**FINAL**

# SEMI-ANNUAL PROGRESS REPORT NUMBER 28

**(Operating Period January 1 through June 30, 2009)**

**Prepared For:**

**Non-City Remedial Design/Remedial Action Settlors**
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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AST | Aboveground Storage Tank |
| B&N | Burgess & Niple, Incorporated |
| CLP | Contract Laboratory Program |
| DCE | dichloroethene |
| gpd | gallons per day |
| gpm | gallons per minute |
| HDPE | high-density polyethylene |
| IDEM | Indiana Department of Environmental Management |
| InSite | InSite, Incorporated |
| ISC-LT | Industrial Source Complex – Long-Term |
| MWH | MWH Americas, Inc. |
| NFG | National Functional Guidelines |
| O&M | operation and maintenance |
| OM&M | operation, maintenance, and monitoring |
| Pace | Pace Analytical Services, Inc. |
| PCB | polychlorinated biphenyl |
| PCE | tetrachloroethene |
| POTW | publicly owned treatment works |
| ppb | parts per billion |
| PRG | Preliminary Remediation Goal |
| QAPjP | Quality Assurance Project Plan |
| QC | quality control |
| RD/RA | Remedial Design/Remedial Action |
| scfm | standard cubic feet per minute |
| SE | Southeast |
| SVE | soil vapor extraction |
| U.S. EPA | United States Environmental Protection Agency |
| TCE | trichloroethene |
| µg/kg | micrograms per kilogram |
| µg/L | micrograms per liter |
| v/v | volume per volume basis |
| VOC | volatile organic compound |
| VC | vinyl chloride |
| Weston | Roy F. Weston |
| WRR | Wayne Reclamation & Recycling |

# 1.0 INTRODUCTION

This document is submitted on behalf of the Non-City Remedial Design/Remedial Action (RD/RA) Settlors. It is intended to summarize operations of the remediation system constructed by the Non-City RD/RA Settlors at the Wayne Reclamation & Recycling (WRR) Site (also known as the Wayne Waste Oil Site) located in Columbia City, Indiana for the reporting period of January 1 through June 30, 2009. Included in this document is a description of the system operation, assessment, and testing activities that have occurred during the reporting period. This document is organized as follows:

- *Section 2 Monitoring, Data Validation, and Field Work*
- *Section 3 Soil Vapor Extraction System*
- *Section 4 Groundwater Extraction System*
- *Section 5 Groundwater Pre-Treatment System*
- *Section 7 Off-Gas Treatment System*
- *Section 8 Institutional Controls*
- *Section 9 Conclusions and Recommendations*

This document is intended to supplement information presented in previous Semi-Annual Progress Reports.

## 1.1 BACKGROUND

Construction of the remediation system at the WRR Site took place between 1994 and January 1995. The remediation system was constructed to remove volatile organic compounds (VOCs) from soil and groundwater. The system includes:

- A 150-gallons-per-minute (gpm) design capacity groundwater extraction system, including a 1,600-foot-long, soil-bentonite cut-off wall (i.e., slurry wall).

- A groundwater treatment system consisting of an influent storage tank, an air stripping tower, and a 5,800-foot-long force main that delivers treated groundwater to the Columbia City publicly owned treatment works (POTW).
- A 2,400-standard-cubic-feet-per-minute (scfm) soil vapor extraction (SVE) system and a 100-scfm air sparging system (nominal rates). The air sparge system has met its design goals, and operation of the deep and shallow injection wells was suspended in September 2001 and November 2006, respectively.
- A 3,200-scfm off-gas treatment system, which was removed from service effective June 24, 1999.
- In addition to the remediation system, institutional controls have been designated to restrict property use.

The layouts for the three primary components of the remediation system, including the groundwater recovery, SVE, and air sparging system, are indicated on ***Figures 1***, ***2***, and ***3***, respectively.

Additional information on the remediation system can be found in the following reports:

- *Final Design Evaluation* (November 19, 1993)
- *Interim Remedial Action Report* (August 1995)
- *Final Operation, Maintenance, and Monitoring (OM&M) Plan* (September 1995) and *Addendum* (July 1999)
- *Final Operations and Maintenance Quality Assurance Project Plan (O&M QAPjP)* (September 1995) and *Addendum* (July 1999)
- *Technical Memorandum Number One* (February 12, 1996)
- *Technical Memorandum Number Two* (November 1996)
- *Hydrological Assessment Letter Report, January through July 2003* (August 2003)

- *Hydrological Assessment Letter Report, July through December 2003* (January 2004)
- *Semi-Annual Progress Report Numbers 3 through 27* (August 1997 through February 2009)

# 2.0 MONITORING, DATA VALIDATION, AND FIELD WORK

Summaries of the monitoring activities conducted, data validation report, and significant field events and activities are presented in the following sections.

## 2.1 SITE-SPECIFIC PRELIMINARY REMEDIATION GOALS

Development of the groundwater and soil site-specific Preliminary Remediation Goals (PRGs) is detailed in Appendix C of the *Final OM&M Plan* (Montgomery Watson, September 1995) and *Final O&M QAPjP* (Montgomery Watson, September 1995). Soil PRGs are specified based on the thickness of soil column and area of the Site. Soil compliance monitoring will begin when it is determined that an area likely meets the soil site-specific PRGs, as indicated by groundwater detections less than the groundwater site-specific PRGs. The five constituents listed in the following table were noted in the *Final OM&M Plan* to be the principal constituents of concern necessitating groundwater and soil remediation at the WRR Site. The table also lists the most conservative groundwater PRGs and soil PRGs for the entire soil column for the principal constituents of concern.

| **Principal Constituent of Concern** | **Groundwater PRG (µg/L)** | **Soil PRG for Entire Soil Column [1] (µg/kg)** | | | |
|---|---|---|---|---|---|
| | | SE Area - North | SE Area - South | AST Area | MW-7S |
| Vinyl Chloride (VC) | 0.0283 | 37.1 | 25.2 | 2.6 | 1,987.0 |
| Tetrachloroethene (PCE) | 1.43 | 67.1 | 1,811.6 | 44.2 | 4,796.0 |
| Trichloroethene (TCE) | 2.54 | 19.7 | 804.6 | 17.6 | 664 |
| cis-1,2-Dichloroethene (cis-1,2-DCE) | 70 | -- | -- | -- | -- |
| trans-1,2-Dichloroethene (trans-1,2-DCE) | 100 | -- | -- | -- | -- |
| 1,2-Dichloroethene, Total (1,2-DCE) | -- | 186.3 | 8,578.4 | 184.7 | 4,219.0 |

Notes: µg/L = Micrograms per liter.
µg/kg = Micrograms per kilogram.
SE = Southeast.
AST = Aboveground Storage Tank.
-- = No PRG developed for this constituent.
[1] = PRGs were also developed for a one-foot soil column. The appropriate PRG should be used.

## 2.2 MONITORING SUMMARY

The primary monitoring activities conducted for the WRR Site remediation system include:

- The SVE system effluent samples are collected and analyzed for VOCs on a monthly basis. Laboratory analytical results of the SVE effluent sampling are used in air dispersion calculations.
- Samples of both the influent and effluent from the groundwater treatment system are collected monthly and analyzed for VOCs. The effluent samples are also analyzed for total metals, inorganics, and polychlorinated biphenyls (PCBs) during the expanded sampling event in October of each year. Laboratory analytical results from the groundwater treatment system sampling are used to monitor groundwater treatment system efficiency, and to provide effluent water quality information to the Columbia City POTW. During this reporting period, an expanded sampling event was not conducted.
- Groundwater samples from recovery wells are collected and analyzed for VOCs on a periodic basis. Recovery wells RW-1, RW-3, RW-4, and RW-5 are sampled annually. Laboratory analytical results from recovery well sampling are used to monitor changes in aquifer groundwater concentrations and to assess VOC mass removal rates from the aquifer.
- Semi-annual groundwater sampling and analyses are conducted using the WRR Site monitoring well network. Typically, the semi-annual sampling is conducted in April and October of each year. Samples are analyzed for VOCs and metals. Laboratory analytical results from groundwater sampling are used to assess effectiveness of the remediation system operations and evaluate the progress toward attainment of remedial goals. During April 2009, samples were

collected from five WRR Site monitoring wells and analyzed for VOCs and metals.

- Semi-annual groundwater elevation measurements are collected from 28 of the WRR Site's groundwater monitoring wells and piezometers, not including the landfill wells monitored by Columbia City and the ten WRR Site recovery wells. Typically, the semi-annual sampling is conducted in April and October of each year. These data are used to evaluate groundwater flow patterns across the site. During April 2009, groundwater elevation readings were collected from the designated monitoring wells and piezometers.
- Monthly groundwater elevation measurements are collected from eight groundwater monitoring wells to evaluate the zone of hydraulic influence created by the groundwater remediation system and to assess horizontal and vertical hydraulic gradients within the SE Area.
- Annually, specific Columbia City municipal drinking water wells (Municipal Well Numbers 7 and 8 [referred to as PW-7 and PW-8, respectively]) are sampled during the expanded October sampling event; therefore, these wells were not sampled during this reporting period.
- During this reporting period, groundwater wells located on or adjacent to the landfill (GM-1 through GM-4) were sampled by Burgess & Niple, Incorporated (B&N) of Columbus, Ohio. Their report (***Appendix A***) provides data for comparison to groundwater monitoring results from closely associated wells on the WRR Site.

The results from the above monitoring activities are discussed in the following sections of this report.

## 2.3 DATA VALIDATION SUMMARY

Groundwater, air, and associated quality control (QC) samples were collected from the WRR Site between January and June 2009. The water samples were analyzed by Pace Analytical Services, Inc. (Pace) of Indianapolis, Indiana for one or more of the following parameters: VOCs by U.S. EPA Method SW-846 8260B; dissolved metals (arsenic, barium, cadmium, chromium, lead, nickel, and zinc) by U.S. EPA Method SW-846 6010B; and total cyanide by U.S. EPA Method 335.3. Additionally, air samples were analyzed for VOCs by Pace of Minneapolis, Minnesota by U.S. EPA Method TO-14.

Laboratory analytical results were evaluated in accordance with the U.S. EPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Organic Data Review (October 1999), U.S. EPA CLP NFG for Inorganic Data Review (October 2004), and the analytical methods. The analytical data were reviewed and qualified based on the results of the data evaluation parameters and/or the QC sample results provided by the laboratory. The complete data validation report is included as ***Appendix B***. The analytical data for those compounds that did not meet the QC criteria were flagged by a "J" (estimated) or "U" (non-detect). Based on the results of this data validation, the data are considered usable as qualified.

## 2.4 FIELD WORK SUMMARY

The major field activities conducted at the WRR Site during the reporting period are summarized in ***Appendix C***. Activities during this reporting period included various equipment repairs, calibration, and maintenance tasks.

# 3.0 SOIL VAPOR EXTRACTION SYSTEM

## 3.1 SYSTEM DESCRIPTION

The SVE system was constructed to remove VOCs from the vadose (unsaturated) zone. The horizontal configuration of the SVE well system is presented on ***Figure 2***. The system consists of 41 SVE wells in the SE Area and 18 SVE wells in the AST Area. Operation of the SVE wells in the SE was suspended in November 2006. SVE wells in the AST Area are connected via underground piping to one of two branch lines (Branches G and H; ***Figure 2***) that convey extracted vapors to the treatment building. Operation of branch line H was suspended in October 2002. At present only branch line G is operated.

## 3.2 MONITORING RESULTS

Results of the SVE system monitoring conducted during this reporting period indicate:

- During the period of January 1 through June 30, 2009, the SVE system was operational for approximately 95.5 percent of the time (i.e., percent of total hours available). Downtime events were related to standard, regularly scheduled OM&M activities, maintenance and repairs, and a temporary shutdown at the request of the POTW.
- Air flow rates were collected each month from January through June 2009. The flow rate in Branch Line G averaged approximately 750 scfm while operating. Flow rate measurements collected during this reporting period are summarized in ***Table 1***.
- Laboratory analytical data from the Summa canister sample collected in April 2009 are summarized in ***Table 2***; historical data from Summa canister samples are summarized in ***Appendix D, Table D-1***.

## 3.3 PROGRESS TOWARD REMEDIAL OBJECTIVES

Based on laboratory analytical results from SVE system effluent air samples collected during the reporting period, it is estimated that approximately 12,070 pounds of VOCs have been removed via the SVE system from vadose zone soils to date, with 3.7 pounds removed from January through June 2009. The main VOC constituents removed in the AST Area are TCE and cis-1,2-DCE. For this reporting period, the removal rate for the SVE system was approximately 0.02 pounds of total VOCs per day. The trend in VOC concentrations for the combined effluent air of the SVE, air sparge, and groundwater treatment systems from 1995 through the present is relatively stable, as shown in ***Figure 4***.

Semi-annual groundwater monitoring is conducted in April and October of each year. During April 2009, samples were collected from five WRR Site monitoring wells and analyzed for VOCs and metals. Two of the five wells (MW-9S and MW-14S) are located in the AST area. Groundwater monitoring results for samples collected in April 2009 are presented in ***Table 3***; historical groundwater monitoring data are presented in ***Appendix D, Table D-2***. Groundwater monitoring data are discussed in Section 4.3. As discussed in Section 4.3 constituents in groundwater are still present at concentrations greater than site-specific PRGs, and the SVE system typically removes VOCs at less than 0.5 percent of the initial removal rates. This trend has been stable for approximately 12 years (***Figure 4).***

# 4.0 GROUNDWATER EXTRACTION SYSTEM

## 4.1 SYSTEM DESCRIPTION

The groundwater extraction system was constructed to capture and control groundwater impacted with VOCs. The groundwater extraction system consists of ten groundwater recovery wells installed in three areas of the WRR Site as follows: three recovery wells in the AST Area (RW-1 through RW-3), one recovery well in the monitoring well MW-7S area (RW-4), and six recovery wells in the SE Area (RW-5 through RW-10) (***Figure 1***). The extraction system also uses a soil-bentonite cut-off wall (i.e., a slurry wall), constructed to reduce the pumping rate necessary to control groundwater flow in the SE Area. The slurry wall encircles the SE Area near the Blue River. Extracted groundwater is pumped to the on-site treatment building through underground HDPE piping.

## 4.2 MONITORING RESULTS

Results of the groundwater extraction system monitoring conducted during this reporting period indicate:

- During the period of January through June 2009, the groundwater extraction system was operational for approximately 95.5 percent of the time (i.e., percent of total hours available). Primary downtime events were related to routine cleaning of recovery pumps, routine and annual plant maintenance, cleaning and repair of the flow meters, and a temporary shutdown at the request of the POTW.
- A summary of system flow rates during this reporting period is included in ***Table 4***. The average sustained groundwater recovery rate during the reporting period was approximately 63 gpm. During this reporting period, a total of 15,584,437 gallons of groundwater were recovered and treated. The largest total monthly flow was reported at 3,464,212 gallons, for the month of April. The highest average daily

recovery rate during the reporting period was 115,500 gallons per day (gpd), which was reported during April. ***Figure 5*** is a summary of the cumulative and average daily groundwater recovery rates from October 1995 through June 2009. As of June 30, 2009, a cumulative total of 373,717,816 gallons of groundwater had been recovered, treated, and discharged to the Columbia City POTW.

- On-going, routine operation and maintenance activities are focusing on recovery well pump cleaning and/or repair, and recovery pipe cleaning as necessary to optimize groundwater extraction system performance.
- Water level elevation data collected during the reporting period are used to evaluate the groundwater table drawdown. These data are provided in ***Table 5***. Groundwater contour maps for January through June 2009 are presented as ***Figures 7-1*** through ***7-4***, ***7-6***, and ***7-7***. Because groundwater elevations were measured in all wells in April, ***Figure 7-4*** illustrates a representation of the groundwater elevations observed across the entire WRR Site. The influence of the recovery wells in the southeast corner is apparent, and the general groundwater flow direction across the property is southeast. April 2009 groundwater elevations of the landfill wells in the B&N report (see ***Table 2*** of the B&N report, included as ***Appendix A***) were consistent with the elevations observed on the WRR Site.
- ***Figure 7-5*** summarizes recent groundwater sampling analytical results from monitoring wells for April 2009.
- Historical laboratory analytical results from the annual sampling of the Columbia City municipal drinking water wells located to the north of the WRR Site are presented in ***Appendix D, Tables D-3*** and ***D-4***. Although the wells were not sampled during this reporting period, the historical data indicate that no detectable concentrations of

constituents attributable to the WRR Site have been identified in samples from the municipal wells.

- Groundwater from recovery wells RW-1, RW-3, RW-4, and RW-5 is sampled and analyzed for VOCs on an annual basis. The most recent sample results for these recovery wells (October 2008) are provided in ***Table 6***; historical data from the recovery well samples are provided in ***Appendix D, Table D-5***.

## 4.3 PROGRESS TOWARD REMEDIAL OBJECTIVES

The primary remedial objective of the groundwater extraction system is to remove dissolved-phase constituents from the upper aquifer on site, thereby restricting the potential off-site migration of dissolved-phase constituents to the Blue River or Columbia City municipal well field. Mass removal rates from the groundwater extraction system ranged from approximately 0.51 to 1.05 pounds of total VOCs removed per day during this reporting period.

Groundwater elevation data indicate that the slurry wall/groundwater extraction system is effectively maintaining an inward horizontal gradient in the SE Area. Monthly water elevations collected during the reporting period indicate the hydraulic head levels were lower inside the slurry wall when compared to the head levels outside the wall during the months when significant precipitation did not occur (January and February). For example, the February 2009 elevations within the confines of the slurry wall were 3.7 feet lower than water elevations immediately outside the slurry wall (based on monitoring wells MW-11S and MW-13S, ***Table 5***). For the months when significant precipitation occurred (i.e., March, April, May), the head levels were similar inside the slurry wall when compared to the levels outside the wall. During these three months in 2009, a 75 percent increase in rainfall (approximately 5 inches) was observed when compared to the same period in 2008.

OM&M activities, including on-going recovery pump cleaning, are conducted to increase groundwater system recovery rates to maintain an upward gradient in the SE Area. Based on the historical observations of groundwater extraction system performance, maintenance of the groundwater extraction system is conducted frequently (i.e., approximately once per quarter) in order to maintain hydraulic control. Review of the groundwater elevation data indicates that an upward gradient was maintained in the SE Area during this reporting period with the exception of April and May, during which significant precipitation occurred. For April, no vertical gradient was observed. A slight downward gradient was observed in May.

The monitoring wells currently included in the semi-annual or annual sampling program, per the requirements of the *Final OM&M Plan*, are MW-1D, MW-3S, MW-4S, MW-7S, MW-9S, MW-10S, MW-11S, MW-14S, MW-15S, MW-16S, MW-83AS, MW-83AD, and MW-83B. Monitoring wells MW-13S and MW-83DS were added to the annual OM&M monitoring program per the July 11, 2002, Site Progress Meeting. During this reporting period, groundwater samples were collected from the following monitoring wells in accordance with the *Sampling and Analysis Plan for Environmental Monitoring - Revision 1* (July 1999): MW-4S, MW-9S, MW-10S, MW-14S, and MW-83AS.

A summary of monitoring well VOC and metals analytical data collected during this reporting period is included in ***Table 3***; historical data are provided in ***Appendix D, Table D-2***. Recent monitoring well VOC analytical results from April 2009 are also included in ***Figure 7-5***. The most recent recovery well VOCs analytical data (October 2008) are included in ***Table 6***; historical data are provided in ***Appendix D, Table D-5***. Copies of laboratory analytical reports are available upon request. The results are summarized below:

SE Area

- MW-10S - For the sample collected from MW-10S, cis-1,2-DCE and trans-1,2-DCE were the only VOCs detected. The concentrations of these VOCs were less than the PRGs and the historical sample results.
- For MW-83AS, cis-1,2-DCE and VC concentrations exceeded PRGs. The VOC concentrations were similar to the concentrations observed during the previous sampling events.

