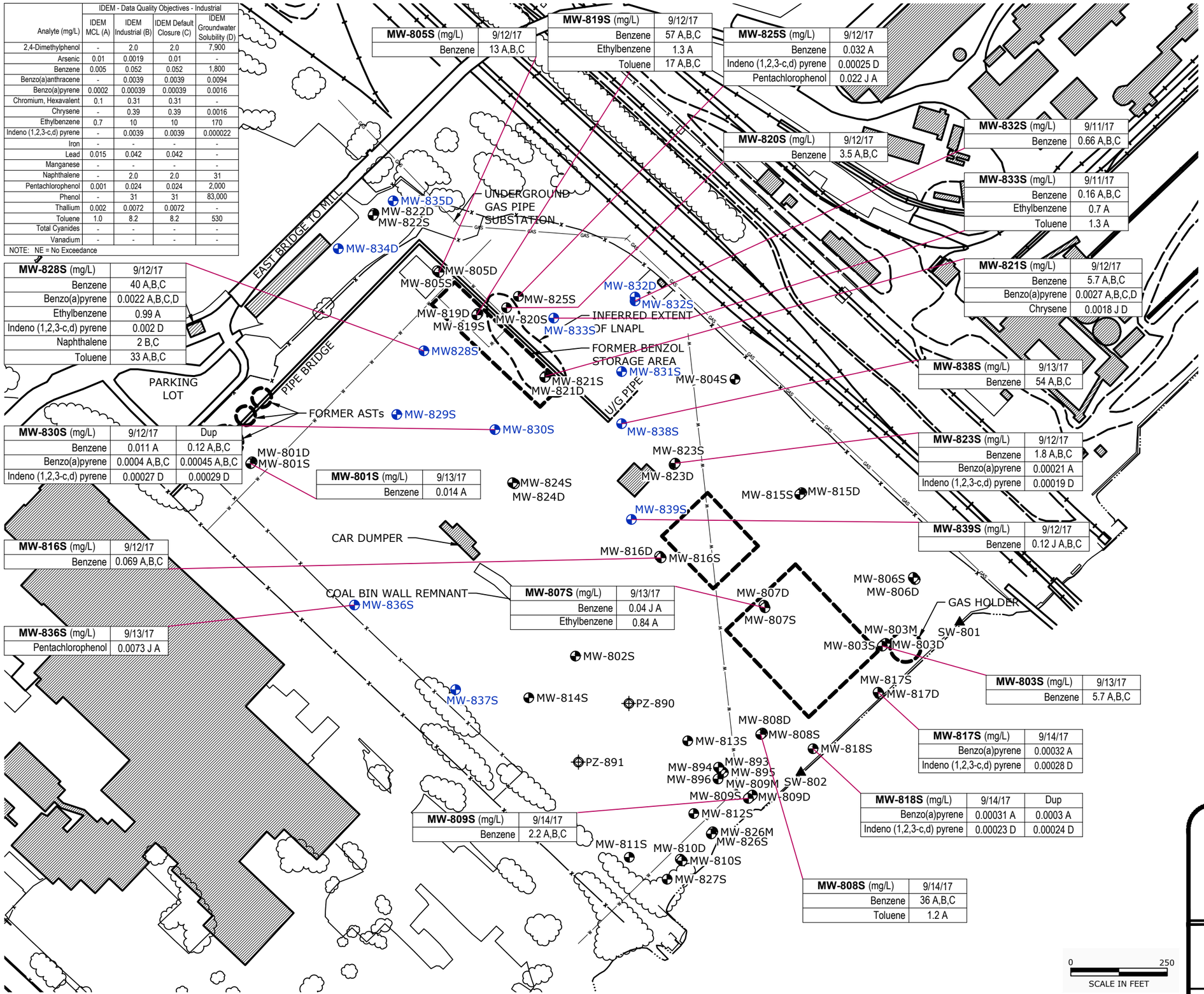
FIGURE **2-4**

DRAFTED BY: HJW | DATE: 1/6/20 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-4_Deep Groundwater Potentiometric Surface – September 2017.dwg

Analyte (mg/L)	IDEM - Data Quality Objectives - Industrial			
	IDEM MCL (A)	IDEM Industrial (B)	IDEM Default Closure (C)	IDEM Groundwater Solubility (D)
2,4-Dimethylphenol	-	2.0	2.0	7,900
Arsenic	0.01	0.0019	0.01	-
Benzene	0.005	0.052	0.052	1,800
Benzo(a)anthracene	-	0.0039	0.0039	0.0094
Benzo(a)pyrene	0.0002	0.00039	0.00039	0.0016
Chromium, Hexavalent	0.1	0.31	0.31	-
Chrysene	-	0.39	0.39	0.0016
Ethylbenzene	0.7	10	10	170
Indeno (1,2,3-c,d) pyrene	-	0.0039	0.0039	0.000022
Iron	-	-	-	-
Lead	0.015	0.042	0.042	-
Manganese	-	-	-	-
Naphthalene	-	2.0	2.0	31
Pentachlorophenol	0.001	0.024	0.024	2,000
Phenol	-	31	31	83,000
Thallium	0.002	0.0072	0.0072	-
Toluene	1.0	8.2	8.2	530
Total Cyanides	-	-	-	-
Vanadium	-	-	-	-

NOTE: NE = No Exceedance



MW-828S (mg/L)	9/12/17
Benzene	40 A,B,C
Benzo(a)pyrene	0.0022 A,B,C,D
Ethylbenzene	0.99 A
Indeno (1,2,3-c,d) pyrene	0.002 D
Naphthalene	2 B,C
Toluene	33 A,B,C

MW-830S (mg/L)	9/12/17	Dup
Benzene	0.011 A	0.12 A,B,C
Benzo(a)pyrene	0.0004 A,B,C	0.00045 A,B,C
Indeno (1,2,3-c,d) pyrene	0.00027 D	0.00029 D

MW-801S (mg/L)	9/13/17
Benzene	0.014 A

MW-816S (mg/L)	9/12/17
Benzene	0.069 A,B,C

MW-836S (mg/L)	9/13/17
Pentachlorophenol	0.0073 J A

MW-807S (mg/L)	9/13/17
Benzene	0.04 J A
Ethylbenzene	0.84 A

MW-809S (mg/L)	9/14/17
Benzene	2.2 A,B,C

MW-805S (mg/L)	9/12/17
Benzene	13 A,B,C

MW-819S (mg/L)	9/12/17
Benzene	57 A,B,C
Ethylbenzene	1.3 A
Toluene	17 A,B,C

MW-825S (mg/L)	9/12/17
Benzene	0.032 A
Indeno (1,2,3-c,d) pyrene	0.00025 D
Pentachlorophenol	0.022 J A

MW-820S (mg/L)	9/12/17
Benzene	3.5 A,B,C

MW-832S (mg/L)	9/11/17
Benzene	0.66 A,B,C

MW-833S (mg/L)	9/11/17
Benzene	0.16 A,B,C
Ethylbenzene	0.7 A
Toluene	1.3 A

MW-821S (mg/L)	9/12/17
Benzene	5.7 A,B,C
Benzo(a)pyrene	0.0027 A,B,C,D
Chrysene	0.0018 J D

MW-838S (mg/L)	9/13/17
Benzene	54 A,B,C

MW-823S (mg/L)	9/12/17
Benzene	1.8 A,B,C
Benzo(a)pyrene	0.00021 A
Indeno (1,2,3-c,d) pyrene	0.00019 D

MW-839S (mg/L)	9/12/17
Benzene	0.12 J A,B,C

MW-803S (mg/L)	9/13/17
Benzene	5.7 A,B,C

MW-817S (mg/L)	9/14/17
Benzo(a)pyrene	0.00032 A
Indeno (1,2,3-c,d) pyrene	0.00028 D

MW-818S (mg/L)	9/14/17	Dup
Benzo(a)pyrene	0.00031 A	0.0003 A
Indeno (1,2,3-c,d) pyrene	0.00023 D	0.00024 D

MW-808S (mg/L)	9/14/17
Benzene	36 A,B,C
Toluene	1.2 A

True North
Plant North
46°12'1.6"
N

LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- MONITORING WELL INSTALLED IN 2017
- PIEZOMETER (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE, WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

J = ESTIMATED CONCENTRATION BETWEEN METHOD DETECTION LIMIT AND REPORTING LIMIT

DATA QUALITY OBJECTIVE EXCEEDANCES IN SHALLOW GROUNDWATER - ORGANICS (SEPTEMBER 2017)

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

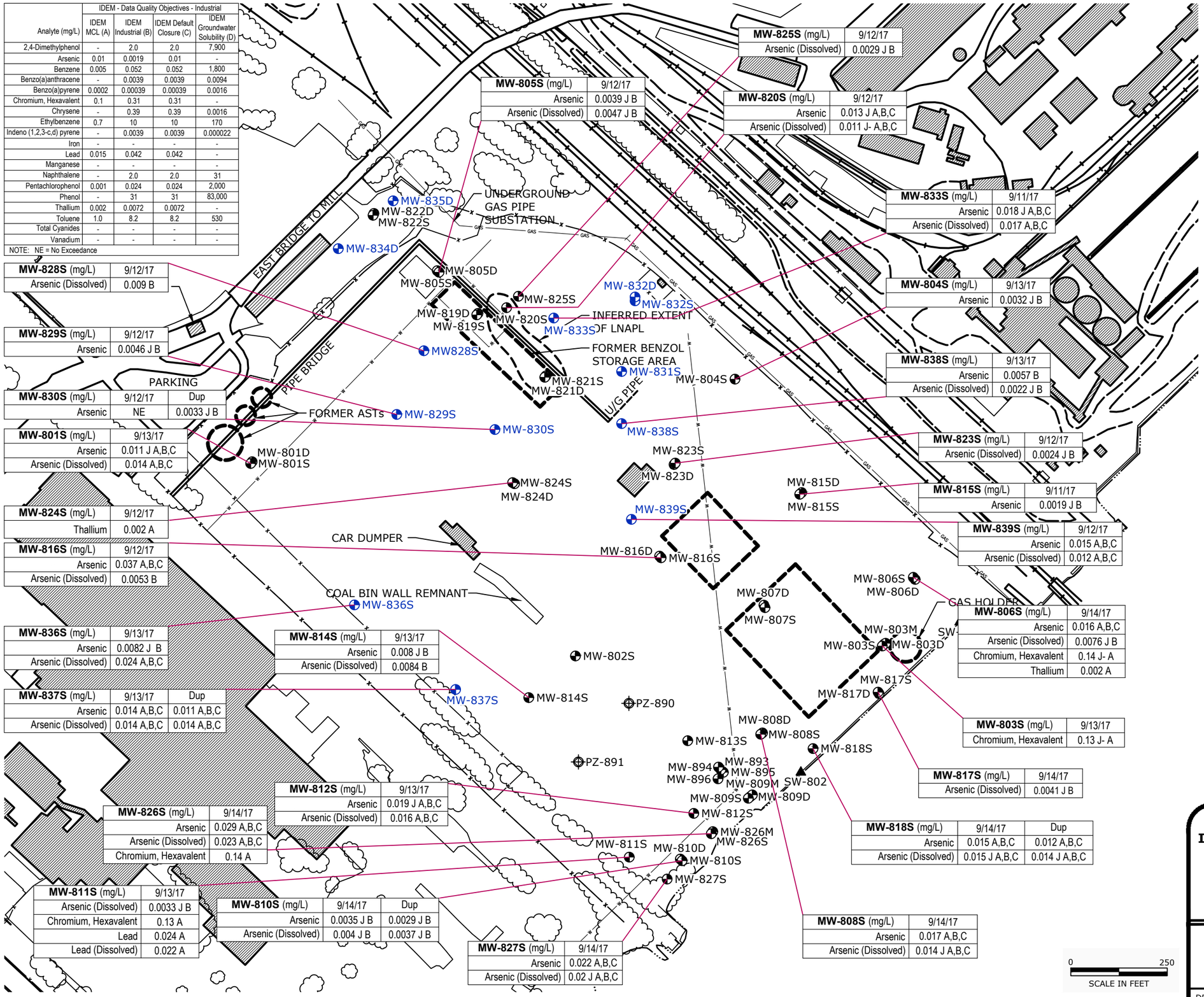
FIGURE **2-5A**

DRAFTED BY: HJW | DATE: 11/19/18 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-5A_DQO Exceedances in Shallow GW - Organics.dwg