AST Area

- MW-9S - The concentrations for 1,1-DCE, cis-1,2-DCE, TCE, PCE and VC exceeded PRGs in MW-9S. The VOC concentrations obtained during this sampling event for MW-9S are similar to the concentrations detected during the previous sampling event (October 2008) and consistent with the historical results for this well.
- MW-14S - 1,1,-DCA, cis-1,2-DCE, and 1,1,1-TCA were detected in the sample collected from MW-14S. VOC concentrations in MW-14S did not exceed PRGs and appeared consistent with historical sample results.

Recovery Well RW-4 Area:

- MW-4S - In April 2009, the VC concentration in MW-4S was greater than the PRG. Other VOCs were not detected in MW-4S. These results are consistent with the results obtained during previous sampling events.

A summary of historical recovery well VOC analytical data is included in ***Appendix D, Table D-5***. The most highly impacted groundwater has historically been removed from recovery wells located within the confines of the slurry wall (RW-8, RW-9, and RW-10).

# 5.0 GROUNDWATER PRE-TREATMENT SYSTEM

## 5.1 SYSTEM DESCRIPTION

The groundwater pre-treatment system is designed to remove VOCs from extracted groundwater, prior to discharge to the Columbia City POTW. Groundwater extracted from the WRR Site's ten groundwater recovery wells is initially pumped to an influent storage tank for solids settling and equalization. The equalized water is transferred through a bag filter to the top of an air stripping tower via electric transfer pumps. Water cascades downward through the tower packing, while air flows upward from near the tower base, inducing liquid-to-gas mass transfer of VOCs from the groundwater. The treated water drains from the tower into an effluent sump, which is pumped via a dedicated force main to the Columbia City POTW.

## 5.2 MONITORING RESULTS

During the period of January through June 2009, the groundwater pretreatment system was operational 95.5 percent of the time (i.e., percent of total hours of available). Primary downtime events were related to on-going routine cleaning activities and maintenance, non-routine maintenance and repairs, and a temporary shutdown performed at the request of the POTW.

Monthly groundwater treatment system sampling consists of influent and effluent sampling for VOCs; detailed VOC results for this monitoring period are provided in ***Table 7*** and historical results are summarized in ***Figure 6***. The air stripping tower has consistently removed VOCs prior to discharge to the Columbia City POTW. As shown on ***Figure 6***, total VOC concentrations in air stripping tower influent have fluctuated from as low as 273 µg/L to as high as 3,274 µg/L (in September 2003 and February 1996, respectively), since commencement of treatment system operations. Influent groundwater VOC concentrations can vary over time, based on a variety of factors including recovery well cycling, rainfall events, and water levels. The influent

groundwater total VOC concentrations during this reporting period began at 1,456 µg/L in January 2009 and ended at 1,354 µg/L in June 2009 (shown in ***Table 7***). The average total VOC concentration removed during the reporting period was approximately 1,132 µg/L. For this reporting period, the average groundwater constituent mass removal rate was 0.83 pounds of total VOCs per day, based on an average flow rate of 86,200 gpd and an average total VOC concentration removed of 1,132 µg/L.

Average groundwater constituent mass removal rates since the commencement of remediation system operations have ranged from approximately 0.13 to 13.2 pounds per day of total VOCs. The mass removal rates for specific VOCs from April 1998 through April 2009 are provided in ***Appendix D***, ***Table D-6***. The total mass removed during this period is approximately 143 pounds, and the total to date is an estimated 4,004 pounds.

Groundwater treatment system effluent samples collected in April were not analyzed for non-VOC parameters; non-VOC parameters are analyzed in samples collected during the annual sampling event in October. Historical non-VOC data are provided in ***Appendix D, Table D-7***.

## 5.3 PROGRESS TOWARD REMEDIAL OBJECTIVES

Laboratory analytical results of the groundwater treatment system monthly effluent sampling for this monitoring period, conducted in accordance with the discharge agreement (i.e., the agreement in place prior to February 1, 1998) with the Columbia City POTW, are included in ***Table 7***. Analytical results (from the current monitoring period and historically) have indicated that low levels of both VOCs and inorganic compounds are present in the treated groundwater discharged to the Columbia City POTW.

# 6.0 OFF-GAS TREATMENT SYSTEM

## 6.1 SYSTEM DESCRIPTION

The off-gas treatment system was operated until June 1999 to remove VOCs from the off-gases of the air stripping tower and the SVE system prior to discharge to the atmosphere. On June 24, 1999, air treatment was discontinued; however, monthly air sampling continues to be conducted on the effluent air stream as a means of monitoring potential risk levels associated with the untreated air stream.

Currently, upon entering the treatment building, the combined air stream of the air stripping tower and the SVE system is drawn through an air filter and moisture separator by two blowers connected in parallel. After exiting the blowers, the air stream passes through a heat exchanger prior to discharge to the atmosphere.

## 6.2 MONITORING RESULTS

The SVE system effluent (equivalent to the former air treatment system influent) samples are collected and analyzed for VOCs on a monthly basis. ***Table 8*** presents the monthly effluent sample results collected during this reporting period; historical results are provided in ***Appendix D, Table D-8***.

Monitoring conducted to date, including the monthly SVE system effluent sampling (which includes air stripping system off-gases), indicate the following:

- Calculations were conducted using the VOC concentrations of off-gas vapor concentrations to assess hypothetical risk levels. Results of the effluent sample analyses indicate hypothetical risk levels did not exceed the cumulative risk action level of $1x10^{-6}$ (representing an increased cancer risk of one in one million exposed). The results for this reporting period are presented in ***Table 9***. Current and historical air risk calculations are provided in ***Appendix D, Table D-9.***

## 6.3 PROGRESS TOWARD REMEDIAL OBJECTIVES

The primary objective of the on-going off-gas air monitoring is to ensure that the cumulative life-time cancer risk at the WRR Site boundary remains less than the cumulative risk action level of $1x10^{-6}$. To verify compliance with this objective, air dispersion calculations were completed to estimate the maximum concentrations at receptor locations outside the site boundary. The Industrial Source Complex - Long-Term (ISC-LT) model was used for the purpose of modeling the dispersion of the effluent from the soil remediation system (***Appendix E***). The maximum concentrations determined by the air modeling study were multiplied by unit risk factors to estimate the excess carcinogenic risk posed by the hypothetical emissions through the inhalation route. The unit risk factors used in this study were developed from toxicity values included in U.S. EPA's *Integrated Risk Information System*, U.S. EPA's *Health Assessment Summary Tables* (Annual FY-1995), and information provided by the U.S. EPA Environmental Criteria Assessment Office. The unit risk factors conservatively assume a chronic exposure to the chemicals for 24 hours a day, 365 days a year, for a 70-year lifetime. In this Progress Report, references to cancer risk and cancer risk estimates refer to the estimated potential risks as indicated by the use of ISC-LT air dispersion modeling and are not meant to represent or suggest actual risks.

Air dispersion calculations using the off-gas air data indicate that the $1x10^{-6}$ action level was not exceeded during this reporting period. Though active air treatment was discontinued on June 24, 1999, monthly effluent air sampling and risk calculations will continue. Air treatment will be reactivated should the results from two consecutive monthly air samples indicate cumulative risks in excess of $1x10^{-6}$.

## 7.0 INSTITUTIONAL CONTROLS

The following institutional controls (ICs) were specified in the RD/RA Consent Decree (CD) to supplement the remedial actions.

1. There shall be no interference of any sort, by any person, with construction, operation, maintenance, monitoring, and efficacy of all components and structures and improvements resulting from or relating to the response actions implemented pursuant to the RD/RA CD.

2. There shall be no operations on the facility which extract, consume, or otherwise use the groundwater underlying the facility property or adjoining property except as provided for in the course of carrying out the terms of the RD/RA CD without prior written U.S. EPA approval and notification to IDEM.

3. There shall be no agricultural, recreational, residential, commercial, or industrial use of the facility, including but not limited to any excavation, grading or other activity involving movement of soils at the facility, and any construction or placement of any residence, buildings, or structures - fixtures or otherwise - other than for the purpose of implementing, monitoring, and maintaining the response action required by the RD/RA CD without prior written U.S. EPA approval and notification to IDEM.

4. There shall be no construction, installation, or use of any buildings, wells, pipes, roads, ditches or any other structures - fixtures or otherwise - on the facility property that may interfere with the construction, physical integrity, operation and maintenance, or efficacy of the work undertaken pursuant to the RD/RA CD, including without limitation the facility's: security fence; municipal landfill cap; soil cover(s) related to PAH impacted soil; groundwater extraction, treatment, and discharge system; soil vapor extraction system; air, groundwater

and surface water monitoring systems; and soil immobilization or washing systems and locations, unless such construction, installation or use is approved in advance, in writing, by U.S. EPA and IDEM has been notified.

During this reporting period, onsite personnel have not observed or performed activities that would be considered inconsistent with these ICs.

## 8.0 CONCLUSIONS AND RECOMMENDATIONS

Overall remediation system mass removal calculations indicate that, since inception of treatment system operations, approximately 16,074 pounds of total VOCs have been removed by the SVE and groundwater treatment systems (see ***Figure 8***). Of this, approximately 75 percent (or 12,070 pounds) is attributed to operation of the SVE and air sparging system, and approximately 25 percent (or 4,004 pounds) is attributed to the groundwater extraction system. Currently, most of the mass removal is being accomplished via the groundwater extraction system.

As shown on ***Figure 9*** (which illustrates VOC removal rates in pounds per day since 1995), initial constituent mass removal rates from the entire remediation system were approximately 88 pounds of total VOCs per day during the startup phase of system operations. This removal rate has decreased to approximately 0.85 pounds of total VOCs per day, as of this reporting period.

Current operation, maintenance and monitoring activities will continue during the next reporting period. No recommendations for changes or enhancements to the system are being made at this time.

# TABLES

**Table 1**
**Summary of Soil Vapor Extraction Air Flow Rates from the SE and AST Areas**
**January through June 2009**
**Wayne Reclamation Recycling**

| DATE TESTED | AIR FLOW (scfm) | |
|---|---|---|
| | SOUTHEAST AREA | AST AREA |
| 1/23/09 | 0 | 530 |
| 2/9/09 | 0 | 580 |
| 3/30/09 | 0 | 730 |
| 4/20/09 | 0 | 870 |
| 5/13/09 | 0 | 880 |
| 6/10/09 | 0 | 890 |
| **AVERAGE FLOW:** | 0 | 750 |
| **MAXIMUM FLOW:** | 0 | 890 |
| **MINIMUM FLOW:** | 0 | 530 |

**Notes:**

Average Flow is based on operating flow rates while the air stripper is operating.
AST = Aboveground Storage Tank.
Flow measurement reported in standard cubic feet per minute (scfm).
All flow measurements are approximate.
Vacuum and flow measurements at the individual soil vapor extraction wells were suspended as of October 2002.
The operation of Branch Line H in the AST Area was suspended in October 2002.
The operation of Southeast Area was decreased in November 2006 and suspended in April 2007.

**Table 2**
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**
**April 2009**
**Wayne Reclamation & Recycling**

| | **AST Area** |
|---|---|
| | **Brach G (East Branch)** |
| **CONSTITUENT (ppb[v/v])** | **4/20/09** |
| 1,1-Dichloroethane | <0.67 |
| cis-1,2-Dichloroethene | **13** |
| trans-1,2-Dichloroethene | <0.67 |
| 4-Ethyltoluene | NA |
| Tetrachloroethene | **28** |
| 1,1,1-Trichloroethane | <0.67 |
| Trichloroethene | **9.5** |
| 1,2,4-Trimethylbenzene | **2.4** |
| 1,3,5-Trimethylbenzene | **1.6** |
| Vinyl Chloride | <0.67 |
| Xylenes, Total | **1.0** |
| Soil Vapor Extraction Wells: | 41 - 43, 50, and 53 - 58 |

**Notes:** < = Not detected greater than the reporting limit provided.
NA = Not analyzed.

**Table 3**
**Monitoring Well Analytical Results**
**April 2009**
**Wayne Reclamation & Recycling**

| CONSTITUENT | MW-4S (RW-4 Area) 4/20/09 | MW-9S (AST Area) 4/22/09 | MW-10S (Southeast Area) 4/20/09 | MW-14S (AST Area) 4/22/09 | MW-83AS (Southeast Area) 4/20/09 | PRG (µg/L) |
|---|---|---|---|---|---|---|
| **VOCs (µg/L)** | | | | | | |
| Acetone | < 20 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | < *1* | < *1* | < *1* | < *1* | < *1* | **0.617** |
| Bromomethane | < 2 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | < 20 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | < 20 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | < 2 | < 2 | < 2 | <2 | < 2 | -- |
| Chloroform | < *1* | < *1* | < *1* | < *1* | < *1* | **0.274** |
| Dibromomethane | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | < 1 | < 1 | <1 | **11** | **10** | **973** |
| 1,2-Dichloroethane | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | < *1* | **17** | < *1* | < *1* | < *1* | **0.0167** |
| cis-1,2-Dichloroethene | < 1 | **6,930** | **15** | **1** | **247** | **70** |
| trans-1,2-Dichloroethene | < 1 | 48 | **2** | < 1 | < 1 | **100** |
| 1,2-Dichloroethene, Total | < 1 | **6,978** | **17** | **1** | **247** | (170) |
| 1,2-Dichloropropane | < 1 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | < 1 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | < 20 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | < 1 | **12** | < 1 | < 1 | < 1 J | **1.43** |
| Toluene | < 1 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | < 1 | < 1 | < 1 | **3.5** | < 1 | **200** |
| 1,1,2-Trichloroethane | < *1* | < *1* | < *1* | < *1* | < 1 | **0.314** |
| Trichloroethene | < 1 | **2,360** | < 1 | < *1* | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | < 5 | < 5 | <5 | < 5 | < 5 | -- |
| Vinyl Chloride | **7.2** | **139** | < *1* | <1.0 | **626** | **0.0283** |
| Xylenes, Total | < 1 | < 1 | <3 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | **7.2** | **9,512** | **17** | **15.7** | **883** | -- |
| **Metals (mg/L)** | | | | | | |
| Arsenic, Dissolved | <0.100 | < 0.1 | <0.1 | <0.10 | < 0.1 | -- |
| Barium, Dissolved | **0.092** | **0.05** | **0.05** | **0.046** | **0.072** | -- |
| Cadmium, Dissolved | < 0.03 | < 0.03 | <0.03 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | < 0.04 | < 0.04 | <0.04 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | < 0.005 | < 0.005 | **0.039** | <0.005 | < 0.005 | -- |
| Lead, Dissolved | < 0.08 | < 0.08 | <0.08 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | < 0.01 | <0.01 | <0.01 | < 0.01 | < 0.01 | -- |
| Zinc, Dissolved | < 0.05 | < 0.05 | <0.05 | < 0.05 | < 0.05 | -- |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
(J) = estimated.
< = Not detected greater than the reporting limit provided.
-- = No PRG assigned.

**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
Shaded = Analyte detected greater than the corresponding PRG.

**Table 4**
**Groundwater Treatment System Flow Summary**
**Wayne Reclamation & Recycling**

| January 2009 | | February 2009 | | March 2009 | | April 2009 | | May 2009 | | June 2009 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | FLOW (gpd) | DATE | FLOW (gpd) | DATE | FLOW (gpd) | DATE | FLOW (gpd) | DATE | FLOW (gpd) | DATE | FLOW (gpd) |
| 1 | 45,504 | 1 | 78,624 | 1 | 82,944 | 1 | 114,048 | 1 | 95,328 | 1 | 82,944 |
| 2 | 42,154 | 2 | 85,536 | 2 | 82,944 | 2 | 114,048 | 2 | 104,112 | 2 | 82,944 |
| 3 | 45,504 | 3 | 85,536 | 3 | 82,944 | 3 | 114,048 | 3 | 104,112 | 3 | 80,496 |
| 4 | 45,504 | 4 | 85,536 | 4 | 78,013 | 4 | 114,048 | 4 | 104,112 | 4 | 80,496 |
| 5 | 45,504 | 5 | 81,794 | 5 | 87,696 | 5 | 114,048 | 5 | 104,112 | 5 | 80,496 |
| 6 | 98,842 | 6 | 85,536 | 6 | 87,696 | 6 | 114,048 | 6 | 104,112 | 6 | 80,496 |
| 7 | 101,088 | 7 | 85,536 | 7 | 87,696 | 7 | 117,933 | 7 | 104,112 | 7 | 80,496 |
| 8 | 101,088 | 8 | 85,536 | 8 | 87,696 | 8 | 120,528 | 8 | 80,928 | 8 | 80,496 |
| 9 | 101,088 | 9 | 85,536 | 9 | 87,696 | 9 | 120,528 | 9 | 80,928 | 9 | 80,496 |
| 10 | 101,088 | 10 | 85,536 | 10 | 87,696 | 10 | 120,528 | 10 | 80,928 | 10 | 39,270 |
| 11 | 101,088 | 11 | 85,536 | 11 | 44,823 | 11 | 120,528 | 11 | 80,928 | 11 | 44,352 |
| 12 | 101,088 | 12 | 85,536 | 12 | 67 | 12 | 120,528 | 12 | 80,928 | 12 | 44,352 |
| 13 | 100,724 | 13 | 35,699 | 13 | 44,154 | 13 | 120,528 | 13 | 80,928 | 13 | 44,352 |
| 14 | 103,824 | 14 | 92,160 | 14 | 96,336 | 14 | 120,528 | 14 | 80,928 | 14 | 44,352 |
| 15 | 103,824 | 15 | 92,160 | 15 | 96,336 | 15 | 119,520 | 15 | 64,512 | 15 | 83,952 |
| 16 | 103,824 | 16 | 92,160 | 16 | 96,336 | 16 | 119,520 | 16 | 64,512 | 16 | 83,952 |
| 17 | 98,633 | 17 | 82,048 | 17 | 78,098 | 17 | 119,520 | 17 | 64,512 | 17 | 83,952 |
| 18 | 103,824 | 18 | 94,320 | 18 | 50,018 | 18 | 119,520 | 18 | 22,000 | 18 | 76,956 |
| 19 | 103,824 | 19 | 94,320 | 19 | 84,240 | 19 | 119,520 | 19 | 0 | 19 | 83,952 |
| 20 | 103,824 | 20 | 94,320 | 20 | 84,240 | 20 | 117,943 | 20 | 0 | 20 | 83,952 |
| 21 | 90,720 | 21 | 94,320 | 21 | 84,240 | 21 | 120,240 | 21 | 0 | 21 | 83,952 |
| 22 | 90,720 | 22 | 94,320 | 22 | 84,240 | 22 | 120,240 | 22 | 41,000 | 22 | 83,952 |
| 23 | 90,720 | 23 | 94,320 | 23 | 84,240 | 23 | 120,240 | 23 | 80,784 | 23 | 80,784 |
| 24 | 90,720 | 24 | 65,885 | 24 | 84,240 | 24 | 120,240 | 24 | 80,784 | 24 | 80,784 |
| 25 | 90,720 | 25 | 83,664 | 25 | 84,240 | 25 | 120,240 | 25 | 80,784 | 25 | 80,784 |
| 26 | 78,624 | 26 | 83,664 | 26 | 100,512 | 26 | 120,240 | 26 | 80,784 | 26 | 80,784 |
| 27 | 78,624 | 27 | 83,664 | 27 | 100,512 | 27 | 95,328 | 27 | 80,784 | 27 | 76,608 |
| 28 | 78,624 | 28 | 83,664 | 28 | 100,512 | 28 | 95,328 | 28 | 80,784 | 28 | 76,608 |
| 29 | 78,624 | | | 29 | 100,512 | 29 | 95,328 | 29 | 80,784 | 29 | 76,608 |
| 30 | 78,624 | | | 30 | 100,512 | 30 | 95,328 | 30 | 82,944 | 30 | 76,608 |
| 31 | 78,624 | | | 31 | 100,512 | | | 31 | 82,944 | | |
| **Total Monthly Flow (gallons)** | 2,677,185 | | 2,376,467 | | 2,551,940 | | 3,464,212 | | 2,274,408 | | 2,240,226 |
| **Average Daily Flow (gallons)** | 86,400 | | 84,900 | | 82,300 | | 115,500 | | 73,400 | | 74,700 |
| **Total Plant Run Time (minutes)** | 44,387 | | 38,954 | | 40,802 | | 43,150 | | 38,640 | | 42,915 |
| **Av. Flow During Actual Plant Run Time (gpm)** | **60** | | **61** | | **63** | | **80** | | **59** | | **52** |

| Period | Total Gallons Treated |
|---|---|
| 6 Months | 15,584,437 |
| 12 Months | 30,203,264 |
| Since 1995 | 373,717,816 |

**Notes:**

gpd = Gallons per day. Av. = Average. gpm = Gallons per minute.

Av. Flow is calculated by dividing the total monthly flow by the total number of operational days for the given month.

**Table 5**
**Summary of Groundwater Elevations**
**Wayne Reclamation & Recycling**

| Well Identification | Date: TOIC Elevation 2001 - 2003 | 01/23/2009 | 02/09/2009 | 03/23/2009 | 04/20/2009 | 05/13/2009 | 06/10/2009 |
|---|---|---|---|---|---|---|---|
| | | Groundwater Elevation (feet above mean sea level) | | | | | |
| MW-1D | 826.08 | -- | -- | -- | 813.62 | | |
| MW-2S | 825.34 | 807.89 | 807.97 | 812.81 | 812.90 | 811.15 | 810.40 |
| MW-3S | 824.06 | 807.98 | 807.97 | 812.32 | 812.55 | 810.52 | 809.92 |
| MW-4S | 843.06 | -- | -- | -- | 813.67 | | |
| MW-5S | 833.02 | -- | -- | -- | 815.29 | | |
| MW-7S | 836.12 | -- | -- | -- | 813.28 | | |
| MW-8S | 835.52 | -- | -- | -- | 814.53 | | |
| MW-8D | 834.11 | -- | -- | -- | 813.63 | | |
| MW-9S | 825.44 | -- | -- | -- | 813.94 | | |
| MW-10S | 823.15 | 807.97 | 808.18 | 812.50 | 812.90 | 810.76 | 810.03 |
| MW-11S | 825.08 | 808.13 | 808.02 | 812.50 | 812.49 | 810.54 | 810.11 |
| MW-13S | 826.40 | 811.18 | 811.75 | 812.50 | 812.76 | 811.77 | 811.52 |
| MW-13D | 826.44 | -- | -- | -- | 812.57 | | |
| MW-14S | 821.30 | -- | -- | -- | 812.78 | | |
| MW-15S | 827.64 | -- | -- | -- | 814.48 | | |
| MW-16S | 827.41 | -- | -- | -- | 814.39 | | |
| MW-17S | 826.56 | -- | -- | -- | 814.71 | | |
| MW-18S | 824.16 | -- | -- | -- | 812.45 | | |
| MW-19S | 832.07 | -- | -- | -- | 814.84 | | |
| P-1 | 834.28 | -- | -- | -- | 814.18 | | |
| P-2 | 825.49 | -- | -- | -- | 814.28 | | |
| P-3 | 823.48 | -- | -- | -- | 814.14 | | |
| P-4 | 822.67 | -- | -- | -- | 814.14 | | |
| MW-83AD | 826.15 | 809.31 | 809.69 | 812.83 | 812.89 | 810.52 | 810.42 |
| MW-83AS | 826.13 | 807.81 | 807.91 | 812.71 | 812.83 | 811.03 | 810.29 |
| MW-83B | 840.55 | -- | -- | -- | 813.25 | | |
| MW-83DD | 825.30 | -- | -- | -- | 812.71 | | |
| MW-83DS | 825.21 | 810.46 | 810.85 | 812.73 | 812.89 | 811.09 | 811.00 |
| GM-3 | 822.87 | -- | -- | -- | -- | | |
| GM-4 | 827.40 | -- | -- | -- | -- | | |
| PZ-1 | 823.66 | -- | -- | -- | -- | | |
| PZ-2 | 825.73 | -- | -- | -- | -- | | |
| PZ-3 | 826.46 | -- | -- | -- | -- | | |
| PZ-4 | 825.52 | -- | -- | -- | -- | | |
| G-1 | 808.82 | -- | -- | -- | -- | | |
| G-2 | 810.10 | -- | -- | -- | -- | | |
| G-3 | 809.91 | -- | -- | -- | -- | | |
| G-4 | 810.21 | -- | -- | -- | -- | | |
| RW-1 | 818.45 | -- | -- | -- | 812.19 | | |
| RW-2 | 824.29 | -- | -- | -- | 814.56 | | |
| RW-3 | 822.71 | -- | -- | -- | 806.12 | | |
| RW-4 | 833.24 | -- | -- | -- | 809.99 | | |
| RW-5 | 823.94 | -- | -- | -- | 809.64 | | |
| RW-6 | 820.71 | -- | -- | -- | 810.64 | | |
| RW-7 | 820.21 | -- | -- | -- | 792.41 | | |
| RW-8 | 821.86 | -- | -- | -- | 811.95 | | |
| RW-9 | 821.69 | -- | -- | -- | 806.21 | | |
| RW-10 | 822.55 | -- | -- | -- | 809.44 | | |

**Notes:**

TOIC = Top of inner well casing; MW = monitoring well; P and PZ = piezometer; GM = landfill well; G = river gauge point; RW = recovery well.

TOIC and surface elevations based on Benchmark Surveying, Inc. surveys of 7/2/2001, 10/25/2001, and 5/1/2003, except where noted.

(1) TOIC elevations based on InSite, Inc. survey of 7/2/2002, following repair of those wells.

# Table 6
# Recovery Well Analytical Results
# October 2008
# Wayne Reclamation & Recycling

| CONSTITUENT Date Sampled: | RW-1 10/17/2008 | RW-3 10/17/2008 | RW-4 10/17/2008 | RW-5 10/17/2008 | PRG (µg/L) |
|---|---|---|---|---|---|
| **VOCs (µg/L)** | | | | | |
| Acetone | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | < 2 | < 2 | < 2 | < 1 | -- |
| 2-Butanone (MEK) | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | **11.3** | < 2 | < 2 | < 2 | -- |
| Chloroform | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | **34** | **3** | < 1 | **3** | **973** |
| 1,2-Dichloroethane | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | *<1* | *< 1* | *< 1* | **1.5** | **0.0167** |
| cis-1,2-Dichloroethene | **54** | **140** | **178** | **1,600 J** | **70** |
| trans-1,2-Dichloroethene | **1.9** | **4.5** | **16** | **11** | **100** |
| 1,2-Dichloroethene, Total | **55** | **145** | **194** | **1,600** | (170) |
| 1,2-Dichloropropane | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | **25** | **66** | < 1 | **14** | **2.54** |
| 1,2,4-Trimethylbenzene | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | **14** | **8.4** | **2** | **357 J** | **0.0283** |
| Xylenes, Total | < 1 | < 1 | < 1 | < 2 | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
-- = No PRG assigned.
< = Not detected above the reporting limit provided.

**Bold** = Analyte detected above laboratory reporting limit.
*Italics* = Reporting limit above the corresponding PRG.
Shaded = Analyte detected above the corresponding PRG.

**Table 7**
**Summary of Groundwater Treatment System Volatile Organic Compound**
**Influent and Effluent Sampling**
**Wayne Reclamation Recycling**

| Date Sampled | 1/23/2009 | | 2/9/2009 | | 3/23/2009 | |
|---|---|---|---|---|---|---|
| **CONSTITUENT** | **IN** | **EFF** | **IN** | **EFF** | **IN** | **EFF** |
| **VOCs (µg/L)** | | | | | | |
| 1,1-Dichloroethane | **13** | <1.0 | **8** | <1.0 | **12** | <1.0 |
| 1,2-Dichloroethane | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 1,1-Dichloroethene | **3** | <1.0 | 2 | <1.0 | <1.0 | <1.0 |
| cis-1,2-Dichloroethene | **1030** | **20** | **622** | **10** | **911** | **88** |
| trans-1,2-Dichloroethene | **12** | <1.0 | **7** | <1.0 | **14** | <1.0 |
| Trichloroethene | **239** | <1.0 | **89** | <1.0 | **275** | <1.0 |
| Vinyl Chloride | **160** | <1.0 | **120** | <1.0 | **128** | <1.0 |
| **Total VOC Concentration** | **1,456** | **20** | **848** | **10** | **1,340** | **88** |

| Date Sampled | 4/20/2009 | | 5/13/2009 | | 6/10/2009 | |
|---|---|---|---|---|---|---|
| **CONSTITUENT** | **IN** | **EFF** | **IN** | **EFF** | **IN** | **EFF** |
| **VOCs (µg/L)** | | | | | | |
| 1,1-Dichloroethane | **3** | <1.0 | **15** | <1.0 | **14** | <1.0 |
| 1,2-Dichloroethane | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 1,1-Dichloroethene | <1.0 | <1.0 | **3** | <1.0 | **2** | <1.0 |
| cis-1,2-Dichloroethene | **393** | **37** | **1,070** | **93** | **982** | **66** |
| trans-1,2-Dichloroethene | **7** | <1.0 | **18** | <1.0 | **15** | <1.0 |
| Trichloroethene | **85** | **3** | **276** | **11** | **217** | **8** |
| Vinyl Chloride | **74** | <1.0 | **188** | <1.0 | **124** | <1.0 |
| **Total VOC Concentration** | **562** | **40** | **1,570** | **104** | **1,354** | **74** |

**Notes:**

Volatile organic compounds (VOCs) reported in micrograms per liter (µg/L).
< = Not detected above the reporting limit provided.
**Bold** = Analyte detected above the laboratory reporting limit.
Results indicated for primary detected constituents.

IN = Influent water sample.
EFF = Effluent water sample.

# Table 8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/23/2009 | 2/09/2009 | 3/30/2009 | 4/20/2009 | 5/13/2009 | 6/10/2009 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | **22** | <14.3 | **21** | <13.4 | **12** | <14.3 |
| 1,1-Dichloroethene | <13.4 | <14.3 | <13.8 | <13.4 | <13.8 | <14.3 |
| cis-1,2-Dichloroethene | **2,340** | **1,060** | **1,350** | **868** | **1,230** | **898** |
| trans-1,2-Dichloroethene | **23** | <14.3 | **22** | **16** | **16** | <14.3 |
| Tetrachloroethene | <13.4 | <14.3 | <13.8 | <13.4 | <13.8 | <14.3 |
| Toluene | <13.4 | <14.3 | <13.8 | <13.4 | <13.8 | <14.3 |
| 1,1,1-Trichloroethane | <13.4 | <14.3 | <13.8 | <13.4 | <13.8 | <14.3 |
| Trichloroethene | **367** | **185** | **288** | **155** | **192** | **201** |
| Vinyl Chloride | **390** | **298** | **295** | **223** | **230** | **221** |
| **Cumulative Risk (1)** | **1.12E-07** | **8.09E-08** | **8.56E-08** | **6.18E-08** | **6.55E-08** | **6.39E-08** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 9.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

**Table 9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **PCE** *Carcinogen* | **TCE** *Carcinogen* | **1,1-DCE** *Non-Carcinogen* | **cis-1,2-DCE** *Non-Carcinogen* | **trans-1,2-DCE** *Non-Carcinogen* | **VC** *Carcinogen* | **1,1,1-TCA** *Non-Carcinogen* | **1,1-DCA** *Carcinogen* | **Toluene** *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 13 | 367 | 13 | 2340 | 23 | 390 | 13 | 22 | 13 | |
| **1/23/2009** | (g/s) | 0.0001 | 0.0021 | 0.0001 | 0.0131 | 0.0001 | 0.0022 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.010 | 0.000 | 0.062 | 0.001 | 0.010 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.02E-09 | 1.93E-08 | | | | 9.03E-08 | | 9.43E-12 | | 1.12E-07 |
| **EFF** | (ppb[v/v]) | 14 | 185 | 14 | 1060 | 23 | 298 | 14 | 14 | 14 | |
| **2/09/2009** | (g/s) | 0.0001 | 0.0010 | 0.0001 | 0.0059 | 0.0001 | 0.0017 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.005 | 0.000 | 0.028 | 0.001 | 0.008 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.17E-09 | 9.73E-09 | | | | 6.90E-08 | | 6.00E-12 | | 8.09E-08 |
| **EFF** | (ppb[v/v]) | 14 | 288 | 14 | 1350 | 22 | 295 | 14 | 21 | 14 | |
| **3/30/2009** | (g/s) | 0.0001 | 0.0016 | 0.0001 | 0.0076 | 0.0001 | 0.0017 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.008 | 0.000 | 0.036 | 0.001 | 0.008 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.17E-09 | 1.51E-08 | | | | 6.83E-08 | | 9.00E-12 | | 8.56E-08 |
| **EFF** | (ppb[v/v]) | 13 | 155 | 13 | 868 | 16 | 223 | 13 | 13 | 13 | |
| **4/20/2009** | (g/s) | 0.0001 | 0.0009 | 0.0001 | 0.0049 | 0.0001 | 0.0012 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.004 | 0.000 | 0.023 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.02E-09 | 8.15E-09 | | | | 5.16E-08 | | 5.57E-12 | | 6.18E-08 |
| **EFF** | (ppb[v/v]) | 14 | 192 | 14 | 1230 | 16 | 230 | 14 | 12 | 14 | |
| **5/13/2009** | (g/s) | 0.0001 | 0.0011 | 0.0001 | 0.0069 | 0.0001 | 0.0013 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.005 | 0.000 | 0.032 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.17E-09 | 1.01E-08 | | | | 5.32E-08 | | 5.14E-12 | | 6.55E-08 |
| **EFF** | (ppb[v/v]) | 14 | 201 | 14 | 898 | 14 | 221 | 14 | 14 | 14 | |
| **6/10/2009** | (g/s) | 0.0001 | 0.0011 | 0.0001 | 0.0050 | 0.0001 | 0.0012 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.005 | 0.000 | 0.024 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.17E-09 | 1.06E-08 | | | | 5.11E-08 | | 6.00E-12 | | 6.39E-08 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]).

g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).

ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.

IN = Sample collected from air treatment system influent.

EFF = Sample collected from air treatment system effluent.

Bold = Cumulative Cancer Risk above action level.

PCE - Tetrachloroethene
TCE - Trichloroethene
1,1-DCE - 1,1-Dichloroethene
cis-1,2-DCE - cis-1,2-Dichloroethene
trans-1,2-DCE - trans-1,2-Dichloroethene
VC - Vinyl chloride
1,1,1-TCA - 1,1,1-Trichloroethane
1,1-DCA - 1,1-Dichloroethane

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**FIGURES**

NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. RECORD OF CONSTRUCTION PIPING LAYOUT IS BASED ON FIELD MEASUREMENTS AND OBSERVATIONS. PIPING LAYOUT WAS NOT SURVEYED.

LEGEND

- RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- RIVER GAUGE POINT LOCATION
- RIVER WATER SAMPLING LOCATION
- SYSTEM PIPING

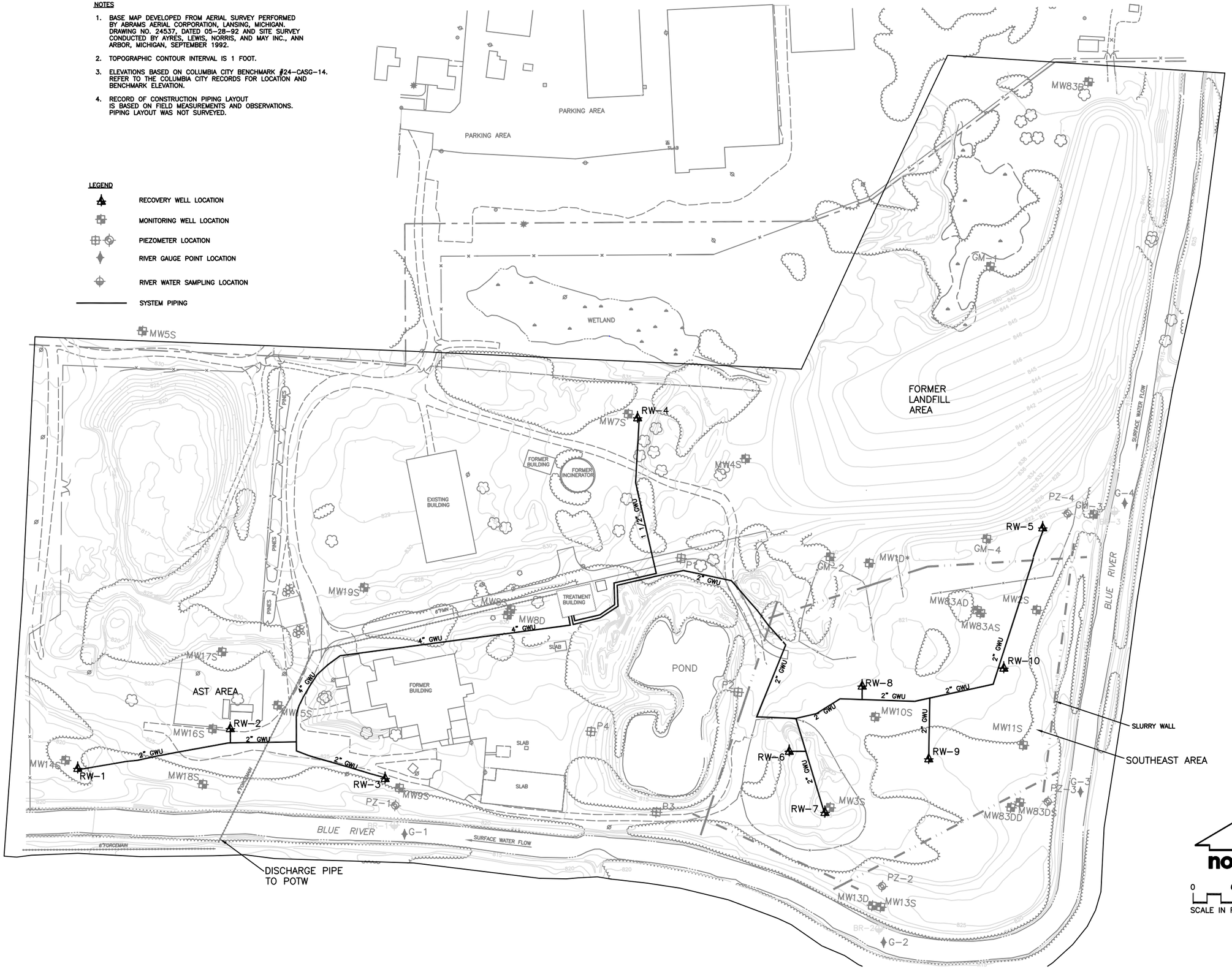


FIGURE 1

| | |
|---|---|
| Developed By | BRT |
| Approved By | BRT |
| Drawn By | DTM |
| Date | 5/22/09 |
| Reference | |
| Consultants | |

| Approvd. | By | Date | Issuance/Revisions | Releases |
|---|---|---|---|---|
| | | | | |

SITE PLAN – GROUNDWATER EXTRACTION & TREATMENT SYSTEM AND SLURRY WALL

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NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. RECORD OF CONSTRUCTION PIPING LAYOUT IS BASED ON FIELD MEASUREMENTS AND OBSERVATIONS. PIPING LAYOUT WAS NOT SURVEYED.