Analyte (mg/L)	IDEM - Data Quality Objectives - Industrial			
	IDEM MCL (A)	IDEM Industrial (B)	IDEM Default Closure (C)	IDEM Groundwater Solubility (D)
2,4-Dimethylphenol	-	2.0	2.0	7,900
Arsenic	0.01	0.0019	0.01	-
Benzene	0.005	0.052	0.052	1,800
Benzo(a)anthracene	-	0.0039	0.0039	0.0094
Benzo(a)pyrene	0.0002	0.00039	0.00039	0.0016
Chromium, Hexavalent	0.1	0.31	0.31	-
Chrysene	-	0.39	0.39	0.0016
Ethylbenzene	0.7	10	10	170
Indeno (1,2,3-c,d) pyrene	-	0.0039	0.0039	0.000022
Iron	-	-	-	-
Lead	0.015	0.042	0.042	-
Manganese	-	-	-	-
Naphthalene	-	2.0	2.0	31
Pentachlorophenol	0.001	0.024	0.024	2,000
Phenol	-	31	31	83,000
Thallium	0.002	0.0072	0.0072	-
Toluene	1.0	8.2	8.2	530
Total Cyanides	-	-	-	-
Vanadium	-	-	-	-

NOTE: NE = No Exceedance



MW-825S (mg/L)	9/12/17
Arsenic (Dissolved)	0.0029 J B

MW-805S (mg/L)	9/12/17
Arsenic	0.0039 J B
Arsenic (Dissolved)	0.0047 J B

MW-820S (mg/L)	9/12/17
Arsenic	0.013 J A,B,C
Arsenic (Dissolved)	0.011 J- A,B,C

MW-833S (mg/L)	9/11/17
Arsenic	0.018 J A,B,C
Arsenic (Dissolved)	0.017 A,B,C

MW-828S (mg/L)	9/12/17
Arsenic (Dissolved)	0.009 B

MW-804S (mg/L)	9/13/17
Arsenic	0.0032 J B

MW-829S (mg/L)	9/12/17
Arsenic	0.0046 J B

MW-838S (mg/L)	9/13/17
Arsenic	0.0057 B
Arsenic (Dissolved)	0.0022 J B

MW-830S (mg/L)	9/12/17	Dup
Arsenic	NE	0.0033 J B

MW-801S (mg/L)	9/13/17
Arsenic	0.011 J A,B,C
Arsenic (Dissolved)	0.014 A,B,C

MW-823S (mg/L)	9/12/17
Arsenic (Dissolved)	0.0024 J B

MW-815S (mg/L)	9/11/17
Arsenic	0.0019 J B

MW-824S (mg/L)	9/12/17
Thallium	0.002 A

MW-839S (mg/L)	9/12/17
Arsenic	0.015 A,B,C
Arsenic (Dissolved)	0.012 A,B,C

MW-816S (mg/L)	9/12/17
Arsenic	0.037 A,B,C
Arsenic (Dissolved)	0.0053 B

MW-806S (mg/L)	9/14/17
Arsenic	0.016 A,B,C
Arsenic (Dissolved)	0.0076 J B
Chromium, Hexavalent	0.14 J- A
Thallium	0.002 A

MW-836S (mg/L)	9/13/17
Arsenic	0.0082 J B
Arsenic (Dissolved)	0.024 A,B,C

MW-814S (mg/L)	9/13/17
Arsenic	0.008 J B
Arsenic (Dissolved)	0.0084 B

MW-837S (mg/L)	9/13/17	Dup
Arsenic	0.014 A,B,C	0.011 A,B,C
Arsenic (Dissolved)	0.014 A,B,C	0.014 A,B,C

MW-803S (mg/L)	9/13/17
Chromium, Hexavalent	0.13 J- A

MW-817S (mg/L)	9/14/17
Arsenic (Dissolved)	0.0041 J B

MW-812S (mg/L)	9/13/17
Arsenic	0.019 J A,B,C
Arsenic (Dissolved)	0.016 A,B,C

MW-826S (mg/L)	9/14/17
Arsenic	0.029 A,B,C
Arsenic (Dissolved)	0.023 A,B,C
Chromium, Hexavalent	0.14 A

MW-818S (mg/L)	9/14/17	Dup
Arsenic	0.015 A,B,C	0.012 A,B,C
Arsenic (Dissolved)	0.015 J A,B,C	0.014 J A,B,C

MW-811S (mg/L)	9/13/17
Arsenic (Dissolved)	0.0033 J B
Chromium, Hexavalent	0.13 A
Lead	0.024 A
Lead (Dissolved)	0.022 A

MW-810S (mg/L)	9/14/17	Dup
Arsenic	0.0035 J B	0.0029 J B
Arsenic (Dissolved)	0.004 J B	0.0037 J B

MW-808S (mg/L)	9/14/17
Arsenic	0.017 A,B,C
Arsenic (Dissolved)	0.014 J A,B,C

MW-827S (mg/L)	9/14/17
Arsenic	0.022 A,B,C
Arsenic (Dissolved)	0.02 J A,B,C

46°12'1.6"
True North
Plant North
N

LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- MONITORING WELL INSTALLED IN 2017
- PIEZOMETER (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE, WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

J = ESTIMATED CONCENTRATION BETWEEN METHOD DETECTION LIMIT AND REPORTING LIMIT

J- = ESTIMATED CONCENTRATION BETWEEN METHOD DETECTION LIMIT AND REPORTING LIMIT BIASED LOW

DATA QUALITY OBJECTIVE EXCEEDANCES IN SHALLOW GROUNDWATER - INORGANICS (SEPTEMBER 2017)

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

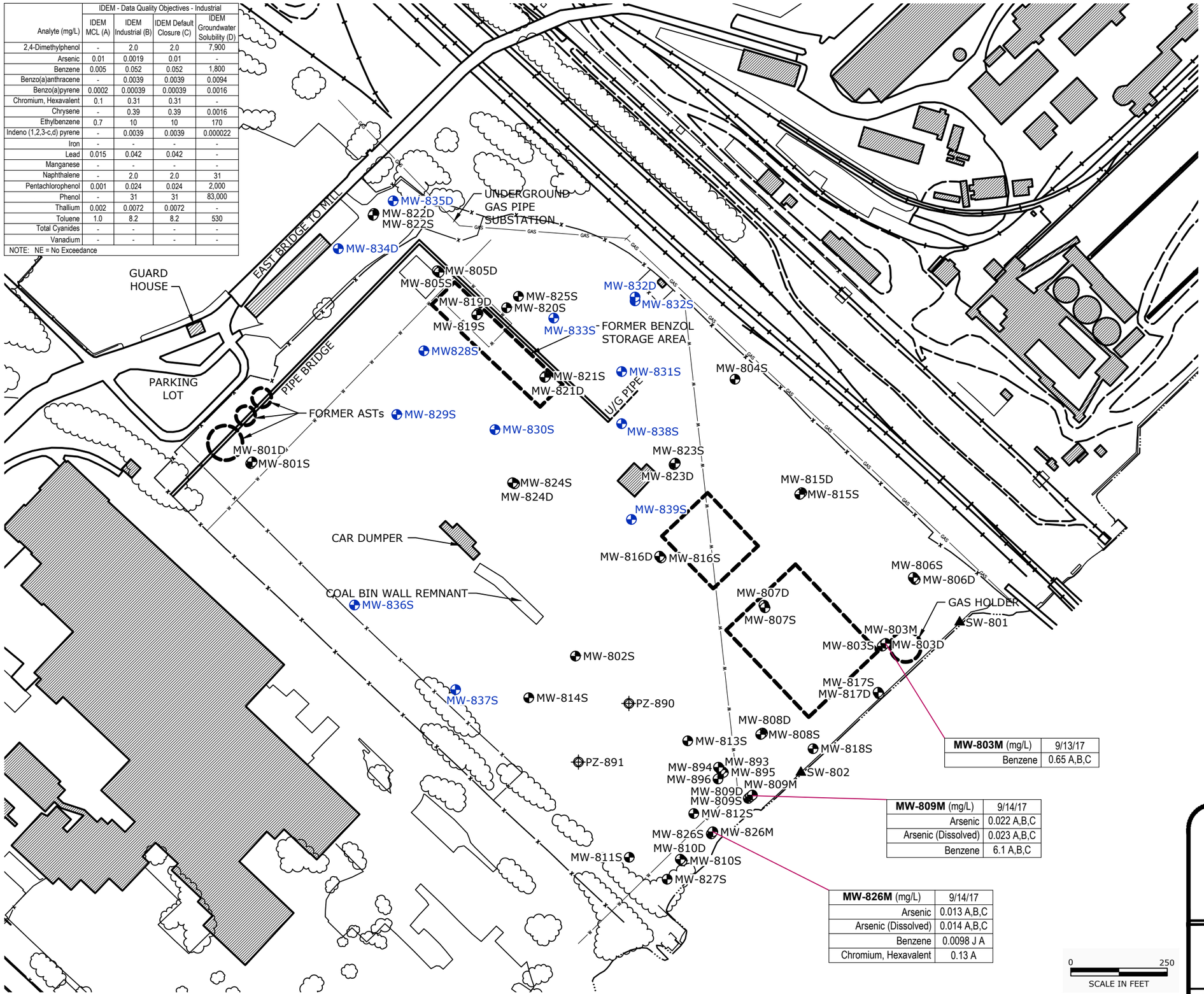
FIGURE **2-5B**

DRAFTED BY: HJW | DATE: 1/6/20 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-5B_DQO Exceedances in Shallow GW - Inorganics.dwg