LEGEND

- PRESSURE PROBE LOCATION
- SOIL VAPOR EXTRACTION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- RIVER GAUGE POINT LOCATION
- RIVER WATER SAMPLING LOCATION
- SYSTEM PIPING

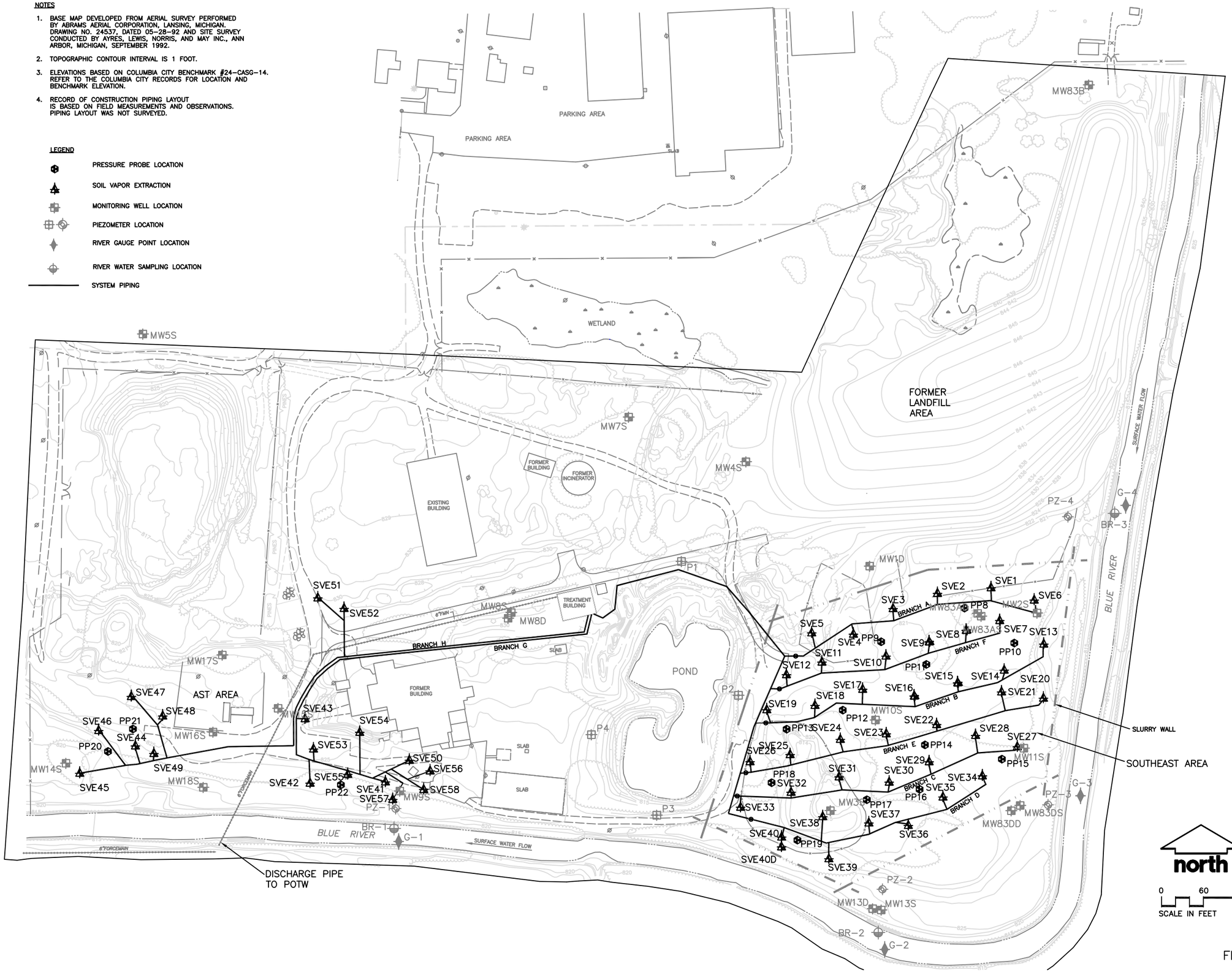


FIGURE 2

| Releases | Issuance/Revisions | Date | By | Apprvd. |
|---|---|---|---|---|
| | | | | |

Developed By BRT
Approved By BRT
Drawn By DTM
Date 5/22/09
Reference
Consultants

SITE PLAN - SOIL VAPOR EXTRACTION SYSTEM

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NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. RECORD OF CONSTRUCTION PIPING LAYOUT IS BASED ON FIELD MEASUREMENTS AND OBSERVATIONS. PIPING LAYOUT WAS NOT SURVEYED.

LEGEND

- AIR SPARGING WELL LOCATION
- RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- RIVER GAUGE POINT LOCATION
- RIVER WATER SAMPLING LOCATION
- SYSTEM PIPING

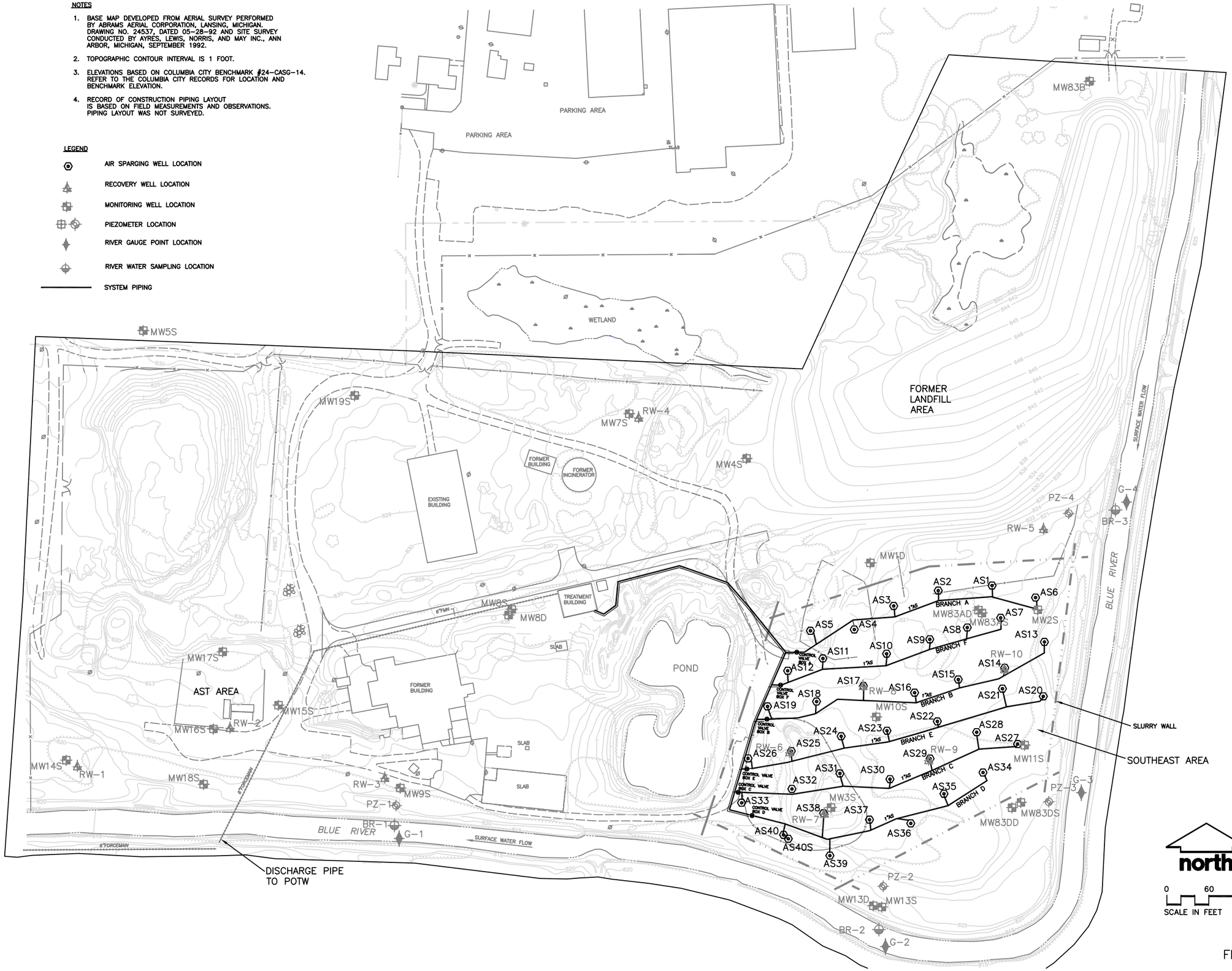


FIGURE 3

| | |
|---|---|
| Developed By | BRT |
| Approved By | BRT |
| Drawn By | DTM |
| Date | 5/22/09 |
| Reference | |
| Consultants | |

| Releases | Issuance/Revisions | Date | By | Apprvd. |
|---|---|---|---|---|
| | | | | |

SITE PLAN – AIR SPARGING SYSTEM

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**Figure 4**
**Summary of Groundwater Treatment and SVE Systems Combined Air System Effluent Data**
**Wayne Reclamation & Recycling**

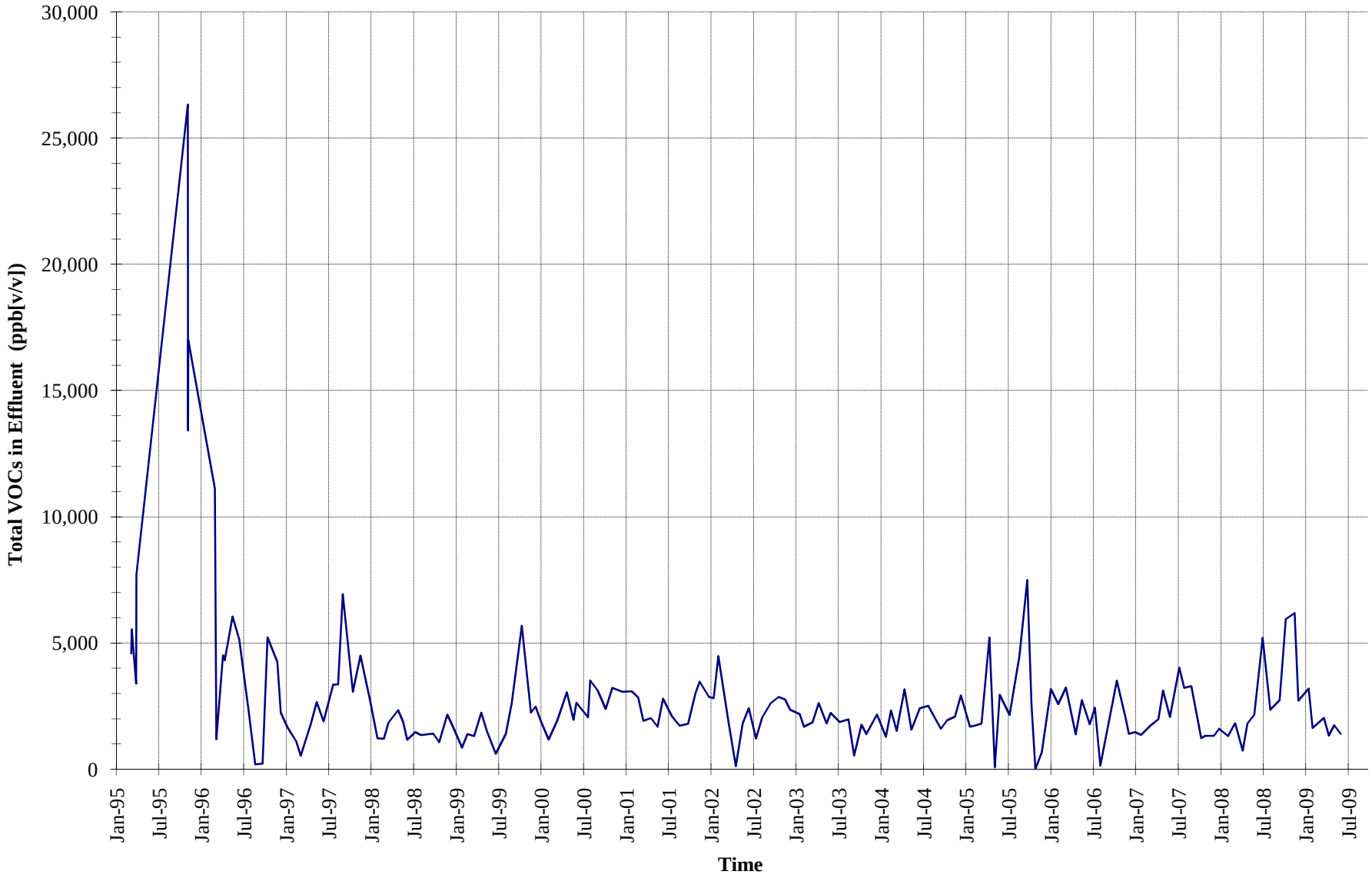


**Figure 5**
**Cumulative and Sustained Groundwater Recovery**
**Wayne Reclamation & Recycling**

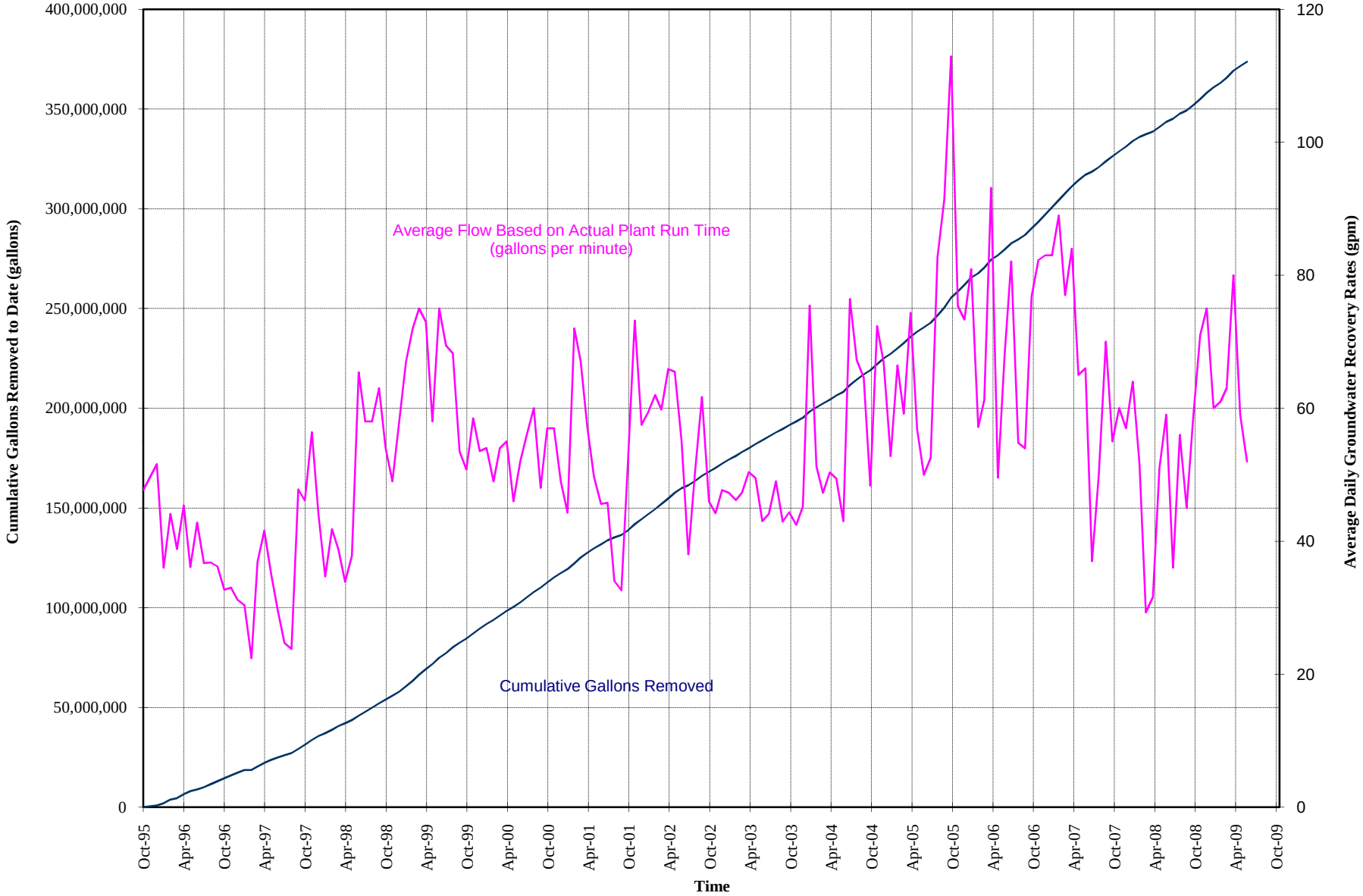
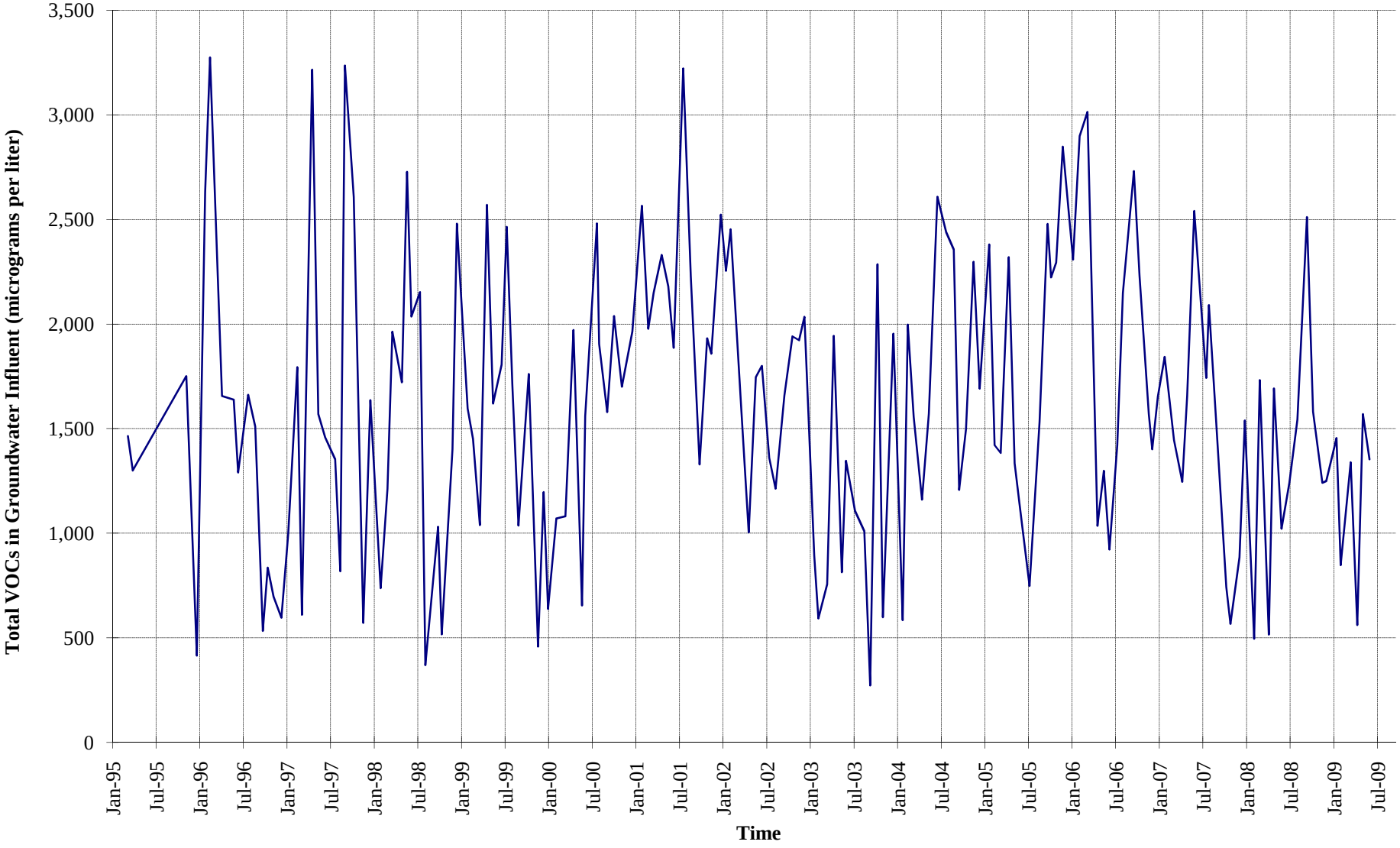


**Figure 6**
**Summary of Groundwater Treatment System Influent Data**
**Wayne Reclamation & Recycling**



NOTES

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2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT.

LEGEND

- RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- GAUGE POINT LOCATION
- * NOT USED IN CONTOURING
- 810.5 GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET
- APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION

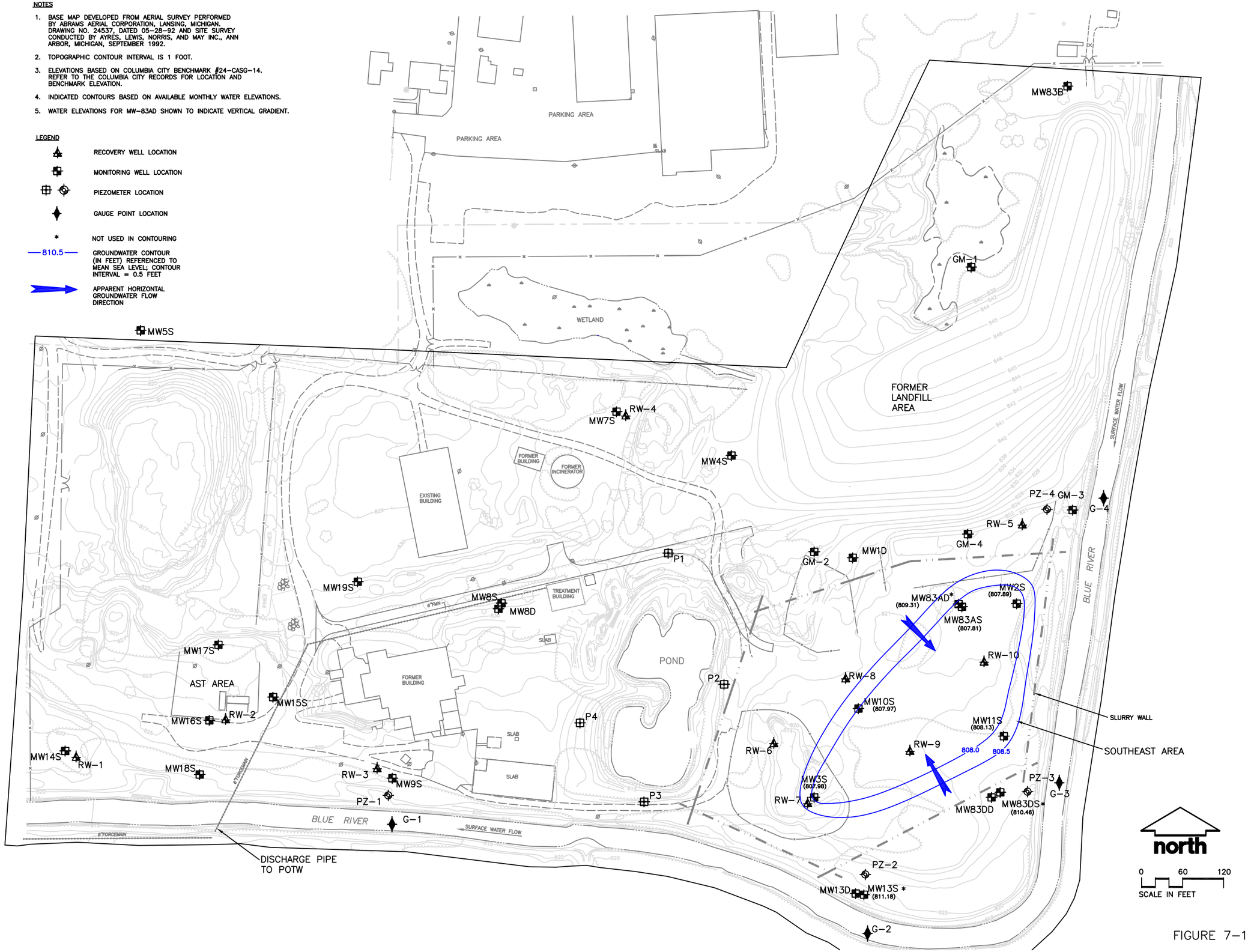


FIGURE 7-1

| | | | |
|---|---|---|---|
| Developed By | BRT | Drawn By | DTM |
| Approved By | BRT | Date | 5/22/09 |
| Reference | | | |
| Consultants | | | |

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GROUNDWATER CONTOURS - JANUARY 2009

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NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT.

LEGEND

- RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- GAUGE POINT LOCATION
- * NOT USED IN CONTOURING
- 808.0 GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET
- APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION

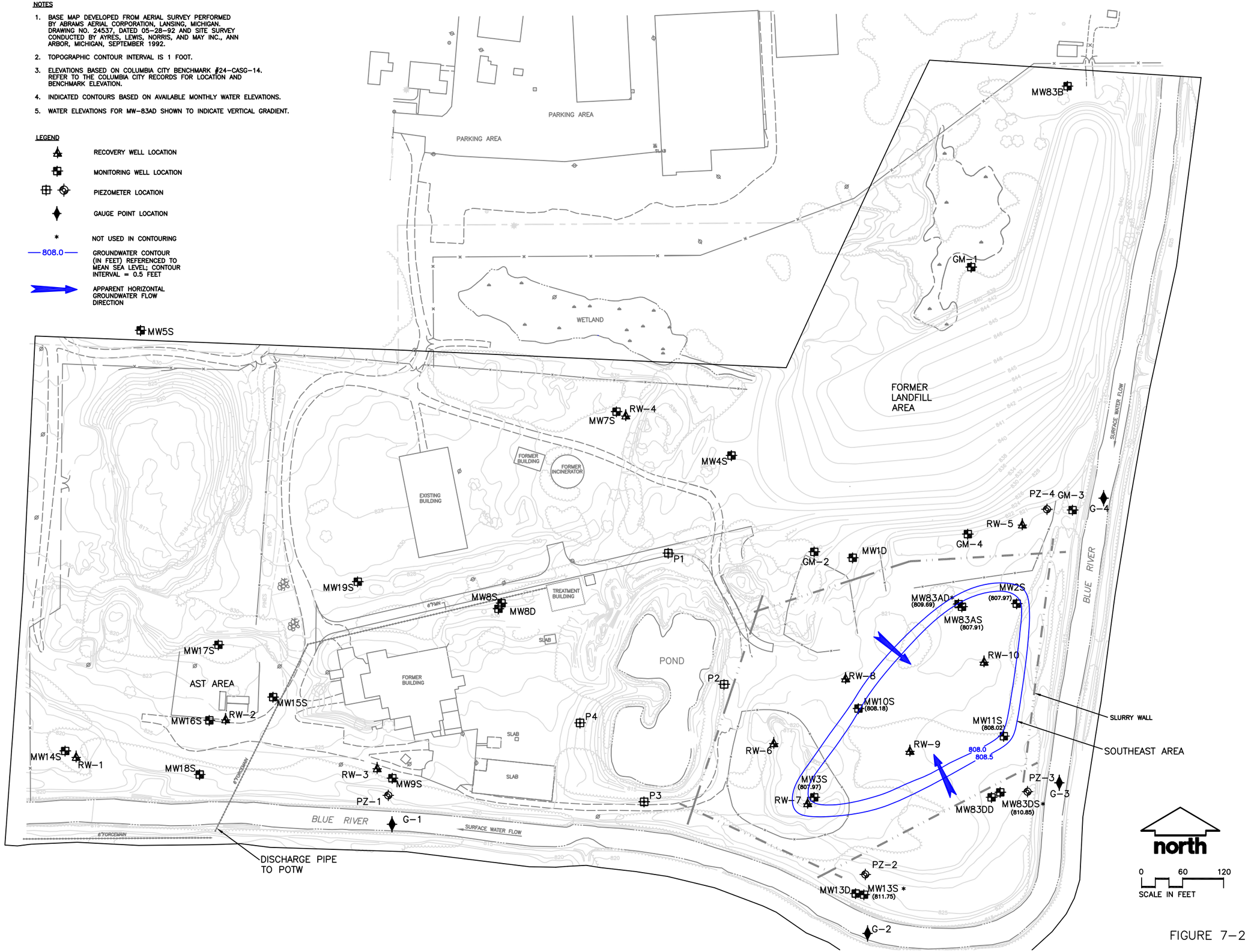


FIGURE 7-2

| | |
|---|---|
| Developed By | BRT |
| Approved By | BRT |
| Drawn By | DTM |
| Date | 5/22/09 |
| Reference | |
| Consultants | |

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|---|---|---|---|---|
| | | | | |

GROUNDWATER CONTOURS - FEBRUARY 2009

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J:\01_INDUSTRIAL-OTHER\3868-Wayne RR\5-CADD\SAPR 28\Fig 07_2 Cont 07 - 28.dwg Aug/24/09

NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT.

LEGEND

- RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- GAUGE POINT LOCATION
- * NOT USED IN CONTOURING
- 812.5 GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET
- APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION

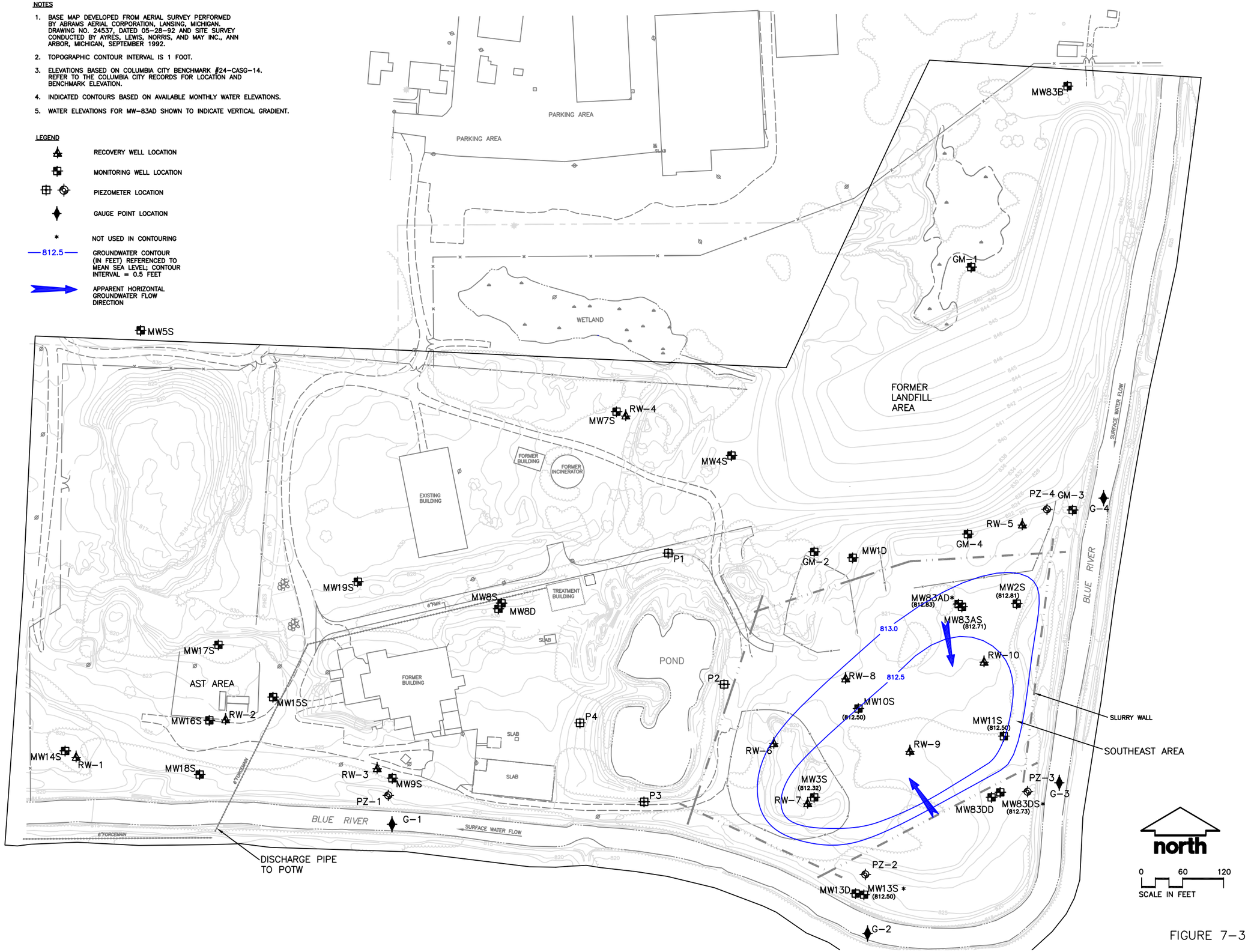


FIGURE 7-3

| | | | |
|---|---|---|---|
| Developed By | BRT | Drawn By | DTM |
| Approved By | BRT | Date | 5/22/09 |
| Reference | | | |
| Consultants | | | |

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GROUNDWATER CONTOURS - MARCH 2009

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NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT.

LEGEND

- RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- GAUGE POINT LOCATION
- * NOT USED IN CONTOURING
- 807.0 GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET
- APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION

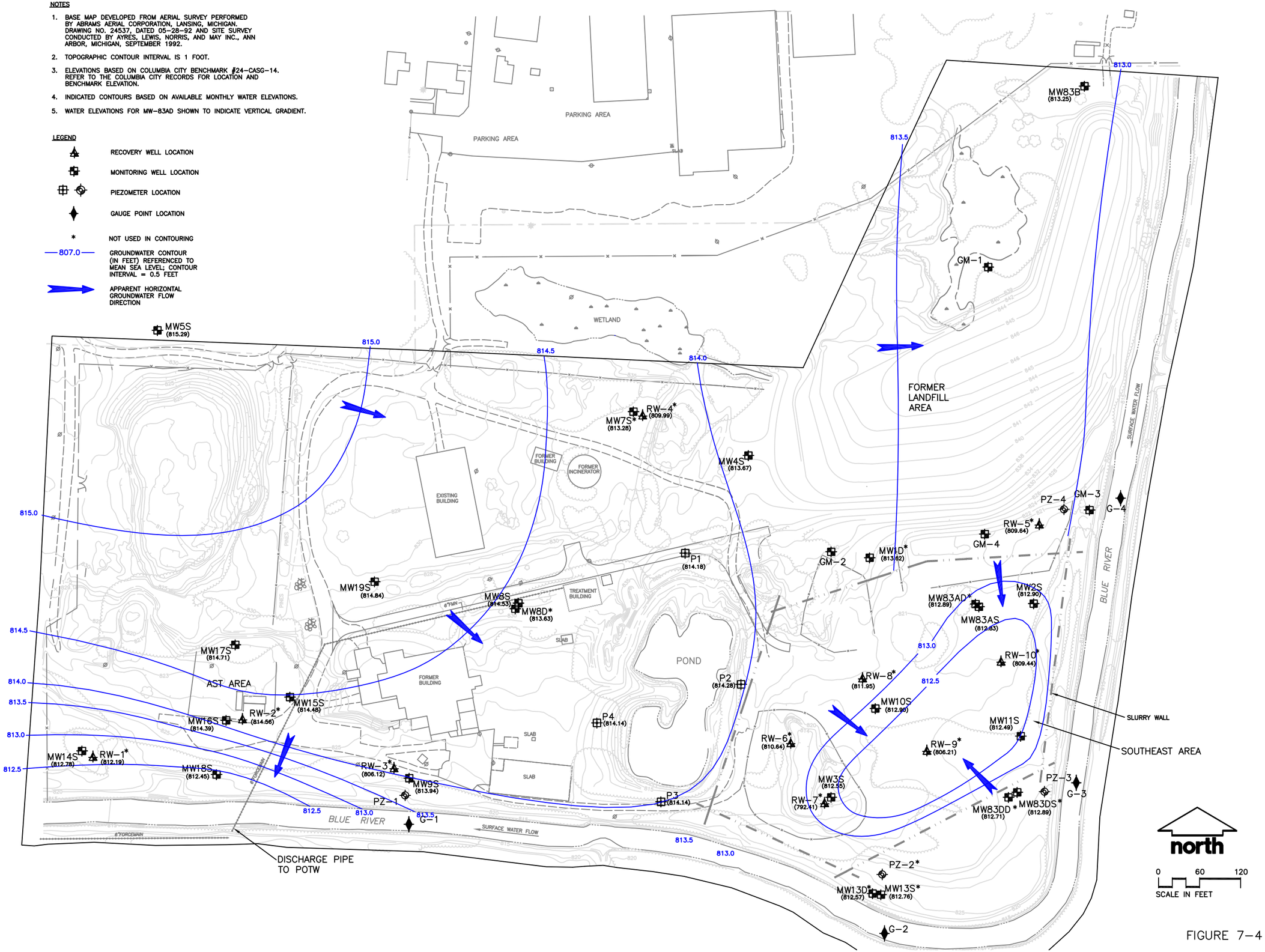


FIGURE 7-4

| | |
|---|---|
| Developed By | BRT |
| Approved By | BRT |
| Drawn By | DTM |
| Date | 1/16/09 |
| Reference | |
| Consultants | |

| Releases | Issuance/Revisions | Date | By | Apprvd. |
|---|---|---|---|---|
| | | | | |

GROUNDWATER CONTOURS - APRIL 2009

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NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT.