Analyte (mg/L)	IDEM - Data Quality Objectives - Industrial			
	IDEM MCL (A)	IDEM Industrial (B)	IDEM Default Closure (C)	IDEM Groundwater Solubility (D)
2,4-Dimethylphenol	-	2.0	2.0	7,900
Arsenic	0.01	0.0019	0.01	-
Benzene	0.005	0.052	0.052	1,800
Benzo(a)anthracene	-	0.0039	0.0039	0.0094
Benzo(a)pyrene	0.0002	0.00039	0.00039	0.0016
Chromium, Hexavalent	0.1	0.31	0.31	-
Chrysene	-	0.39	0.39	0.0016
Ethylbenzene	0.7	10	10	170
Indeno (1,2,3-c,d) pyrene	-	0.0039	0.0039	0.000022
Iron	-	-	-	-
Lead	0.015	0.042	0.042	-
Manganese	-	-	-	-
Naphthalene	-	2.0	2.0	31
Pentachlorophenol	0.001	0.024	0.024	2,000
Phenol	-	31	31	83,000
Thallium	0.002	0.0072	0.0072	-
Toluene	1.0	8.2	8.2	530
Total Cyanides	-	-	-	-
Vanadium	-	-	-	-

NOTE: NE = No Exceedance



MW-803M (mg/L)	9/13/17
Benzene	0.65 A,B,C

MW-809M (mg/L)	9/14/17
Arsenic	0.022 A,B,C
Arsenic (Dissolved)	0.023 A,B,C
Benzene	6.1 A,B,C

MW-826M (mg/L)	9/14/17
Arsenic	0.013 A,B,C
Arsenic (Dissolved)	0.014 A,B,C
Benzene	0.0098 J A
Chromium, Hexavalent	0.13 A

LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- MONITORING WELL INSTALLED IN 2017
- PIEZOMETER (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE, WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

J = ESTIMATED CONCENTRATION BETWEEN METHOD DETECTION LIMIT AND REPORTING LIMIT

DATA QUALITY OBJECTIVE EXCEEDANCES IN INTERMEDIATE GROUNDWATER (SEPTEMBER 2017)

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

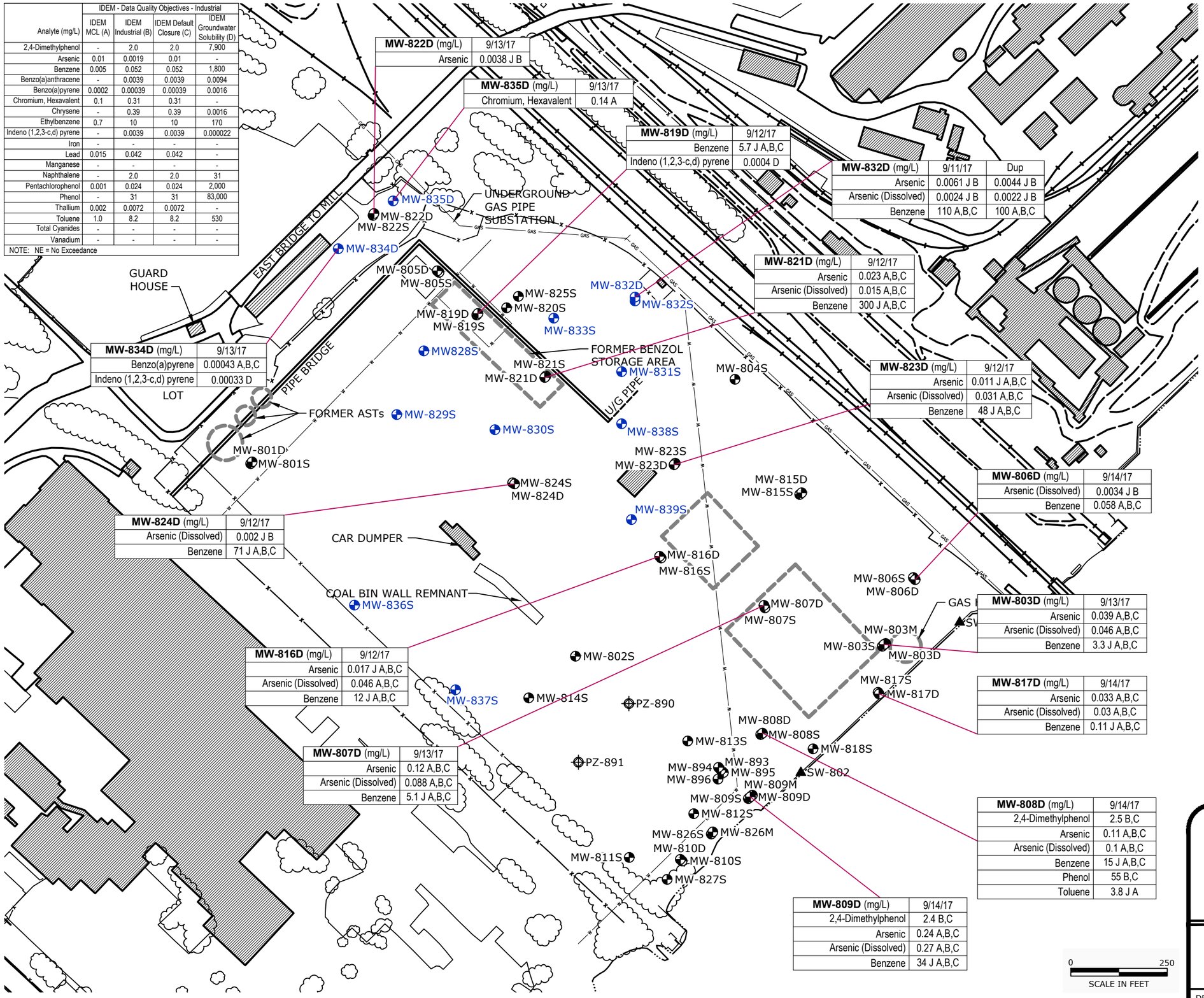
FIGURE **2-6**

DRAFTED BY: HJW | DATE: 1/6/20 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-6_DQO Exceedances in Int GW.dwg

Analyte (mg/L)	IDEM - Data Quality Objectives - Industrial			
	IDEM MCL (A)	IDEM Industrial (B)	IDEM Default Closure (C)	IDEM Groundwater Solubility (D)
2,4-Dimethylphenol	-	2.0	2.0	7,900
Arsenic	0.01	0.0019	0.01	-
Benzene	0.005	0.052	0.052	1,800
Benzo(a)anthracene	-	0.0039	0.0039	0.0094
Benzo(a)pyrene	0.0002	0.00039	0.00039	0.0016
Chromium, Hexavalent	0.1	0.31	0.31	-
Chrysene	-	0.39	0.39	0.0016
Ethylbenzene	0.7	10	10	170
Indeno (1,2,3-c,d) pyrene	-	0.0039	0.0039	0.000022
Iron	-	-	-	-
Lead	0.015	0.042	0.042	-
Manganese	-	-	-	-
Naphthalene	-	2.0	2.0	31
Pentachlorophenol	0.001	0.024	0.024	2,000
Phenol	-	31	31	83,000
Thallium	0.002	0.0072	0.0072	-
Toluene	1.0	8.2	8.2	530
Total Cyanides	-	-	-	-
Vanadium	-	-	-	-

NOTE: NE = No Exceedance



MW-822D (mg/L)	9/13/17
Arsenic	0.0038 J B

MW-835D (mg/L)	9/13/17
Chromium, Hexavalent	0.14 A

MW-819D (mg/L)	9/12/17
Benzene	5.7 J A,B,C
Indeno (1,2,3-c,d) pyrene	0.0004 D

MW-832D (mg/L)	9/11/17	Dup
Arsenic	0.0061 J B	0.0044 J B
Arsenic (Dissolved)	0.0024 J B	0.0022 J B
Benzene	110 A,B,C	100 A,B,C

MW-821D (mg/L)	9/12/17
Arsenic	0.023 A,B,C
Arsenic (Dissolved)	0.015 A,B,C
Benzene	300 J A,B,C

MW-834D (mg/L)	9/13/17
Benzo(a)pyrene	0.00043 A,B,C
Indeno (1,2,3-c,d) pyrene	0.00033 D

MW-823D (mg/L)	9/12/17
Arsenic	0.011 J A,B,C
Arsenic (Dissolved)	0.031 A,B,C
Benzene	48 J A,B,C

MW-806D (mg/L)	9/14/17
Arsenic (Dissolved)	0.0034 J B
Benzene	0.058 A,B,C

MW-824D (mg/L)	9/12/17
Arsenic (Dissolved)	0.002 J B
Benzene	71 J A,B,C

MW-803D (mg/L)	9/13/17
Arsenic	0.039 A,B,C
Arsenic (Dissolved)	0.046 A,B,C
Benzene	3.3 J A,B,C

MW-816D (mg/L)	9/12/17
Arsenic	0.017 J A,B,C
Arsenic (Dissolved)	0.046 A,B,C
Benzene	12 J A,B,C

MW-817D (mg/L)	9/14/17
Arsenic	0.033 A,B,C
Arsenic (Dissolved)	0.03 A,B,C
Benzene	0.11 J A,B,C

MW-807D (mg/L)	9/13/17
Arsenic	0.12 A,B,C
Arsenic (Dissolved)	0.088 A,B,C
Benzene	5.1 J A,B,C

MW-808D (mg/L)	9/14/17
2,4-Dimethylphenol	2.5 B,C
Arsenic	0.11 A,B,C
Arsenic (Dissolved)	0.1 A,B,C
Benzene	15 J A,B,C
Phenol	55 B,C
Toluene	3.8 J A

MW-809D (mg/L)	9/14/17
2,4-Dimethylphenol	2.4 B,C
Arsenic	0.24 A,B,C
Arsenic (Dissolved)	0.27 A,B,C
Benzene	34 J A,B,C

True North
Plant North
46°12'1.6"
N

LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- MONITORING WELL INSTALLED IN 2017
- PIEZOMETER (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE, WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

J = ESTIMATED CONCENTRATION BETWEEN METHOD DETECTION LIMIT AND REPORTING LIMIT

B = ANALYTE DETECTED IN LABORATORY METHOD BLANK

DATA QUALITY OBJECTIVE EXCEEDANCES IN DEEP GROUNDWATER (SEPTEMBER 2017)