LEGEND

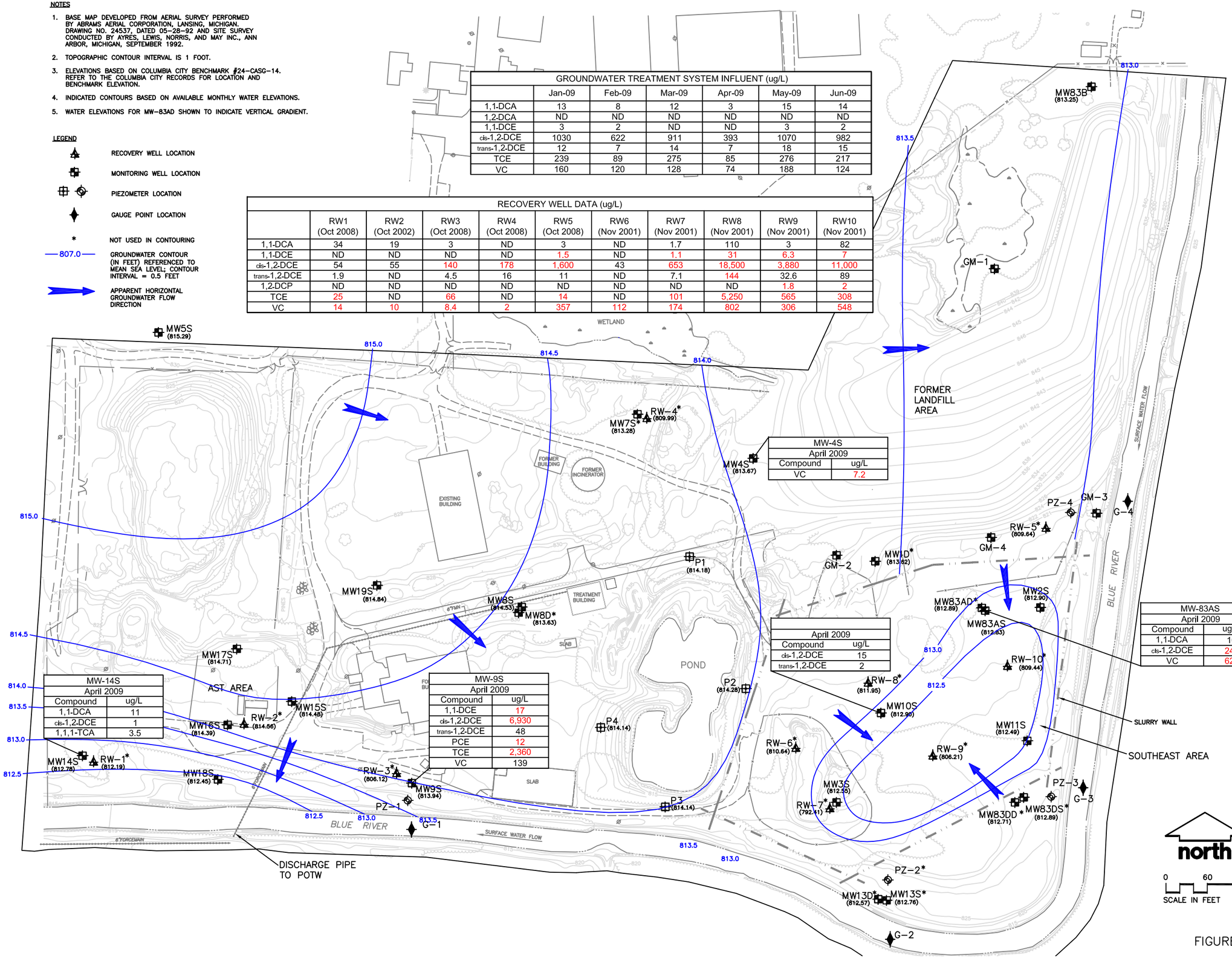
- RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- GAUGE POINT LOCATION
- * NOT USED IN CONTOURING
- 807.0 GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET
- APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION

GROUNDWATER TREATMENT SYSTEM INFLUENT (ug/L)

| | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 |
|---|---|---|---|---|---|---|
| 1,1-DCA | 13 | 8 | 12 | 3 | 15 | 14 |
| 1,2-DCA | ND | ND | ND | ND | ND | ND |
| 1,1-DCE | 3 | 2 | ND | ND | 3 | 2 |
| cis-1,2-DCE | 1030 | 622 | 911 | 393 | 1070 | 982 |
| trans-1,2-DCE | 12 | 7 | 14 | 7 | 18 | 15 |
| TCE | 239 | 89 | 275 | 85 | 276 | 217 |
| VC | 160 | 120 | 128 | 74 | 188 | 124 |

RECOVERY WELL DATA (ug/L)

| | RW1 (Oct 2008) | RW2 (Oct 2002) | RW3 (Oct 2008) | RW4 (Oct 2008) | RW5 (Oct 2008) | RW6 (Nov 2001) | RW7 (Nov 2001) | RW8 (Nov 2001) | RW9 (Nov 2001) | RW10 (Nov 2001) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-DCA | 34 | 19 | 3 | ND | 3 | ND | 1.7 | 110 | 3 | 82 |
| 1,1-DCE | ND | ND | ND | ND | 1.5 | ND | 1.1 | 31 | 6.3 | 7 |
| cis-1,2-DCE | 54 | 55 | 140 | 178 | 1,600 | 43 | 653 | 18,500 | 3,880 | 11,000 |
| trans-1,2-DCE | 1.9 | ND | 4.5 | 16 | 11 | ND | 7.1 | 144 | 32.6 | 89 |
| 1,2-DCP | ND | ND | ND | ND | ND | ND | ND | ND | 1.8 | 2 |
| TCE | 25 | ND | 66 | ND | 14 | ND | 101 | 5,250 | 565 | 308 |
| VC | 14 | 10 | 8.4 | 2 | 357 | 112 | 174 | 802 | 306 | 548 |




| MW-4S | |
|---|---|
| April 2009 | |
| Compound | ug/L |
| VC | 7.2 |

| April 2009 | |
|---|---|
| Compound | ug/L |
| cis-1,2-DCE | 15 |
| trans-1,2-DCE | 2 |

| MW-83AS | |
|---|---|
| April 2009 | |
| Compound | ug/L |
| 1,1-DCA | 10 |
| cis-1,2-DCE | 247 |
| VC | 626 |

| MW-14S | |
|---|---|
| April 2009 | |
| Compound | ug/L |
| 1,1-DCA | 11 |
| cis-1,2-DCE | 1 |
| 1,1,1-TCA | 3.5 |

| MW-9S | |
|---|---|
| April 2009 | |
| Compound | ug/L |
| 1,1-DCE | 17 |
| cis-1,2-DCE | 6,930 |
| trans-1,2-DCE | 48 |
| PCE | 12 |
| TCE | 2,360 |
| VC | 139 |

FIGURE 7-5

| | |
|---|---|
| Developed By | BRT |
| Approved By | BRT |
| Drawn By | DTM |
| Date | 1/16/09 |
| Reference | |
| Consultants | |
| Approvd. | |
| By | |
| Date | |
| Issuance/Revisions | |
| Releases | |

ANALYTICAL RESULTS SUMMARY

SEMI-ANNUAL PROGRESS REPORT 28
WAYNE RECLAMATION & RECYCLING, INC.
COLUMBIA CITY, INDIANA

Printed

Sheet Number
4 of 7

Drawing Number
4050758
010101 D4

MWH

J:\01_INDUSTRIAL-OTHER\3668-Wayne RR\5-CADD\SAPR 28\Fig 07_5 Cont VOCs April 2009.dwg Aug/24/09

NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
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4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT.

LEGEND

- RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- GAUGE POINT LOCATION
- * NOT USED IN CONTOURING
- 807.0 GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET
- APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION

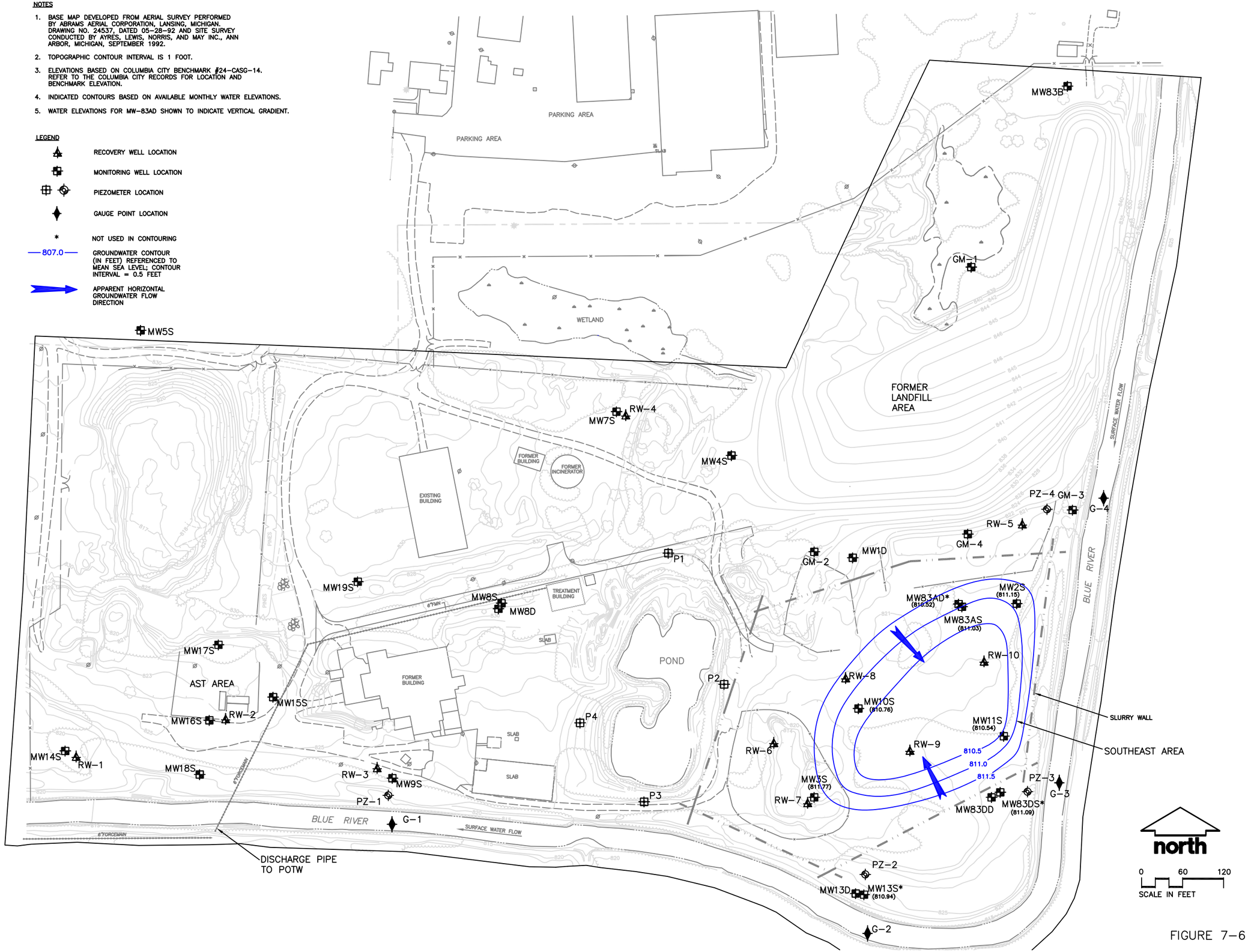


FIGURE 7-6

| | |
|---|---|
| Drawn By | DTM |
| Developed By | BRT |
| Approved By | BRT |
| Date | 7/13/09 |
| Reference | |
| Consultants | |

| Releases | Issuance/Revisions | Date | By | Apprvd. |
|---|---|---|---|---|
| | | | | |

GROUNDWATER CONTOURS - MAY 2009

SEMI-ANNUAL PROGRESS REPORT 27
WAYNE RECLAMATION & RECYCLING, INC.
COLUMBIA CITY, INDIANA

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010101 D6

MWH

J:\01_INDUSTRIAL-OTHER\3868-Wayne RR\5-CADD\SAPR 28\Fig 07_6 Cont 07.dwg Aug/24/09

NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
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4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT.

LEGEND

- RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- GAUGE POINT LOCATION
- * NOT USED IN CONTOURING
- 806.5 GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET
- APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION

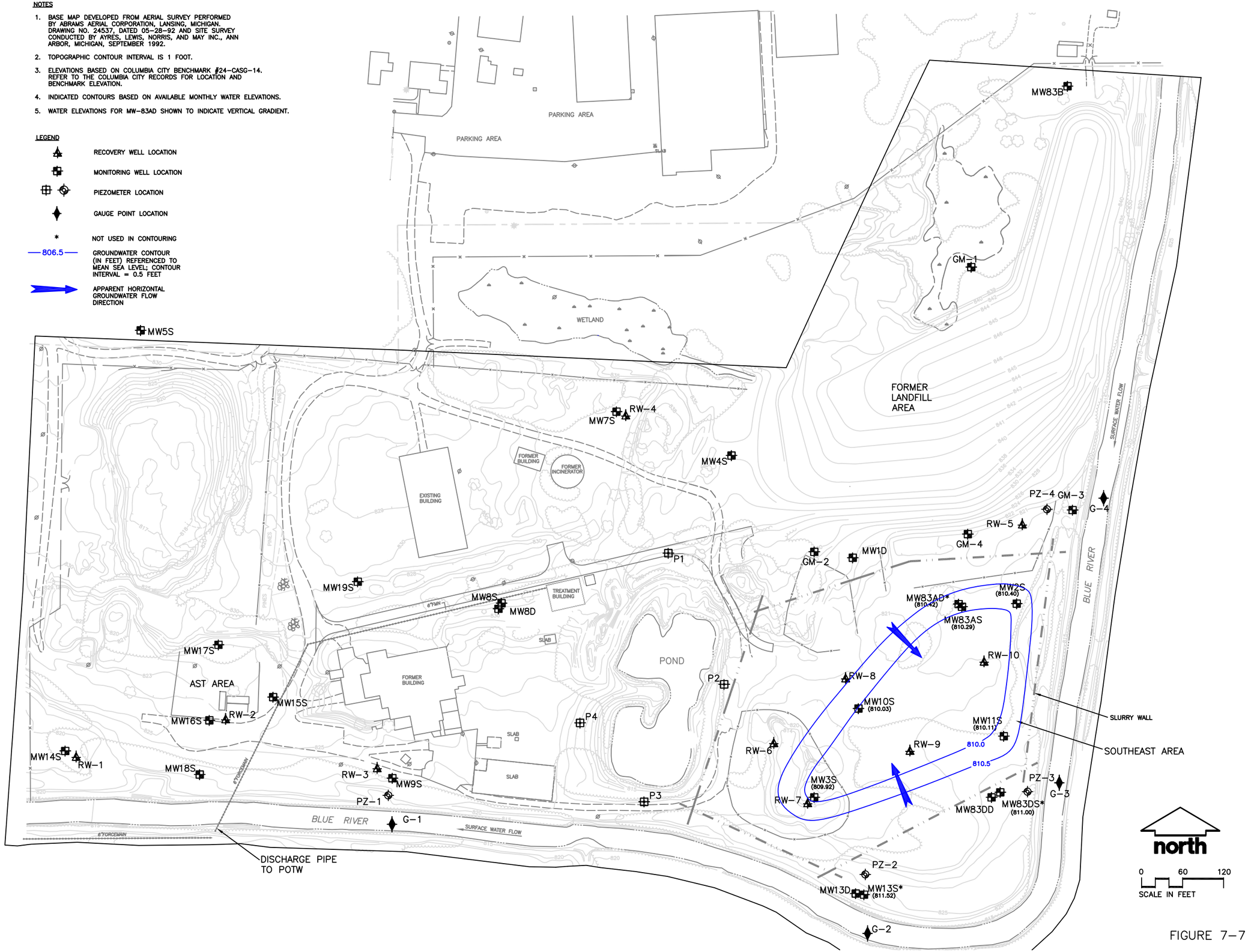


FIGURE 7-7

| | | | |
|---|---|---|---|
| Developed By | BRT | Drawn By | DTM |
| Approved By | BRT | Date | 7/14/09 |
| Reference | | | |
| Consultants | | | |

| Releases | Issuance/Revisions | Date | By | Apprvd. |
|---|---|---|---|---|
| | | | | |

GROUNDWATER CONTOURS - JUNE 2009

SEMI-ANNUAL PROGRESS REPORT 27
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COLUMBIA CITY, INDIANA

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Sheet Number
7 of 7

Drawing Number
4050758
010101 D7

MWH

J:\01_INDUSTRIAL-OTHER\3868-Wayne RR\5-CADD\SAPR 28\Fig 07_7 Cont 07.dwg Aug/24/09

**Figure 8**
**Cumulative Volatile Organic Compounds Removed From Site - Soil and Groundwater Remediation Systems**
**Wayne Reclamation & Recycling**

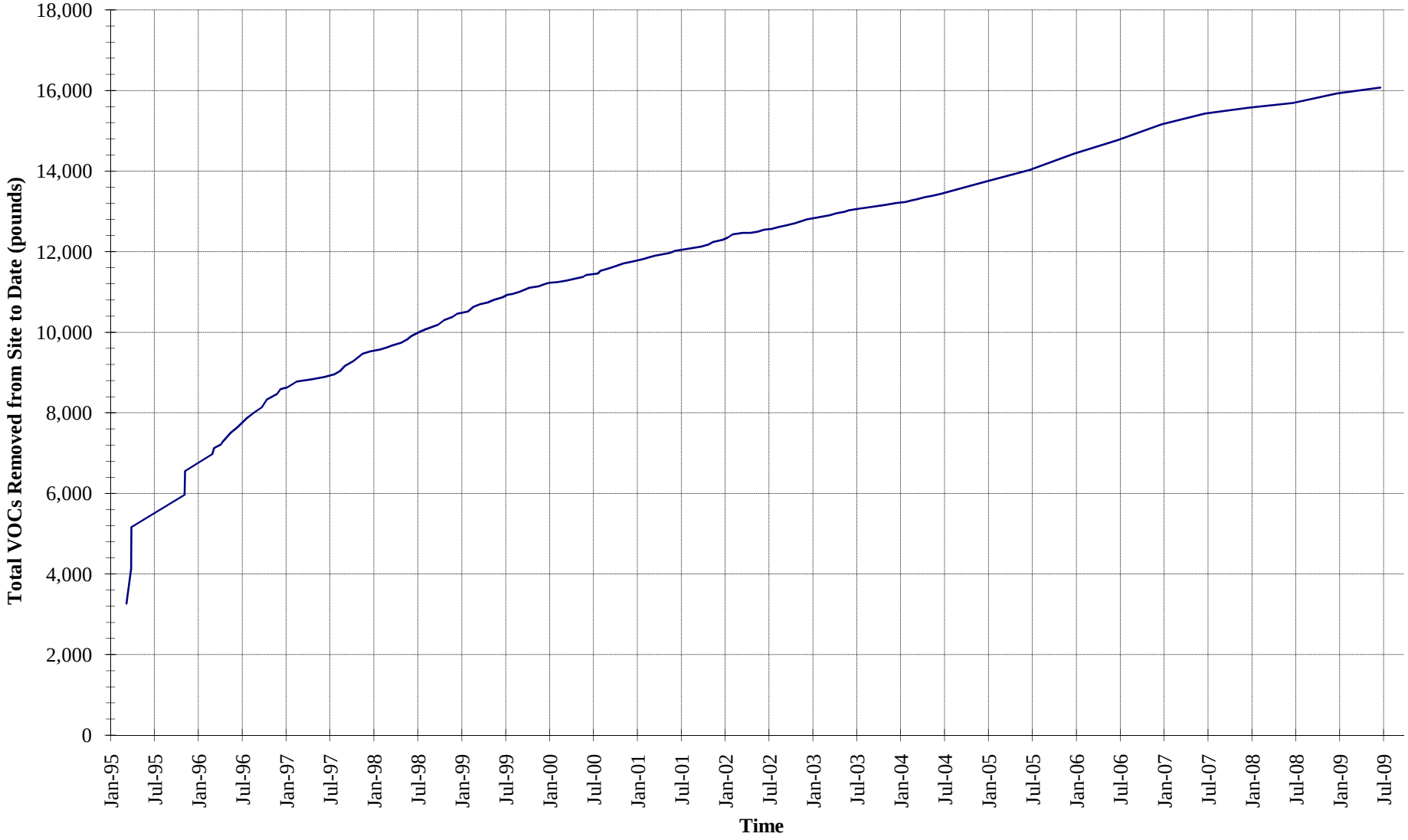
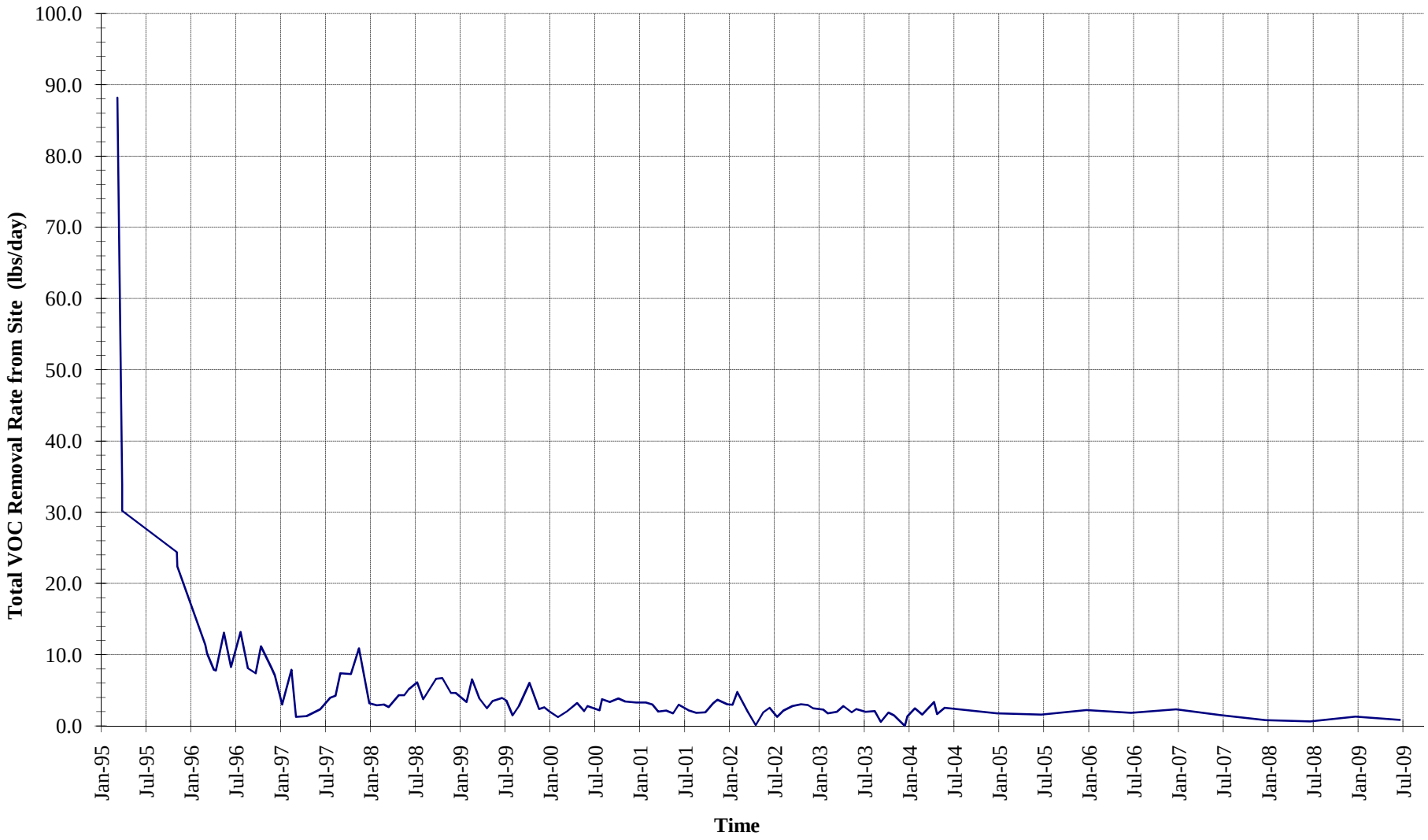