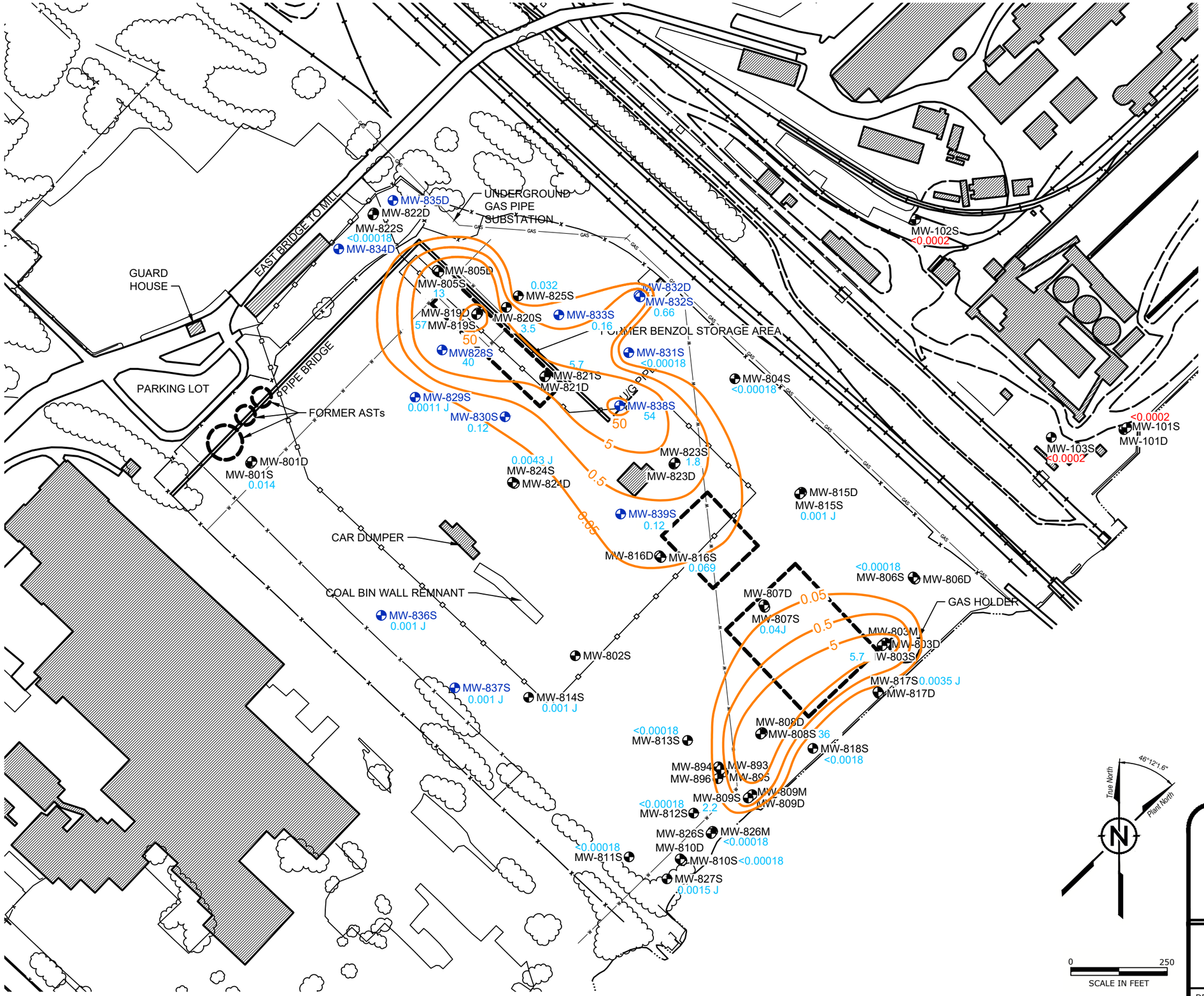
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

FIGURE **2-7**

DRAFTED BY: HJW | DATE: 11/19/18 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-7_DQO Exceedances in Deep GW.dwg



LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- MONITORING WELL INSTALLED IN 2017
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- FENCED-IN PARKING AREA
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA
- BENZENE ISOCONCENTRATION (DASHED WHERE INFERRED)
- 5.1 BENZENE CONCENTRATION (mg/L) - SEPTEMBER 2017
- <0.0002 BENZENE CONCENTRATION (mg/L) - JULY 2005

NOTES:

1. SEWER, FIRE, WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.
2. LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.
3. IDEM DEFAULT CLOSURE LEVEL FOR BENZENE = 0.052 mg/L.

BENZENE ISOCONCENTRATIONS IN SHALLOW GROUNDWATER (SEPTEMBER 2017)

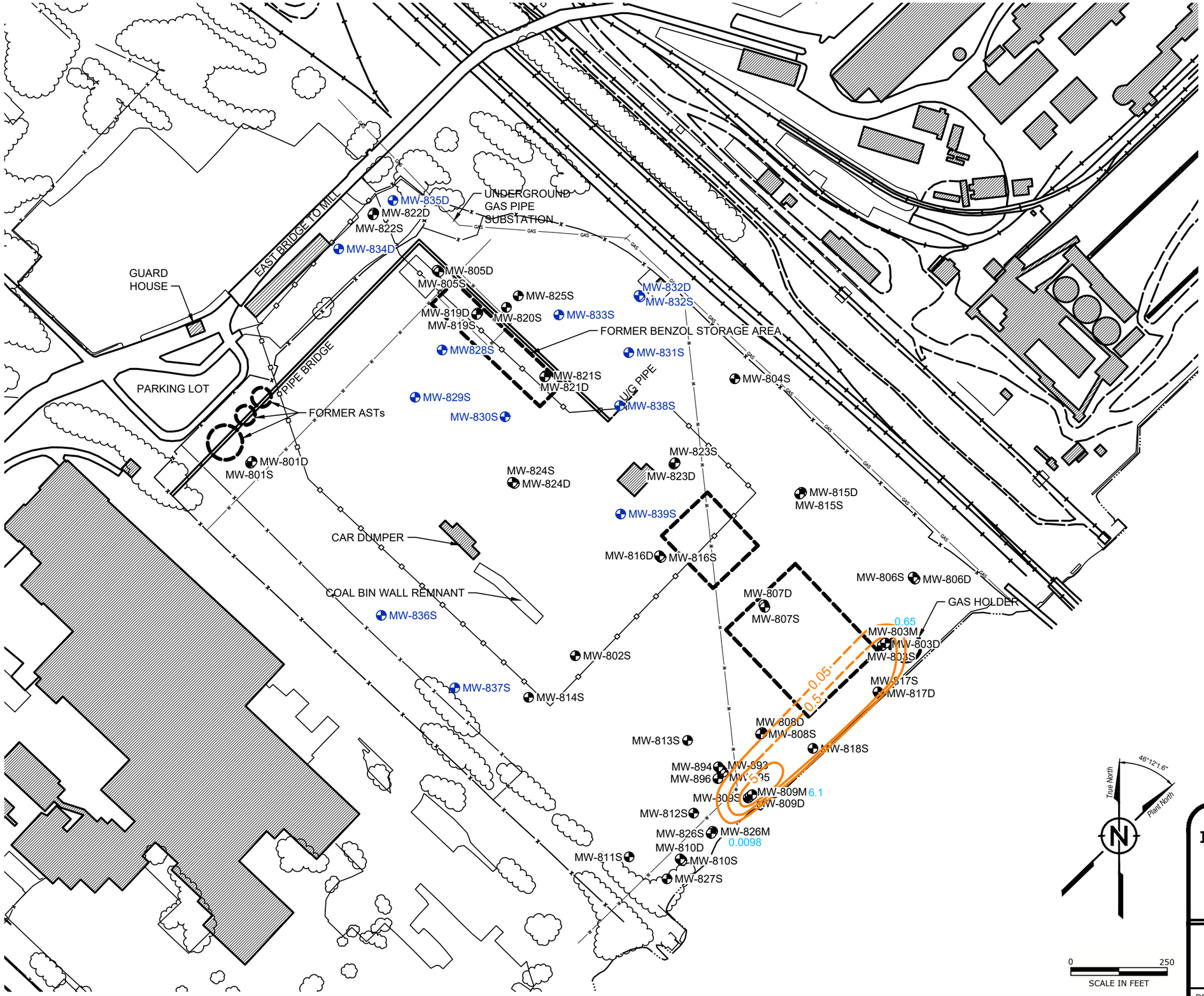
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

FIGURE 2-8

DRAFTED BY: HJW | DATE: 1/6/20 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-8_Shallow Benzene Isoconcentration Map – September 2017.dwg



LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- MONITORING WELL INSTALLED IN 2017
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- FENCED-IN PARKING AREA
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA
- BENZENE ISOCONCENTRATION (DASHED WHERE INFERRED)
- 5.1 BENZENE CONCENTRATION (mg/L)

NOTES:

1. SEWER, FIRE, WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.
2. LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.
3. IDEM DEFAULT CLOSURE LEVEL FOR BENZENE = 0.052 mg/L.

BENZENE ISOCONCENTRATIONS IN INTERMEDIATE GROUNDWATER (SEPTEMBER 2017)

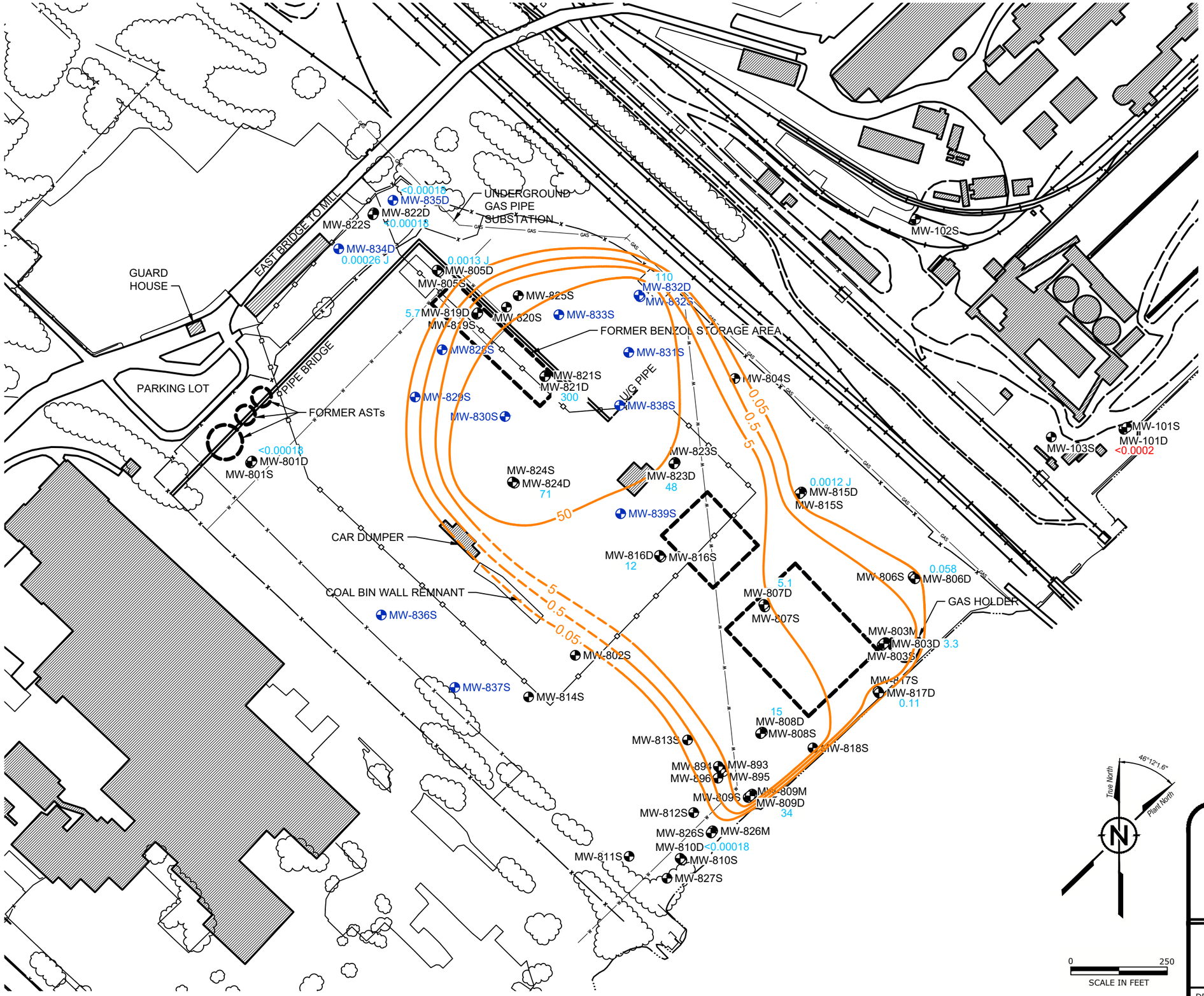
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

FIGURE **2-9**

DRAFTED BY: HJW | DATE: 1/6/20 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-9_Intermediate Benzene Isoconcentration Map – September 2017.dwg



LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- MONITORING WELL INSTALLED IN 2017
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- FENCED-IN PARKING AREA
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA
- BENZENE ISOCONCENTRATION (DASHED WHERE INFERRED)
- 5.1 BENZENE CONCENTRATION (mg/L) - SEPTEMBER 2017
- <0.0002 BENZENE CONCENTRATION (mg/L) - JULY 2005

NOTES:

1. SEWER, FIRE, WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.
2. LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.
3. IDEM DEFAULT CLOSURE LEVEL FOR BENZENE = 0.052 mg/L.

BENZENE ISOCONCENTRATIONS IN DEEP GROUNDWATER (SEPTEMBER 2017)

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL

FIGURE **2-10**

DRAFTED BY: HJW | DATE: 1/6/20 | 1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\2-10_Deep Benzene Isoconcentration Map – September 2017.dwg

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\3-1_Conceptual Site Model Diagram.dwg

Primary Unit	Primary Release	Secondary Unit	Secondary Release Mechanism	Contact Medium	Exposure Route	Receptor: Human: Current Site Worker	Receptor: Human: Future Site Worker	Receptor: Human: Recreational Visitor	Receptor: Aquatic: Invertebrates and Fish	Receptor: Aquatic: Birds
Former Coke Plant Area	Subsurface Accumulation of LNAPL	Subsurface Slag-Fill/Soil	Migration	Groundwater	Ingestion	N	N	N	N	N
					Direct Contact	N	N	N	N	N
				Surface Water Ship Canal	Inhalation	N	N	Y	N	N
					Ingestion	N	N	Y	Y_b	Y
					Direct Contact	N	N	Y	Y	Y
				Fish Consumption	Ingestion	N_a	N_a	Y	Y	Y
				Lake Michigan	Ingestion	N	N	N	N	N
					Direct Contact	N	N	N	N	N
				Subsurface Slag-Fill/Soil	Ingestion	N	Y_C	N	N	N
					Direct Contact	N	Y_C	N	N	N
				Outdoor Air	Inhalation	Y	Y	N	N	N
				Indoor Air	Inhalation	N	Y_C	N	N	N

Key:
Y The pathway is complete and is quantitatively evaluated in this environmental risk characterization
I The pathway is potentially complete but insignificant relative to other pathways, and is not evaluated further
N The pathway is not complete and is not evaluated
a As described in text the Ship Canal is not expected to support recreational fishing.
b Gill exchange
c Deed restriction will notify future property users of site risks such that appropriate protection is used during construction activities.

Notes:
A Site model diagram taken from "Data Quality Objectives Process for Hazardous Waste Site Investigations," EPA QA/G-4HW, January 2000.
Y = Yes, N = No, UNK = Unknown
LNAPL = Light Non-Aqueous Phase Liquid

RAMBOLL

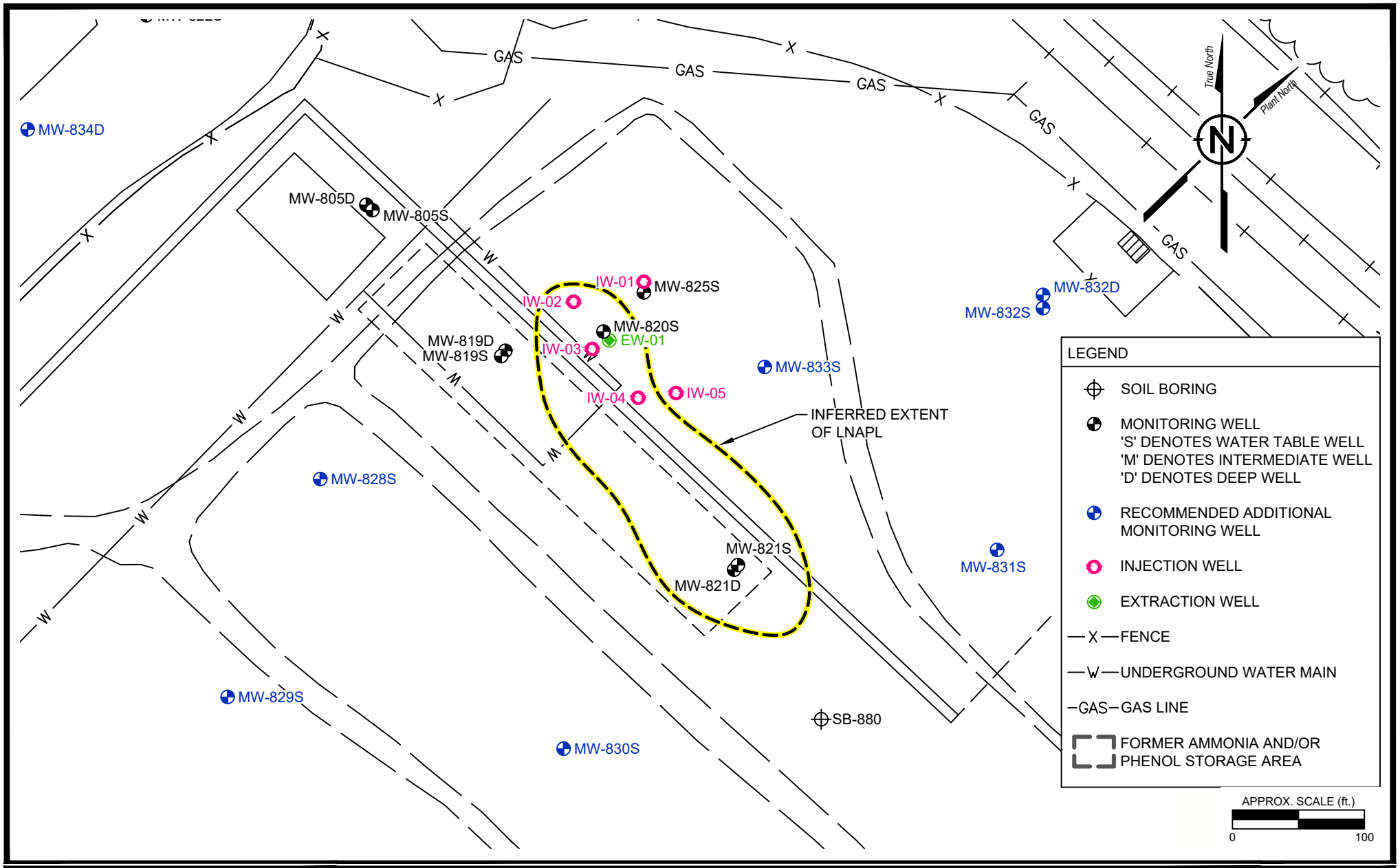
DRAFTED BY: CKL | DATE: 1/6/20

CONCEPTUAL SITE MODEL DIAGRAM FOR HUMAN AND ECOLOGICAL RECEPTORS
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

FIGURE
3-1

1690014719

M:\CAD\1690014719_ArcelorMittal_Coke_Plant\Acad\6-1_Inferred Extent of LNAPL.dwg



RAMBOLL

DRAFTED BY: ELS/APR/HJW

DATE: 1/6/20

INFERRED EXTENT OF LNAPL

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

FIGURE
6-1

1690014719

APPENDIX A

ENVIRONMENTAL INDICATOR DETERMINATION

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA725)

Current Human Exposures Under Control

Facility Name: Former Coke Plant Area

Facility Address: ArcelorMittal Indiana Harbor LLC West Mill Facility, East Chicago, Indiana

Facility EPA ID #: IND 005 462 601

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   ☒ If yes, check here and continue with #2 below.

   ☐ If no, re-evaluate existing data, or

   ☐ If data are not available, skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

On behalf of Tecumseh Redevelopment, Inc. (Tecumseh), Ramboll US Corporation (Ramboll) prepared a *Remedial Study Report* dated February 2020 related to the Former Coke Plant property, which is owned by Tecumseh. Numerous subsurface investigations have been conducted to date at the site in response to an October 2003 United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) 3013 Order for the Tecumseh property and the ArcelorMittal Indiana Harbor West Mill. These investigations have revealed the presence of light non-aqueous phase liquid (LNAPL) at the site. The USEPA RCRA 3013 Order is limited to monitoring, testing, analysis, and reporting to document the nature and extent of hazardous substances at the site.

The *Remedial Study Report (Revision 1)* contained herein was prepared as a follow-up to Ramboll's June 2019 *Pre-Design Report Addendum for the Former Coke Plant Area* and as requested by the USEPA in the subsequent USEPA approval letter dated July 29, 2019. Pursuant to an USEPA letter dated April 28, 2015, the purpose of the *Remedial Study Report* is to identify, evaluate, and recommend corrective measures to remove LNAPL identified at the site.

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EIs) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility [i.e., site-wide]).

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Code (CA725)

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration/Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	___	_x_	___	_____
Air (indoors)[2]	___	_x__	___	_____
Surface Soil (e.g., <2 ft)	___	_x__	___	_____
Surface Water	___	_x__	___	_____
Sediment	___	_x__	___	_____
Subsurf. Soil (e.g., >2 ft)	___	_x__	___	_____
Air (outdoors)	___	_x__	___	_____

☒ If no (for all media), skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

☐ If yes (for any media), continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

☐ If unknown (for any media), skip to #6 and enter "IN" status code.

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[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Code (CA725)

Rationale and References

A primary fate and transport mechanism at the site is the conveyance of constituents with groundwater, as groundwater discharges to Indiana Harbor ship canal surface water via the constructed gap in the sheet pile wall. Both LNAPL and constituents dissolved in groundwater may be conveyed with groundwater. Several potential fate and transport mechanisms are deemed insignificant for human and ecological receptors. In particular, overland runoff and windblown dust are not significant fate and transport mechanisms because the majority of the site is covered by coarse-grained fill materials that restrict mobilization of surface soil particles. Bank erosion is not a significant fate and transport mechanism because the shoreline is largely covered by hardscaping to prevent erosion, except in the constructed gap area.