**Figure 9**
**Summary of Site Volatile Organic Compound Removal Rates - Soil and Groundwater Remediation Systems**
**Wayne Reclamation & Recycling**



# APPENDIX A

# LANDFILL SAMPLING DATA, APRIL 2009 SAMPLING EVENT

**BURGESS & NIPLE**

Mr. Jeffrey P. Walker
Outside Operations Manager
City of Columbia City
316 S. Towerview Drive
Columbia City, IN 46725

Re: City of Columbia City
Wayne Reclamation & Recycling Facility
April 2009 Groundwater Sampling Event

May 27, 2009

**Burgess & Niple, Inc.**
5085 Reed Road
Columbus, OH 43220
614 459.2050
Fax 614 451.1385

Dear Mr. Walker:

Burgess & Niple, Inc. (B&N) has completed this report to provide you with additional information that is not included in the formal report submitted to the U.S. Environmental Protection Agency (EPA), as required by the facility's *Operation and Maintenance Sampling and Analysis Plan* (OMSAP) (Geraghty & Miller, Inc., October 1993). B&N completed groundwater sampling and analysis of four monitoring wells located at the Wayne Reclamation and Recycling Facility (WRRF) in the City of Columbia City, Indiana on April 23, 2009. The following sections summarize the results of the most recent sampling event. Figure 1 displays the groundwater monitoring network. Attachment 1 includes the field-sampling sheets and chain-of-custody form completed during the most recent sampling event. Attachment 2 contains the analytical laboratory report submitted by TestAmerica Analytical Testing Corporation (TestAmerica). Time-versus-concentration plots generated from the groundwater quality data are presented in Attachment 3.

## METHODS

Groundwater elevations were measured at each well using an electronic water-level measuring tape. The depth to the bottom of each well was also measured. Measurements were made to the nearest 0.01 foot and recorded on field-sampling sheets. The well stick-up was measured to the nearest 0.1 foot and recorded.

Field-sampling personnel completed a wellhead inspection of each well documenting any evidence of activity near the well, the condition of the protective casing, any insect or rodent intrusions, or other notable conditions. Information from this evaluation is included on the field-sampling sheets included in Attachment 1.

Disposable polyethylene bailers were used to purge each well of a minimum of five well volumes prior to sampling. Field parameters (pH, specific conductance, temperature, and turbidity) were measured and recorded during well purging. Sampling began once at least five well volumes were removed and the field parameters stabilized (within ±10 percent). Purge water was disposed of on the ground away from each well, as specified by the facility's OMSAP.

Groundwater samples were collected from the four monitoring wells (GM-1, GM-2, GM-3, and GM-4). Field personnel filled the sample containers and placed them in a cooler that was chilled with ice to 4 degrees Celsius (°C) or less. One duplicate was collected at GM-4 by splitting each bailer of water between two sets of sample containers. One field blank was collected to evaluate possible cross contamination from the field-sampling equipment. Deionized water was poured into a clean and unused disposable bailer and transferred into the sample containers. The laboratory prepared one trip blank (two 40-milliliter [ml] vials of deionized water) and sent it along with the sample containers. Groundwater samples were delivered to TestAmerica for analysis.

TestAmerica analyzed the groundwater samples from the four monitoring wells, the duplicate sample, and the equipment blank for ammonia (Method 350.1), chloride (Method 9056A), chemical oxygen demand (COD) (Method 410.4), sodium (Method 6010B), and volatile organic compounds (VOCs) (Method 8260B). The trip blank was analyzed for VOCs only.

**RESULTS**

Table 1 includes all historical groundwater quality results reported for the WRRF, including the results of the April 23, 2009 groundwater sampling event. VOCs included in Table 1 are only those parameters historically detected in monitoring wells GM-1, GM-2, GM-3, and GM-4. All other VOCs have been reported below laboratory detection limits with the exception of chloroform was detected in the equipment blank sample at 2.89 micrograms per liter (µg/l) during this monitoring event. The equipment blank sample was collected by pouring distilled water into a clean and unused disposable polyethylene bailer and transferred into the sample containers. The equipment blank sample was collected prior to purging groundwater from GM-3 (see remarks documented on the field-sampling sheet for GM-3 in Attachment 1). GM-3 was purged and sampled with the same bailer as the equipment blank was collected from. The April 2009 chloroform concentration reported for GM-3 is <1.00 µg/l. Furthermore, no concentrations of chloroform were detected in any other sample including the trip blank sample during the April 2009 monitoring event; therefore, no cross contamination has been observed. Chloroform has never been detected in any other groundwater sample collected from GM-1, GM-2, GM-3, or GM-4 since groundwater monitoring began in June 1995. B&N concludes the detected concentration of chloroform for the April 2009 equipment blank sample to be representative of the distilled water quality and that no cross contamination was observed during the April 2009 sampling event.

All but one of the inorganic concentrations reported for GM-1, GM-2, GM-3, and GM-4 during the most recent groundwater sampling event were within the respective range of historical results. The ammonia concentration of 0.886 milligrams per liter (mg/l) is the lowest detected historical concentration for GM-2.

VOC results from GM-1, GM-2, GM-3, and GM-4 for the most recent sampling event are generally consistent with those reported for past sampling events. There were no VOCs reported above the laboratory detection limits in either GM-1 or GM-2 during the April 2009 sampling event. This is consistent with historical results for these two wells. The April 2009 cis-1,2-dichloroethene (cis-1,2-DCE) concentration of 12.6 µg/l is the lowest historical concentration reported for monitoring well GM-3. All other detected VOCs in GM-3 and GM-4 were within the respective range of historical concentrations.

Time-versus-concentration plots were constructed for ammonia, chloride, COD, sodium, and each of the historically detected VOCs. Historical results from each of the monitoring wells are included on each plot for comparative purposes. No increasing trends in inorganic constituents are evident, except for a slight increasing trend for COD in GM-3 from April 2003 through April 2009. Since the year 2000, it appears that each of the detected VOCs in GM-3 and GM-4 have stabilized, or depict a decreasing trend in concentration, with the exception of trichloroethene (TCE) and vinyl chloride in GM-4.

The following comments are made for the organic chemicals of concern (COCs) in wells GM-3 and GM-4 that have been historically detected above U.S. EPA Maximum Contaminant Levels (MCLs):

- GM-3 (cis-1,2-DCE) – Since October 2001, concentrations have shown an overall decreasing trend. The April 2009 concentration of 12.6 µg/l is the lowest historical concentrations detected since monitoring began in June 1995 and is below the primary MCL of 70 µg/l for cis-1,2-DCE.

- GM-3 (vinyl chloride) – concentrations have been reported above the MCL of 2 µg/l for each sampling event since June 1995, with the exception of the January 1996 sampling event which reported a non-detect value of <1.0 µg/l. The historical maximum concentration of 54 µg/l was reported in October 2001. Since then, concentrations of vinyl chloride have indicated an overall decreasing trend with the latest concentration reported at 9.78 µg/l in April 2009.

- GM-4 (cis-1,2-DCE) – concentrations spiked to a maximum of 570 µg/l in June 2001. Since then, concentrations have shown a decreasing trend with latest result of 119 µg/l reported for April 2009, which is above the primary MCL of 70 µg/l.

- GM-4 (1,1,1-trichloroethane [TCA]) – in June 2001 concentrations spiked to 610 µg/l. Since 2001, concentrations appear to show an overall decreasing trend with the latest concentration detected at 192 µg/l which is below the primary MCL of 200 µg/l.

- GM-4 (TCE) – concentrations from the past six semiannual sampling events appear to be trending downward, as concentrations have decreased from 1,080 µg/l in October 2006 to 891 µg/l in April 2009. The TCE concentration continues to be above the MCL of 5 µg/l.

- GM-4 (vinyl chloride) – concentrations indicate an overall increasing trend since October 2005. The April 2009 2008 laboratory result of 26.8 µg/l is the second highest historical concentration reported for this well. The October 2008 concentration of 34.6 µg/l is the historical high value reported for this well. The primary MCL for vinyl chloride is 2 µg/l.

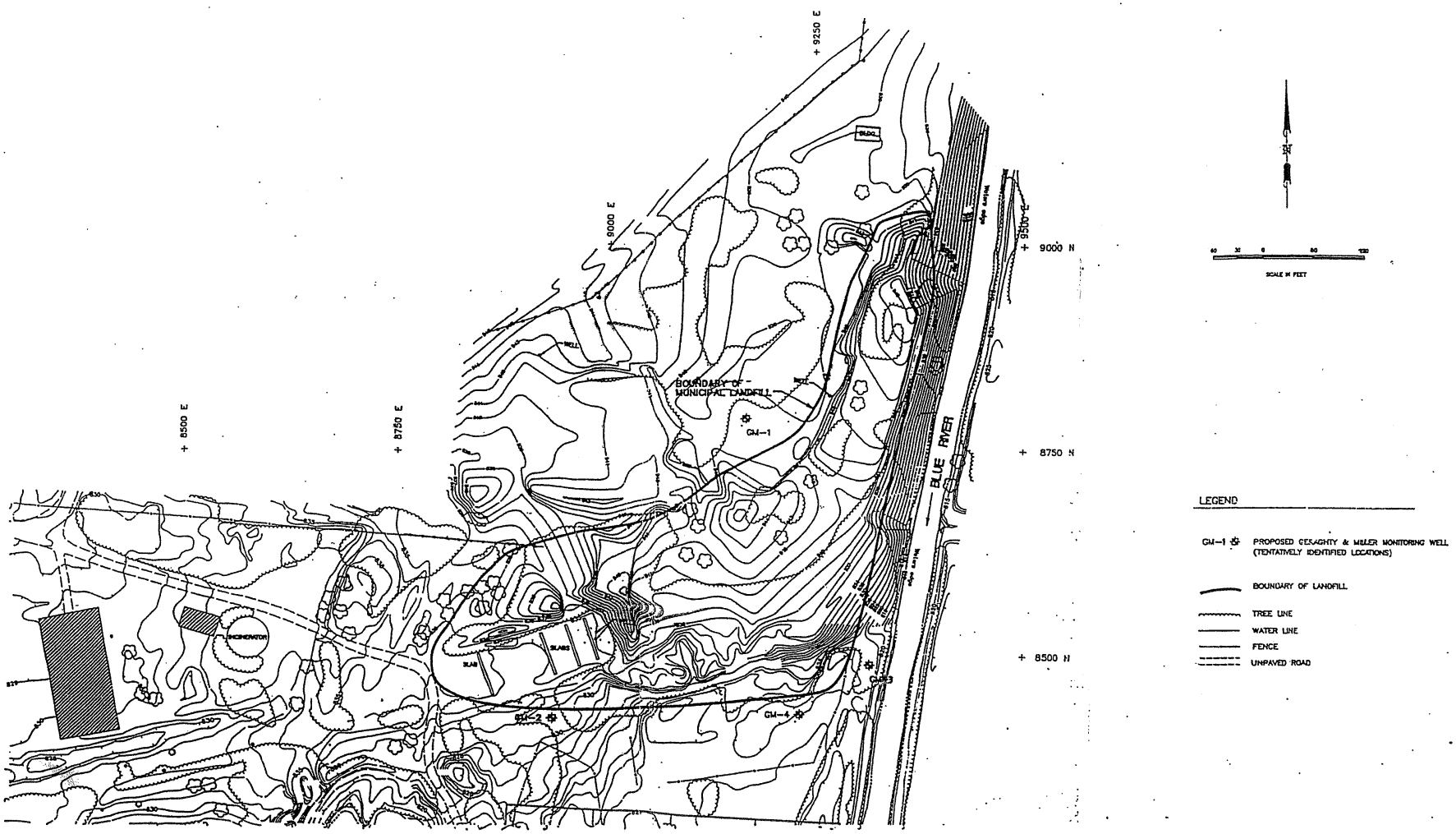
Table 2 includes historical groundwater elevations and other well data recorded at the facility. Groundwater elevation data prior to December 1999 was not available. Groundwater elevations increased between October 2008 and April 2009 from a minimum of 3.31 feet at GM-3 to a maximum of 4.01 feet at GM-2.

If you have any questions or comments, please do not hesitate to call.

Sincerely,

Michael R. Akins
Project Geologist

MRA:cmc
Attachments
copy: Mr. Howard Lowen, Columbia City (w/att)
Mr. Bruce Hamilton, Indiana Dept. of Environmental Management (w/att)
Ms. Diane McCausland, Engineering Management, Inc. (w/att)




SOURCES: BONAR SURVEYORS AND WARZYN ENGINEERING, INC.

GERAGHTY & MILLER, INC.
Environmental Services

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| DRAWING NO.: [illegible] | PLOT SCALE: 1=60 |
| DRAFTED BY: S. [illegible] | DATE: MARCH 8, 1993 |
| CHECKED BY: | DATE: |
| APPROVED BY: | DATE: |
| LAST REVISION BY: S. [illegible] | DATE: OCT. 13, 1993 |

MONITORING WELL LOCATION MAP
POST-CLOSURE LANDFILL MONITORING
WAYNE RECLAMATION AND RECYCLING SITE
COLUMBIA CITY, INDIANA

FIGURE
1

**Table 1**
**Wayne Reclamation and Recycling Facility**
**City of Columbia City**
**Groundwater Monitoring Program**

| Parameter | Units | MCL[1] | GM-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Jun-95 | Jan-96 | Jun-96 | Jan-97 | Jun-97 | Dec-97 | Jun-98 | Jan-99 | Jun-99 | Dec-99 | Jun-00 | Dec-00 | Jun-01 | Oct-01 | Apr-02 | Oct-02 | Apr-03 | Oct-03 | Apr-04 | Oct-04 | Apr-05 | Oct-05 | Apr-06 | Oct-06 | Apr-07 | Oct-07 | Apr-08 | Oct-08 | Apr-09 |
| **Inorganics** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ammonia | mg/l | 30 (HHA) | 0.43 | 0.6 | 0.58 | 0.25 | 0.41 | 0.28 | 1.7 | 0.587 | 0.45 | 0.48 | 1.08 | 1.20 | 1.41 | 1.09 | 1.14 | 1.24 | 0.96 | 0.94 | 1.04 | 0.83 | 0.59 | 0.83 | 0.71 | 0.702 | 0.809 | 0.705 | 0.660 | 0.708 | 0.666 |
| Chloride | mg/l | 250 (S) | 130 | 120 | 80 | 48 | 39 | 35 | 80 | 64 | 31 | 37 | 26 | 23 | 46 | 39 | 44 | 31 | 31 | 37 | 51 | 51 | 43 | 43.6 | 50 | 38.0 | 53.0 | 64.3 | 42.4 | 45.4 | 37.7 |
| Chemical Oxygen Demand (COD) | mg/l | -- | 130 | 55 | 87 | 100 | 39 | 25 | 38 | 74 | 22 | 36 | 27 | 45 | 13 | 29 | 52 | 37 | <5 | 14 | 5 | 31 | 9 | 30 | 24 | 17.6 | <50.0 | 27.2 | 20.8 | <50.0 | <50.0 |
| Sodium | mg/l | -- | 60 | 59 | 54 | 26 | 22 | 19 | 18 | 22.8 | 18 | 15 | 19.2 | 17.5 | 19.0 | 22.9 | 22.2 | 21.5 | 17.6 | 17.1 | 23.1 | 25.5 | 22.3 | 17.7 | 21.3 | 17.6 | 26.2 | 37.9 | 24.5 | 25.4 | 18.4 |
| **Volatile Organic Compounds** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-Butanone (Methyl ethyl ketone) | ug/l | -- | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <50 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <2 | <10 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 |
| 1,1-Dichloroethane | ug/l | -- | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1-Dichloroethene | ug/l | 7 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| cis-1,2-Dichloroethene | ug/l | 70 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| trans-1,2-Dichloroethene | ug/l | 100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,2-Dichloropropane | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,1-Trichloroethane | ug/l | 200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,2-Trichloroethane | ug/l | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Trichloroethene | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Vinyl Chloride | ug/l | 2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH | S.U. | 6.5-8.5 (S) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.90 | 7.58 | 6.94 | 7.49 | 7.55 | 7.11 | 7.17 | 7.40 | 6.72 | 6.91 | 7.24 | 7.14 | 7.31 | 6.84 | 6.76 | 7.42 | 7.34 | 6.98 | 6.85 |
| Specific Conductance | umhos/cm | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 700 | 832 | 784 | 541 | 730 | 605 | 487 | 667 | 431 | 762 | 686 | 614 | 604 | 833 | 640 | 982 | 722 | 761 | 700 | 640 |
| Temperature | °C | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11.1 | 12.9 | 10.2 | 11.9 | 11.3 | 11.3 | 11.7 | 11.7 | 11.5 | 12.0 | 11.8 | 11.7 | 12.4 | 6.7 | 12.8 | 6.4 | 12.5 | 12.4 | 11.2 | 11.7 |
| Turbidity | NTU | 5 (AL) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 111 | 455 | 133 | 182 | 140 | 664 | 55 | 258 | 44 | 134 | 282 | 105 | 113 | 75 | 228 | 86 | 165 | 59 | 156 |

All other VOCs have been historically below laboratory detection limits.
[1] = U.S. EPA Maximum Contaminant Level
(HHA) = U.S. EPA Lifetime Human Health Advisory
(S) = Secondary U.S. EPA MCL
(AL) = U.S. EPA Action Level
Duplicate samples collected at GM-4.
-- = Not Applicable
[e] = MEK contaminated deionized water.