The November 2015 *Focused Human Health Risk Assessment* (HHRA) for the Former Coke Plant did not identify any constituents in groundwater that pose an unacceptable risk for human receptors. After submission and acceptance of the HHRA, an additional groundwater sampling and analysis event was completed in September 2017 as part of the Pre-Design Investigation. As indicated in the December 2018 *Pre-Design Report*, the updated HHRA included the following seven steps: Step 1: identification of non-detected constituents in groundwater, which are not considered further; Step 2 and Step 3: comparison of maximum detected constituent concentrations with Safe Drinking Water Act Maximum Contaminant Levels (MCLs), and Risk Based Concentrations (RBCs)[3], respectively; and Step 4: comparison of the 95 percent Upper Confidence Limit (UCL) on-site groundwater concentrations with their respective MCLs, or Risk-Based Concentrations (RBCs). Site groundwater concentrations included data from 2012, 2013, and 2017 and were considered first based on maximum concentrations (Steps 1 to 3) and then based on a 95 percent UCL on the mean (UCL) (Step 4).

The UCL used in Step 4 was based on wells most proximate to the constructed gap in the sheet piling (i.e., MW-827S, MW-810S, MW-826S, MW-826M, MW-809S, and MW-809M), and wells which were used to define the UCLs for arsenic, benzene, and sodium (i.e., MW-803S, MW-808S, MW-808D, MW-809D, and MW-817S). In these first four steps, the dilution of groundwater constituents in migration from groundwater to surface water was represented through application of a 10-fold dilution factor that was applied to the MCL and RBCs for non-bioaccumulative constituents. Step 5 was conducted for arsenic, benzene, and sodium and included comparison of the their respective UCLs calculated based on a more representative set of nine wells (i.e., excluding deep wells MW-808D and MW-809D) and a site-specific dilution factor of 3,250. As indicated in the December 2018 *Pre-Design Report*, no constituents had UCLs greater than their respective screening levels in Step 5 indicating risks were within acceptable levels.

Potential risks related to consumption of fish that bioaccumulate constituents from groundwater were considered in Steps 6 and 7 through comparison with RBCs calculated using the USEPA (2018) Regional Screening Level (RSL) calculator and assuming 32 gallons per day (g/day), for 350 days per year for 26 years, which is equivalent to 50 eight-ounce meals per year. In Step 6, RBCs for fish consumption were compared with estimated fish tissue concentrations derived using the 95 percent UCL on the mean calculated based on the 11 wells described in Step 4, above. This analysis determined that arsenic concentrations in fish tissue would exceed the screening RBC for fish consumption.

Only arsenic was considered further in Step 7, which included comparison of the arsenic tissue concentration derived based on the UCL from nine wells and the site-specific dilution factor. Consistent with the findings of the November 2015 HHRA, these analyses indicated that consumption of 50 meals per year of fish that have bioaccumulated constituents from the Ship Canal would not represent an unacceptable human health risk.

[3] RBCs for surface water and for fish tissue were updated for this assessment using the USEPA Regional Screening Level calculator and the same assumptions as applied in the 2016 HHRA.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Code (CA725)

In addition to the groundwater quality evaluation presented above, the December 2018 *Pre-Design Report* compared slag-fill data obtained in 2012 and in 2017 with DQOs and Screening Levels. In this comparison, the data for the shallowest slag-fill interval (less than 2 feet bgs) and the DQOs and Screening Levels for direct contact with slag-fill were concluded to be the most relevant for consideration at this site. While several PAHs had concentrations in at least one location that were greater than the 2009 direct contact values, only benzo(a)pyrene had a concentration greater than the 2018 IDEM Screening Levels. A UCL of 11.7 milligrams per kilogram (mg/kg) was calculated for benzo(a)pyrene based on all available surface soil data for 2012 and 2017. This site UCL is lower than the 2018 IDEM screening value of 21 mg/kg for benzo(a)pyrene, indicating that risks are within acceptable levels.

The site is currently used as a construction staging area, such that volatilization is not a current fate and transport mechanism for human receptors because no buildings are present on the Former Coke Plant. The off-site extent of benzene-impacted groundwater is defined, given the absence of benzene impacts in monitoring wells located to the north of the railroad corridor that is adjacent to the Former Coke Plant. As such, there is no vapor intrusion risk to buildings located within this portion of the site. Moreover, the buildings located within this portion of the site are unoccupied. The vapor intrusion pathway is therefore incomplete, and exposure to volatile constituents in outdoor air is currently being addressed through institutional controls and by adherence to Occupational Safety and Health Administration (OSHA) standards. The vapor intrusion pathway will be evaluated in the event of future site construction. Triggers for, and timing of, a vapor intrusion pathway risk evaluation will be detailed in the proposed site deed restriction.

Despite the use of numerous health protective assumptions, the December 2018 *Pre-Design Report* did not identify any constituents in groundwater or slag-fill/soil that pose an unacceptable risk for human receptors. In addition, based on relatively high estimated advective groundwater flow rates at the site, the future LNAPL source remedial action should result in reduction in downgradient constituent concentrations within a reasonable timeframe. As such, the HHRA overestimates site concentrations and risks and, therefore, is considered to be highly health protective of site users. Moreover, groundwater on the peninsula is not used as drinking water (installation of water-supply wells is prohibited by institutional controls) and site groundwater does not impact any drinking water source. A groundwater use restriction will be implemented for the entire facility. In addition, a deed restriction will be implemented to ensure that, should ArcelorMittal vacate the site, future users of the property will understand site risks and use appropriate protection during intrusive construction activities.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

Contaminated Media	Residents	Workers	Day Care	Construction	Trespassers	Recreation	Food[4]
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface, e.g., >2 ft)							
Air (outdoors)							

[4] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Code (CA725)

Instructions for Summary Exposure Pathway Evaluation Table

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.
2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("____"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- ☐ If no (pathways are not complete for any contaminated media-receptor combination), skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- ☐ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination), continue after providing supporting explanation.
- ☐ If unknown (for any "Contaminated" Media - Human Receptor combination), skip to #6 and enter "IN" status code

Rationale and References

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[5] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

- ☐ If no (exposures cannot be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway), skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."
- ☐ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway), continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."
- ☐ If unknown (for any complete pathway), skip to #6 and enter "IN" status code

Rationale and References

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[5] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Code (CA725)

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

   ☐ If yes (all "significant" exposures have been shown to be within acceptable limits), continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

   ☐ If no (there are current exposures that can be reasonably expected to be "unacceptable"), continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

   ☐ If unknown (for any potentially "unacceptable" exposure), continue and enter "IN" status code.

Rationale and References

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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

   ☒ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Former Coke Plant Facility, EPA ID # IND 005 462 601, located at the ArcelorMittal Indiana Harbor LLC West Facility, East Chicago, Indiana, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

   ☐ NO - "Current Human Exposures" are NOT "Under Control."

   ☐ IN - More information is needed to make a determination.

Completed by (signature) _____ Date _____
(print) _____
(title) _____

Supervisor (signature) _____ Date _____
(print) _____
(title) _____
(EPA Region or State) _____

Locations where References may be found:

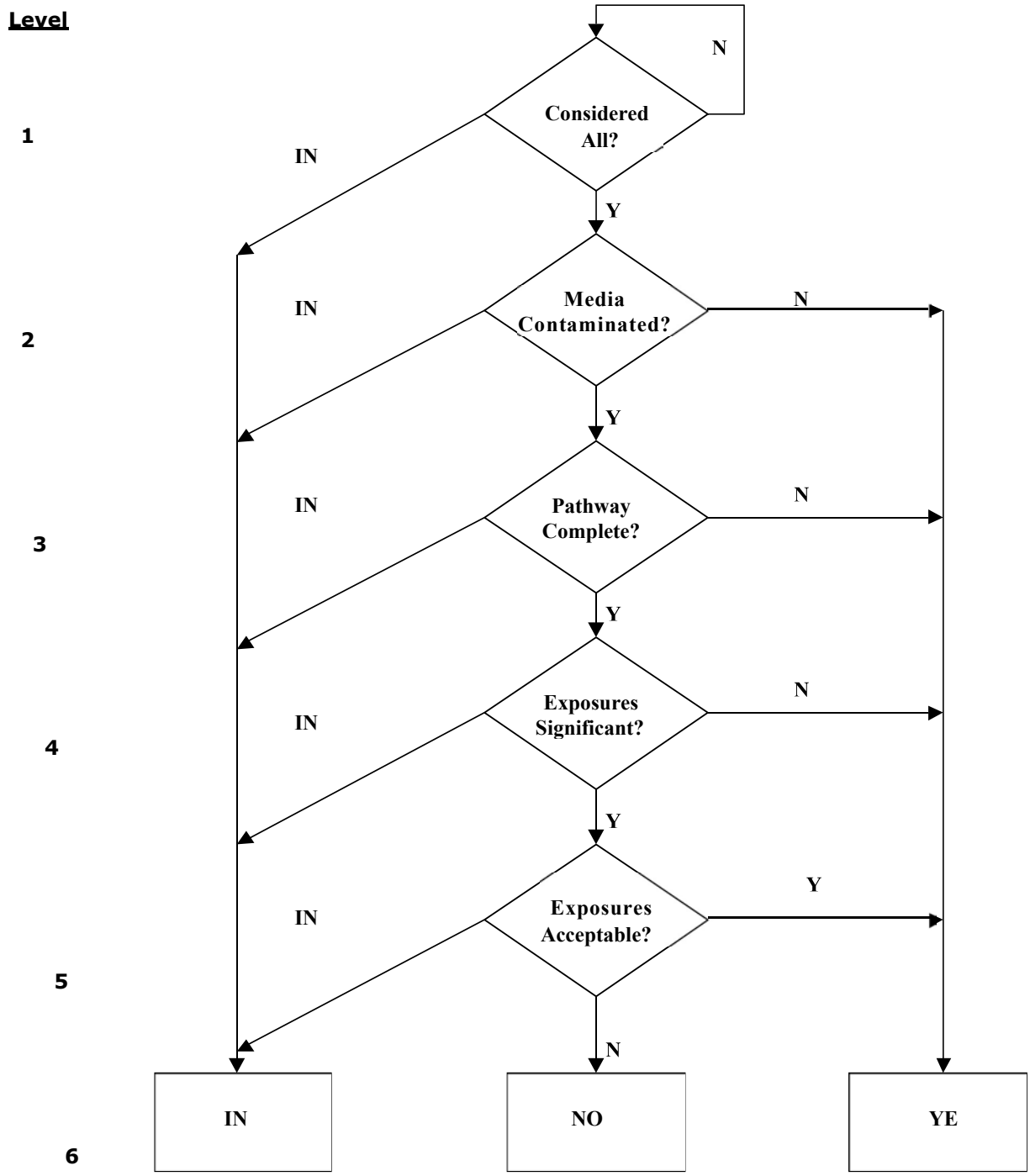
_____

Contact telephone and e-mail numbers
(name) _____
(phone #) _____
(e-mail) _____

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Facility Name: _____
EPA ID#: _____
City/State: _____

CURRENT HUMAN EXPOSURES UNDER CONTROL (CA 725)



DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: Former Coke Plant Area

Facility Address: ArcelorMittal Indiana Harbor LLC West Mill Facility, East Chicago, Indiana

Facility EPA ID #: IND 005 462 601

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   ☒ If yes, check here and continue with #2 below.

   ☐ If no, re-evaluate existing data, or

   ☐ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

On behalf of Tecumseh Redevelopment, Inc. (Tecumseh), Ramboll US Corporation (Ramboll) prepared a *Remedial Study Report* dated February 2020 related to the Former Coke Plant property, which is owned by Tecumseh. Numerous subsurface investigations have been conducted to date at the site in response to an October 2003 United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) 3013 Order for the Tecumseh property and the ArcelorMittal Indiana Harbor West Mill. These investigations have revealed the presence of light non-aqueous phase liquid (LNAPL) at the site. The USEPA RCRA 3013 Order is limited to monitoring, testing, analysis, and reporting to document the nature and extent of hazardous substances at the site.

The *Remedial Study Report (Revision 1)* contained herein was prepared as a follow-up to Ramboll's June 2019 *Pre-Design Report Addendum for the Former Coke Plant Area* and as requested by the USEPA in the subsequent USEPA approval letter dated July 29, 2019. Pursuant to an USEPA letter dated April 28, 2015, the purpose of the *Remedial Study Report* is to identify, evaluate, and recommend corrective measures to remove LNAPL identified at the site.

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EIs) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility [i.e., site-wide]).

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS Code (CA750)

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration/Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[6] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

   ☐ If yes, continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

   ☒ If no, skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

   ☐ If unknown, skip to #8 and enter "IN" status code.

Rationale and References

A primary fate and transport mechanism at the site is the conveyance of constituents with groundwater, as groundwater discharges to Indiana Harbor ship canal surface water via the constructed gap in the sheet pile wall. Both LNAPL and constituents dissolved in groundwater may be conveyed with groundwater. Discharge of groundwater to bottom sediments in the Indiana Harbor Ship Canal is not a significant fate and transport mechanism based on the following observations. Previously-detected groundwater mounding near the sheet pile barrier relative to groundwater levels near the constructed gap, coupled with reported minimal horizontal groundwater flow in the underlying clay confining unit (within which the sheet pile barrier is anchored), lead to the conclusion that groundwater is discharging to the canal through the constructed gap in the sheet pile wall, rather than to bottom sediments in the Indiana Harbor Ship Canal. It should also be noted that the Canal and Turning Basin sediment is being remediated by the Army Corps of Engineers with funds supplied by multiple parties. Moreover, the contribution, if any, from the Former Coke Plant cannot be readily distinguished from the documented current and historic upstream sediment loading from other industrial facilities.

The November 2015 *Screening Level Ecological Risk Assessment* (SLERA) for the Former Coke Plant concluded that significant ecological risks are not predicted for aquatic organisms exposed to constituents in groundwater that are released to the ship canal via the constructed gap in the sheet pile wall. After submission and acceptance of the SLERA, additional groundwater samples were collected and analyzed in September 2017 as part of the Pre-Design Investigation. As indicated in the December 2018 *Pre-Design Report*, the Tier 3 methodologies utilized therein were virtually identical to those used in the 2015 SLERA

[6] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

(other than using the updated dataset). For the constituents considered in the refined risk analysis, Tier 3 concentrations were generated based on the 95 percent UCL (or maximum) concentrations from the nine wells (2012, 2013, and 2017 data combined) divided by the estimated dilution factor of 3,250.

Hazard Quotients (HQs) were calculated as the ratios of the Tier 3 surface water concentrations to refined screening values. HQs could not be calculated for bis(2-chloroethoxy)methane or methyl chloride because screening values were not identified for these two constituents. HQs do not exceed 1 for the remaining 17 constituents, indicating that adverse effects are unlikely and no further ecological evaluation is warranted. Both bis(2-chloroethoxy)methane and methyl chloride were evaluated qualitatively as described in the 2015 SLERA. In summary, the 2017 groundwater sampling data confirmed the previous conclusion that significant ecological risks are not predicted for aquatic organisms exposed to constituents in groundwater that are released to the ship canal via the constructed gap in the sheet pile wall.

The November 2015 *Focused Human Health Risk Assessment* (HHRA) for the Former Coke Plant did not identify any constituents in groundwater that pose an unacceptable risk for human receptors. After submission and acceptance of the HHRA, an additional groundwater sampling and analysis event was completed in September 2017 as part of the Pre-Design Investigation. As indicated in the December 2018 *Pre-Design Report*, the updated HHRA included seven steps: Step 1: identification of non-detected constituents in groundwater, which are not considered further; Steps 2 and 3: comparison of maximum detected constituent concentrations with MCLs, and Risk Based Concentrations (RBCs)[7], respectively; and Step 4: comparison of the 95 percent UCL on-site groundwater concentrations with their respective MCLs, or RBCs. Site groundwater concentrations included data from 2012, 2013, and 2017 and were considered first based on maximum concentrations (Steps 1 to 3) and then based on a 95 percent UCL on the mean (UCL) (Step 4).

The UCL used in Step 4 was based on wells most proximate to the constructed gap in the sheet piling (i.e., MW-827S, MW-810S, MW-826S, MW-826M, MW-809S, and MW-809M), and wells which were used to define the UCLs for arsenic, benzene, and sodium (i.e., MW-803S, MW-808S, MW-808D, MW-809D, and MW-817S). In these first four steps, the dilution of groundwater constituents in migration from groundwater to surface water was represented through application of a 10-fold dilution factor that was applied to the MCL and RBCs for non-bioaccumulative constituents. Step 5 was conducted for arsenic, benzene, and sodium and included comparison of the their respective UCLs calculated based on a more representative set of nine wells (i.e., excluding deep wells MW-808D and MW-809D) and a site-specific dilution factor of 3,250. As indicated in the December 2018 *Pre-Design Report*, no constituents had UCLs greater than their respective screening levels in Step 5 indicating risks were within acceptable levels.

Potential risks related to consumption of fish that bioaccumulate constituents from groundwater were considered in Steps 6 and 7 through comparison with RBCs calculated using the USEPA (2018) RSL calculator and assuming 32 gallons per day (g/day), for 350 days per year for 26 years, which is equivalent to 50 eight-ounce meals per year. In Step 6, RBCs for fish consumption were compared with estimated fish tissue concentrations derived using the 95 percent UCL on the mean calculated based on the 11 wells described in Step 4, above. This analysis determined that arsenic concentrations in fish tissue would exceed the screening RBC for fish consumption.

Only arsenic was considered further in Step 7, which included comparison of the arsenic tissue concentration derived based on the UCL from nine wells and the site-specific dilution factor. Consistent with the findings of the November 2015 HHRA, these analyses indicated that consumption of 50 meals per year of fish that

[7] RBCs for surface water and for fish tissue were updated for this assessment using the USEPA Regional Screening Level calculator and the same assumptions as applied in the 2016 HHRA.

have bioaccumulated constituents from the Ship Canal would not represent an unacceptable human health risk.

The constructed gap area includes the portion of the sheet pile wall where the upper 25 feet of the sheet pile wall is no longer present. The lower portion of the existing sheet pile wall remains in place at the location of the constructed gap. The lower portion of the sheet pile wall in the constructed gap area extends vertically from 25 feet below ground surface (bgs) into the clay layer (aquitard) encountered around 40 feet bgs. The sheet pile wall represents an effective physical hydraulic barrier and future LNAPL source remedial action will be conducted in conjunction with implementation of a downgradient groundwater monitoring program. Based on relatively high estimated advective groundwater flow rates at the site, the planned LNAPL source remedial action should result in reduction in downgradient concentrations within a reasonable timeframe. As indicated in the September 2016 *Pre-Design Work Plan*, if Indiana Harbor Ship Canal sentinel wells MW-809S, MW-810S, MW-826S, and MW-827S indicate increasing petroleum VOC or naphthalene concentrations to levels of concern, then active groundwater remediation near the Canal will be contemplated.

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[8] as defined by the monitoring locations designated at the time of this determination)?

   - ☐ If yes, continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[8]).
   - ☐ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]), skip to #8 and enter "NO" status code, after providing an explanation.
   - ☐ If unknown, skip to #8 and enter "IN" status code.

   Rationale and References

   _____

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

   - ☐ If yes, continue after identifying potentially affected surface water bodies.
   - ☐ If no, skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.
   - ☐ If unknown, skip to #8 and enter "IN" status code.

   Rationale and References

   _____

[8] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[9] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

   ☐ If yes, skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

   ☐ If no (the discharge of "contaminated" groundwater into surface water is potentially significant), continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[9] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

   ☐ If unknown, enter "IN" status code in #8.

Rationale and References

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6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[10])?

   ☐ If yes, continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR

   2) providing or referencing an interim-assessment,[11] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate

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[9] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

[10] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[11] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

☐ If no (the discharge of "contaminated" groundwater cannot be shown to be "**currently acceptable**"), skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

☐ If unknown, skip to 8 and enter "IN" status code.

Rationale and References

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7. Will groundwater **monitoring**/measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

☐ If yes, continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

☐ If no, enter "NO" status code in #8.

☐ If unknown, enter "IN" status code in #8.

Rationale and References

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8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

☒ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the at the Former Coke Plant Facility, EPA ID # IND 005 462 601, located at the ArcelorMittal Indiana Harbor LLC West Facility, East Chicago, Indiana. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater." This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

☐ NO - Unacceptable migration of contaminated groundwater is observed or expected.

☐ IN - More information is needed to make a determination.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS Code (CA750)

Completed by (signature) _____ Date _____
(print) _____
(title) _____

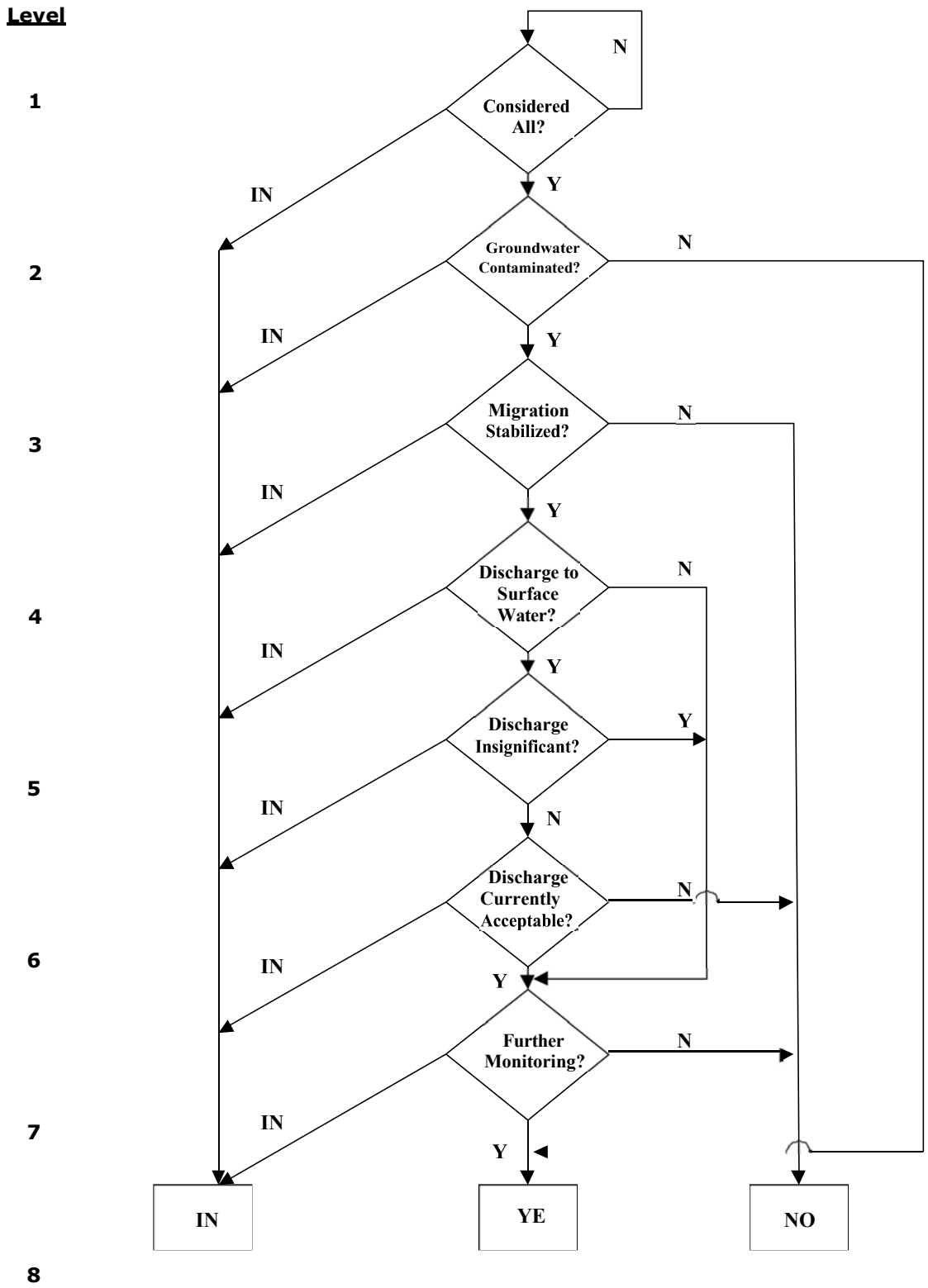
Supervisor (signature) _____ Date _____
(print) _____
(title) _____
(EPA Region or State) _____

Locations where References may be found:
_____

Contact telephone and e-mail numbers
(name) _____
(phone #) _____
(e-mail) _____

Facility Name: _____
EPA ID#: _____
City/State: _____

MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA 750)



// Signed 2/5/99 //

MEMORANDUM

SUBJECT: Interim-Final Guidance for RCRA Corrective Action Environmental Indicators

FROM: Elizabeth Cotsworth, Acting Director
Office of Solid Waste

TO: RCRA Senior Policy Managers
Regions I-X

The RCRA corrective action program and achievement of its Government Performance Results Act (GPRA) goals are of highest priority for the national RCRA program. The RCRA program is using two Environmental Indicators (EI) to measure program performance for GPRA purposes: 1) Current Human Exposures Under Control (CA725), and 2) Migration of Contaminated Groundwater Under Control (CA750).

With this memorandum, I am transmitting revised guidance on how to determine if a facility has met the RCRA corrective action Environmental Indicators (EIs). This Interim-Final guidance will replace the existing EI guidance (from 1994 and 1995) and will remain the working guidance for at least 1 year. The Interim-Final guidance is similar to the earlier guidance but has been modified to facilitate more consistent determinations (across regions and states) and to be more explicit with regard to the minimum level of documentation required to ensure that the determinations will be verifiable.

This guidance has been developed with the cooperation and input of representatives from all ten USEPA regions and at least one state from each region. The guidance is in the form of questions to be answered in making an EI determination. The questions and answer options express the minimum criteria for EI determinations and are not to be modified for regional, state, or site-specific conditions. The "Rationale" portion of the forms can be filled in to explain unique situations to any length necessary. While the signed hard-copies of these forms should reside in the facility's administrative files, these forms should also be kept in electronic format that can be posted on an "EI database" web site to be developed by the Office of Solid Waste in the near future. The "EI database" will help communicate successes and provide examples for overcoming barriers to progress.

Thank you for your assistance with this important effort. If you have any questions, please call Bob Hall or Henry Schuver of my staff at (703) 308-8432 or 308-8656 respectively.

Attachment

APPENDIX B

ESTIMATED CORRECTIVE MEASURE COSTS

Table B-1: LNAPL Corrective Measure 1: Surfactant-Enhanced Recovery
Remedial Study: Former Coke Plant, East Chicago, Indiana

Net Present Value Cost Estimate

Remedy Phase	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Task Total
Remedial Action Plan	Consultant	$60,000								$60,000
Technical Plans/Specs/Bidding	Consultant	$150,000								$150,000
Remediation Well Installation	Contractor/Consultant	$350,000								$350,000
Six Surfactant Applications	Consultant/Consultant	$960,000	$960,000							$1,920,000
Remedial Action Completion Report	Consultant			$50,000						$50,000
Quarterly Groundwater Monitoring	Years 1 and 2		$120,000	$120,000						$240,000
Semi-Annual Groundwater Monitoring	Years 3 and 4				$70,000	$70,000				$140,000
Annual Groundwater Monitoring	Years 5 through 7						$40,000	$40,000	$40,000	$120,000
Reporting	Consultant	$40,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$40,000	$200,000
Well Abandonment	Consultant								$180,000	$180,000
Sub Total		$1,560,000	$1,100,000	$190,000	$90,000	$90,000	$60,000	$60,000	$260,000	$3,410,000
10% Scope Contingency		$1,716,000	$1,210,000	$209,000	$99,000	$99,000	$66,000	$66,000	$286,000	$3,751,000
Escalation Factor (1.5%)		1	1.015	1.030	1.045	1.060	1.075	1.090	1.105	
Total		$1,716,000	$1,228,150	$215,270	$103,455	$104,940	$70,950	$71,940	$316,030	$3,826,735
Year		0	1	2	3	4	5	6	7	
Present Value Discount Rate (7%)		1.0000	0.9346	0.8734	0.8163	0.7629	0.7130	0.6663	0.6227	
Net Present Value (NPV)		**$1,716,000**	**$1,147,804**	**$188,025**	**$84,450**	**$80,058**	**$50,586**	**$47,937**	**$196,808**	**$3,511,668**

Assumptions:

1. The corrective measure footprint is based on an area of 32,000 square feet, with a depth range of 5 to 11 feet below grade; the corrective measure is designed to address impacts within this footprint.

2. Corrective measure assumes a total of 33 injection wells. Estimated costs assume completion of six surfactant application events.

Table B-2: LNAPL Corrective Measure 2: In Situ Chemical Oxidation
Remedial Study: Former Coke Plant, East Chicago, Indiana

Net Present Value Cost Estimate

Remedy Phase	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Task Total
Remedial Action Plan	Consultant	$60,000								$60,000
Technical Plans/Specs/Bidding	Consultant	$150,000								$150,000
Six ISCO Injections	Contractor	$2,580,000	$2,580,000							$5,160,000
Injection Management	Consultant	$300,000	$300,000							$600,000
Remedial Action Completion Report	Consultant			$40,000						$40,000
Injection Well Abandonment	Consultant/Contractor						$50,000			$50,000
Quarterly Groundwater Monitoring	Years 1 and 2		$120,000	$120,000						$240,000
Semi-Annual Groundwater Monitoring	Years 3 and 4				$70,000	$70,000				$140,000
Annual Groundwater Monitoring	Years 5 through 7						$40,000	$40,000	$40,000	$120,000
Reporting	Consultant	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$40,000	$180,000
Well Abandonment	Consultant								$180,000	$180,000
Sub Total		$3,110,000	$3,020,000	$180,000	$90,000	$90,000	$110,000	$60,000	$260,000	$6,920,000
10% Scope Contingency		$3,421,000	$3,322,000	$198,000	$99,000	$99,000	$121,000	$66,000	$286,000	$7,612,000
Escalation Factor (1.5%)		1	1.015	1.030	1.045	1.060	1.075	1.090	1.105	
Total		$3,421,000	$3,371,830	$203,940	$103,455	$104,940	$130,075	$71,940	$316,030	$7,723,210
Year		0	1	2	3	4	5	6	7	
Present Value Discount Rate (7%)		1.0000	0.9346	0.8734	0.8163	0.7629	0.7130	0.6663	0.6227	
Net Present Value (NPV)		**$3,421,000**	**$3,151,243**	**$178,129**	**$84,450**	**$80,058**	**$92,742**	**$47,937**	**$196,808**	**$7,252,366**

Assumptions:

1. The corrective measure footprint is based on an area of 32,000 square feet, with a depth range of 5 to 11 feet below grade; the corrective measure is designed to address impacts within this footprint.

2. Corrective measure assumes a total of 64 injection points. Estimated costs assume completion of six injection events.

Table B-3: LNAPL Corrective Measure 3: In Situ Thermal Remediation
Remedial Study: Former Coke Plant, East Chicago, Indiana

Net Present Value Cost Estimate

Remedy Phase	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Task Total
Remedial Action Plan	Consultant	$60,000								$60,000
Technical Plans/Specs/Bidding	Consultant	$150,000								$150,000
ISTR System Construction/Start-Up	Contractor	$1,340,000								$1,340,000
Injection/Extraction Well Installation	Contractor	$150,000								$150,000
Construction Management	Consultant	$350,000								$350,000
Remedial Action Completion Report	Consultant			$50,000						$50,000
ISTR System Operations/Maintenance	Contractor, Consultant		$1,670,000							$1,670,000
Electrical Power	Utility		$360,000							$360,000
Remedial System Decommissioning	Consultant/Contractor		$240,000							$240,000
Quarterly Groundwater Monitoring	Years 1 and 2		$120,000	$120,000						$240,000
Semi-Annual Groundwater Monitoring	Years 3 and 4				$70,000	$70,000				$140,000
Annual Groundwater Monitoring	Years 5 through 7						$40,000	$40,000	$40,000	$120,000
Reporting	Consultant	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$40,000	$180,000
Well Abandonment	Consultant								$180,000	$180,000
Sub Total		$2,070,000	$2,410,000	$190,000	$90,000	$90,000	$60,000	$60,000	$260,000	$5,230,000
10% Scope Contingency		$2,277,000	$2,651,000	$209,000	$99,000	$99,000	$66,000	$66,000	$286,000	$5,753,000
Escalation Factor (1.5%)		1	1.015	1.030	1.045	1.060	1.075	1.090	1.105	
Total		$2,277,000	$2,690,765	$215,270	$103,455	$104,940	$70,950	$71,940	$316,030	$5,850,350
Year		0	1	2	3	4	5	6	7	
Present Value Discount Rate (7%)		1.0000	0.9346	0.8734	0.8163	0.7629	0.7130	0.6663	0.6227	
Net Present Value (NPV)		**$2,277,000**	**$2,514,734**	**$188,025**	**$84,450**	**$80,058**	**$50,586**	**$47,937**	**$196,808**	**$5,439,598**

Assumptions:

1. The corrective measure footprint is based on an area of 32,000 square feet, with a depth range of 0 to 15 feet below grade; the corrective measure is designed to address impacts within this footprint.

2. Corrective measure assumes a total of 52 steam injection wells, 15 extraction wells, and 25 temperature sensors for the treatment zone.