**Table 1 (continued)**
**Wayne Reclamation and Recycling Facility**
**City of Columbia City**
**Groundwater Monitoring Program**

| Parameter | Units | MCL[1] | GM-2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Jun-95 | Jan-96 | Jun-96 | Jan-97 | Jun-97 | Dec-97 | Jun-98 | Jan-99 | Jun-99 | Dec-99 | Jun-00 | Dec-00 | Jun-01 | Oct-01 | Apr-02 | Oct-02 | Apr-03 | Oct-03 | Apr-04 | Oct-04 | Apr-05 | Oct-05 | Apr-06 | Oct-06 | Apr-07 | Oct-07 | Apr-08 | Oct-08 | Apr-09 |
| **Inorganics** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ammonia | mg/l | 30 (HHA) | 2.6 | 2.6 | 2.4 | 1.6 | 3 | 2.6 | 3 | 2.64 | 1.7 | 1.8 | 1.99 | 1.80 | 2.03 | 2.10 | 1.46 | 1.43 | 1.35 | 1.30 | 1.28 | 1.18 | 1.13 | 1.09 | 0.98 | 0.958 | 1.08 | 0.973 | 1.06 | 1.10 | 0.886 |
| Chloride | mg/l | 250 (S) | 18 | 15 | 19 | 16 | 16 | 22 | 19 | 10 | 7 | 12 | 16 | 10 | 12 | 14 | 20 | 14 | 15 | 50 | 11 | 11 | 15 | 20.1 | 13 | 12.0 | 10.0 | 10.2 | 10.9 | 7.93 | 12.2 |
| Chemical Oxygen Demand (COD) | mg/l | -- | 30 | <20 | <20 | <20 | <20 | <20 | 20 | 38 | 15 | <15 | 17 | 8 | <1 | 18 | 26 | 12 | <5 | <5 | 15 | 36 | <5 | 28 | 14 | 10.1 | 100 | 11.1 | 14.5 | <50.0 | <50.0 |
| Sodium | mg/l | -- | 20 | 15 | 17 | 16 | 13 | 19 | 10 | 11.2 | 10.1 | 12.3 | 12.1 | 10.5 | 11.3 | 14.4 | 14.4 | 12.2 | 12.0 | 12.2 | 10.1 | 9.12 | 10.2 | 10.0 | 10.7 | 10.5 | 11.1 | 10.9 | 10.5 | 9.06 | 11.5 |
| **Volatile Organic Compounds** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-Butanone (Methyl ethyl ketone) | ug/l | -- | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <50 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <2 | <10 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 |
| 1,1-Dichloroethane | ug/l | -- | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1-Dichloroethene | ug/l | 7 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| cis-1,2-Dichloroethene | ug/l | 70 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| trans-1,2-Dichloroethene | ug/l | 100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,2-Dichloropropane | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,1-Trichloroethane | ug/l | 200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,2-Trichloroethane | ug/l | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Trichloroethene | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Vinyl Chloride | ug/l | 2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH | S.U. | 6.5-8.5 (S) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.13 | 7.65 | 7.06 | 7.59 | 7.41 | 7.10 | 7.32 | 7.61 | 7.05 | 6.83 | 7.33 | 7.04 | 7.24 | 6.78 | 6.89 | 7.26 | 7.17 | 6.99 | 6.99 |
| Specific Conductance | umhos/cm | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 700 | 818 | 715 | 524 | 936 | 804 | 586 | 826 | 458 | 723 | 667 | 776 | 744 | 863 | 896 | 905 | 756 | 891 | 696 | 716 |
| Temperature | °C | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11.3 | 12.9 | 10.6 | 11.4 | 10.2 | 10.6 | 11.5 | 12.1 | 12.7 | 12.0 | 12.3 | 11.9 | 12.3 | 6.1 | 12.4 | 10.0 | 12.5 | 12.1 | 11.1 | 10.9 |
| Turbidity | NTU | 5 (AL) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9 | 13 | 22 | 10.5 | 7.44 | 16.0 | 13 | 10 | 12 | 11 | 11 | 16 | 15 | 13 | 12 | 13 | 9.0 | 20 | 1.0 |

All other VOCs have been historically below laboratory detection lim
[1] = U.S. EPA Maximum Contaminant Level
(HHA) = U.S. EPA Lifetime Human Health Advisory
(S) = Secondary U.S. EPA MCL
(AL) = U.S. EPA Action Level
Duplicate samples collected at GM-4.
-- = Not Applicable
* = MEK contaminated deionized water.

**Table 1 (continued)**
**Wayne Reclamation and Recycling Facility**
**City of Columbia City**
**Groundwater Monitoring Program**

| Parameter | Units | MCL[1] | GM-3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Jun-95 | Jan-96 | Jun-96 | Jan-97 | Jun-97 | Dec-97 | Jun-98 | Jan-99 | Jun-99 | Dec-99 | Jun-00 | Dec-00 | Jun-01 | Oct-01 | Apr-02 | Oct-02 | Apr-03 | Oct-03 | Apr-04 | Oct-04 | Apr-05 | Oct-05 | Apr-06 | Oct-06 | Apr-07 | Oct-07 | Apr-08 | Oct-08 | Apr-09 |
| **Inorganics** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ammonia | mg/l | 30 (HHA) | 6 | 4.9 | 3.2 | 0.98 | 1.4 | 1 | 1.4 | 1.15 | 0.6 | 0.8 | 0.59 | 0.79 | 0.52 | 0.62 | 0.51 | 0.76 | 0.52 | 0.55 | 0.45 | 0.50 | 0.42 | 0.46 | 0.46 | 0.433 | 0.393 | 0.408 | 0.759 | 0.439 | 0.356 |
| Chloride | mg/l | 250 (S) | 23 | 14 | 25 | 32 | 20 | 40 | 25 | 42 | 24 | 20 | 29 | 44 | 22 | 28 | 24 | 32 | 67 | 27 | 42 | 21 | 24 | 51.7 | 35 | 27.0 | 25.0 | 26.2 | 21.7 | 21.4 | 38.5 |
| Chemical Oxygen Demand (COD) | mg/l | -- | 120 | 80 | 38 | 33 | <20 | <20 | 25 | 24 | 22 | <15 | 28 | 10 | 14 | 18 | 22 | 15 | 5 | 20 | 33 | 43 | 37 | 46 | 109 | 33.0 | <50.0 | 50 | 49.3 | 59.6 | 74.8 |
| Sodium | mg/l | -- | 26 | 14 | 14 | 17 | 11 | 16 | 10 | 19.2 | 16.4 | 16.5 | 17.7 | 21.5 | 15.8 | 15.0 | 12.2 | 20.4 | 36.2 | 19.7 | 15.7 | 17.2 | 12.5 | 21.8 | 22.3 | 19.9 | 17.2 | 17.8 | 19.4 | 14.4 | 25.5 |
| **Volatile Organic Compounds** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-Butanone (Methyl ethyl ketone) | ug/l | -- | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <50 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <2 | <10 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 |
| 1,1-Dichloroethane | ug/l | -- | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1-Dichloroethene | ug/l | 7 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| cis-1,2-Dichloroethene | ug/l | 70 | 84 | 33 | 26 | 17 | 17 | 36 | 94 | 51 | 85.6 | 60.7 | 110 | 82 | 61 | 150 | 85 | 100 | 52 | 72 | 59 | 17 | 57 | 55 | 34.4 | 41.1 | 27.0 | 32.3 | 15.4 | 22.3 | 12.6 |
| trans-1,2-Dichloroethene | ug/l | 100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.6 | 0.9 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | 1 | <1.0 | 2 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,2-Dichloropropane | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,1-Trichloroethane | ug/l | 200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,2-Trichloroethane | ug/l | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Trichloroethene | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Vinyl Chloride | ug/l | 2 | 10 | <1.0 | 18 | 42 | 33 | 45 | 32 | 22.6 | 22.3 | 16.6 | 26 | 28 | 24 | 54 | 33 | 41 | 19 | 40 | 27 | 31 | 17 | 20 | 12.6 | 32.2 | 19.9 | 26.8 | 14.4 | 22.7 | 9.78 |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH | S.U. | 6.5-8.5 (S) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.74 | 7.88 | 7.08 | 7.99 | 6.89 | 7.50 | 7.99 | 8.03 | 7.86 | 7.19 | 7.72 | 7.51 | 7.53 | 6.96 | 7.38 | 7.79 | 7.87 | 7.41 | 7.24 |
| Specific Conductance | umhos/cm | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 650 | 615 | 767 | 382 | 635 | 410 | 445 | 739 | 356 | 560 | 579 | 416 | 602 | 548 | 636 | 612 | 568 | 504 | 578 | 528 |
| Temperature | °C | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.9 | 13.4 | 12 | 8.5 | 14.6 | 8.6 | 16.7 | 6.7 | 14.3 | 8.4 | 15.7 | 7.7 | 17.7 | 3.4 | 12.7 | 6.5 | 17.4 | 8.3 | 15.0 | 7.5 |
| Turbidity | NTU | 5 (AL) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 45 | 34 | 13 | 30.8 | 29.2 | 28.0 | 16 | 140 | 45 | 299 | 555 | 334 | >1,000 | 726 | 1,000 | 907 | 1,000 | 1,000 | 686 |

All other VOCs have been historically below laboratory detection lim
[1] = U.S. EPA Maximum Contaminant Level
(HHA) = U.S. EPA Lifetime Human Health Advisory
(S) = Secondary U.S. EPA MCL
(AL) = U.S. EPA Action Level
Duplicate samples collected at GM-4.
-- = Not Applicable
* = MEK contaminated deionized water.

**Table 1 (continued)**
**Wayne Reclamation and Recycling Facility**
**City of Columbia City**
**Groundwater Monitoring Program**

| Parameter | Units | MCL[1] | GM-4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Jun-95 | Jan-96 | Jun-96 | Jan-97 | Jun-97 | Dec-97 | Jun-98 | Jan-99 | Jun-99 | Dec-99 | Jun-00 | Dec-00 | Jun-01 | Oct-01 | Apr-02 | Oct-02 | Apr-03 | Oct-03 | Apr-04 | Oct-04 | Apr-05 | Oct-05 | Apr-06 | Oct-06 | Apr-07 | Oct-07 | Apr-08 | Oct-08 | Apr-09 |
| **Inorganics** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ammonia | mg/l | 30 (HHA) | 0.37 | 0.33 | 0.34 | 0.28 | 0.13 | 0.37 | 3.1 | 0.697 | 0.29 | 0.24 | 0.32 | 0.46 | 0.36 | 0.33 | 0.29 | 0.25 | 0.31 | 0.23 | 0.22 | 0.19 | 0.30 | 0.35 | 0.37 | 0.546 | 0.554 | 0.277 | 0.262 | 0.208 | 0.279 |
| Chloride | mg/l | 250 (S) | 23 | 41 | 12 | 8.3 | 11 | 11 | 12 | 16 | 4.5 | 19 | 7 | 8 | 5 | 6 | 9 | 4 | 7 | 6 | 5 | 5 | 4 | 4.2 | <5 | 14.0 | 5.00 | 2.22 | 2.46 | 2.62 | 2.85 |
| Chemical Oxygen Demand (COD) | mg/l | -- | 220 | 65 | 47 | 55 | 20 | <20 | 20 | 20 | 20 | <15 | 13 | 2 | 6 | 28 | 13 | 8 | <5 | <5 | 10 | 22 | <5 | 39 | 24 | 18.6 | <50.0 | 18 | 13.6 | <50.0 | <50.0 |
| Sodium | mg/l | -- | 31 | 41 | 22 | 25 | 18 | 26 | 25 | 40 | 21 | 12 | 17.6 | 27.8 | 14.6 | 15.1 | 10.2 | 11.6 | 11.0 | 7.86 | 8.98 | 8.43 | 7.86 | 16.0 | 13.7 | 21.2 | 9.16 | 8.9 | 7.12 | 7.18 | 7.43 |
| **Volatile Organic Compounds** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-Butanone (Methyl ethyl ketone) | ug/l | -- | <10 | 150 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <33.3 | <50 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <2 | <10 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 |
| 1,1-Dichloroethane | ug/l | -- | <1.0 | <1.0 | <1.0 | 10 | 12 | 13 | 11 | 16 | 14 | 13 | 19 | 18 | 21 | 25 | 17 | 20 | 26 | 20 | 15 | 14 | 14 | 21 | 20.6 | 23.8 | 17.2 | 18.5 | 14.5 | 17.0 | 15.6 |
| 1,1-Dichloroethene | ug/l | 7 | <0.5 | <0.5 | <1.0 | <1.0 | <0.5 | <0.5 | 3.2 | 5.2 | 5 | 3.7 | <5 | 4.2 | 7.0 | 7.1 | 6.0 | 5.1 | 6.2 | 4.9 | 3.8 | 6.1 | <2 | 4.0 | 4.2 | 4.92 | 4.22 | 3.48 | 3.03 | 3.77 | 2.99 |
| cis-1,2-Dichloroethene | ug/l | 70 | 130 | 140 | 190 | 260 | 250 | 320 | 250 | 323 | 243 | 250 | 190 | 270 | 570 | 250 | 230 | 180 | 190 | 98 | 110 | 100 | 110 | 110 | 173 | 228 | 141 | 143 | 120 | 117 | 122 |
| trans-1,2-Dichloroethene | ug/l | 100 | <1.0 | <1.0 | <1.0 | 12 | 14 | 16 | 13 | 16.3 | 13 | 14 | 13 | 14 | 18 | 20 | 14 | 14 | 15 | 11 | 8 | 8 | 6.9 | 11 | 11.6 | 14.9 | 12.0 | 9.44 | 8.64 | 9.72 | 8.45 |
| 1,2-Dichloropropane | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <3.3 | <5.0 | <5.0 | 6 | <1.0 | <1.0 | <1.0 | <1 | 4 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,1-Trichloroethane | ug/l | 200 | 180 | <1.0 | 200 | 140 | 140 | 210 | 180 | 144 | 193 | 143 | 170 | 210 | 610 | 260 | 330 | 380 | 260 | 94 | 180 | 180 | 180 | 180 | 229 | 248 | 216 | 220 | 188 | 191 | 169 |
| 1,1,2-Trichloroethane | ug/l | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.7 | <0.5 | <0.5 | <3.3 | <5 | <0.5 | 0.8 | 0.9 | <0.5 | 0.8 | 0.8 | 0.7 | 0.6 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Trichloroethene | ug/l | 5 | 410 | 380 | 530 | 280 | 430 | 490 | 500 | 462 | 556 | 435 | 440 | 640 | 1,900 | 860 | 870 | 1,300 | 840 | 400 | 630 | 740 | 730 | 830 | 980 | 1,080 | 953 | 939 | 851 | 844 | 891 |
| Vinyl Chloride | ug/l | 2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.8 | 5.2 | 3.7 | 4.9 | 4 | 8 | 6 | 7 | 5 | 2 | 4 | 2 | 3 | 3 | 3.6 | <1 | 11.2 | 11.0 | 14.3 | 13.6 | 19.0 | 34.6 | 26.8 |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH | S.U. | 6.5-8.5 (S) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.34 | 7.02 | 6.99 | 7.51 | 7.23 | 7.23 | 7.35 | 7.70 | 7.29 | 6.92 | 7.45 | 7.10 | 7.24 | 6.75 | 7.07 | 7.36 | 7.29 | 7.13 | 7.18 |
| Specific Conductance | umhos/cm | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 690 | 964 | 1,141 | 553 | 880 | 660 | 471 | 729 | 413 | 732 | 619 | 618 | 827 | 922 | 1,199 | 964 | 794 | 720 | 664 | 584 |
| Temperature | °C | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15.2 | 12.9 | 11.9 | 10.8 | 12.1 | 9.9 | 13.1 | 11.1 | 12.4 | 10.8 | 13.3 | 11.3 | 13.7 | 5.4 | 10.7 | 9.5 | 13.7 | 11.3 | 12.0 | 10.3 |
| Turbidity | NTU | 5 (AL) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 13 | 21 | 29 | 22.9 | 17.4 | 37.0 | 25 | 51 | 30 | 56 | 67 | 118 | 116 | 58 | 133 | 157 | 47 | 81 | 39 |

All other VOCs have been historically below laboratory detection lim
[1] = U.S. EPA Maximum Contaminant Level
(HHA) = U.S. EPA Lifetime Human Health Advisory
(S) = Secondary U.S. EPA MCL
(AL) = U.S. EPA Action Level
Duplicate samples collected at GM-4.
-- = Not Applicable
* = MEK contaminated deionized water.

**Table 1 (continued)**
**Wayne Reclamation and Recycling Facility**
**City of Columbia City**
**Groundwater Monitoring Program**

| Parameter | Units | MCL[1] | Duplicate (GM-4) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dec-99 | Jun-00 | Dec-00 | Jun-01 | Oct-01 | Apr-02 | Oct-02 | Apr-03 | Oct-03 | Apr-04 | Oct-04 | Apr-05 | Oct-05 | Apr-06 | Oct-06 | Apr-07 | Oct-07 | Apr-08 | Oct-08 | Apr-09 |
| **Inorganics** | | | | | | | | | | | | | | | | | | | | | | |
| Ammonia | mg/l | 30 (HHA) | 0.25 | 0.31 | 0.40 | 0.34 | 0.34 | 0.29 | 0.26 | 0.36 | 0.26 | 0.22 | 0.20 | 0.27 | 0.36 | 0.38 | 0.542 | 0.444 | 0.274 | 0.293 | 0.267 | 0.295 |
| Chloride | mg/l | 250 (S) | 19 | 7 | 7 | 5 | 8 | 8 | 4 | 7 | 5 | 5 | 5 | 4 | 4.9 | <5 | 7.00 | <5.00 | 2.31 | 2.25 | 2.43 | 2.88 |
| Chemical Oxygen Demand (COD) | mg/l | -- | <15 | 24 | 4 | 8 | 22 | 16 | 11 | <5 | <5 | 10 | 26 | 7 | 26 | 20 | 17.6 | <50.0 | 21.2 | 11.1 | <50.0 | 61.5 |
| Sodium | mg/l | -- | 12.8 | 21.5 | 28.1 | 14.0 | 15.8 | 10.5 | 7.32 | 11.1 | 7.80 | 8.76 | 8.67 | 7.86 | 16.9 | 14.6 | 21.5 | 8.70 | 8.8 | 7.23 | 7.02 | 7.33 |
| **Volatile Organic Compounds** | | | | | | | | | | | | | | | | | | | | | | |
| 2-Butanone (Methyl ethyl ketone) | ug/l | -- | <33.3 | <50 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <2 | <10 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 |
| 1,1-Dichloroethane | ug/l | -- | 15 | 19 | 19 | 21 | 24 | 18 | 27 | 28 | 20 | 14 | 14 | 15 | 20 | 22.4 | 24.2 | 16.9 | 20.8 | 14.3 | 18.2 | 15.5 |
| 1,1-Dichloroethene | ug/l | 7 | 4.5 | <5 | 4.4 | 6.2 | 6.9 | 6.6 | 5.1 | 6.2 | 5.0 | 3.7 | 6.1 | 72.0 | 3.7 | 4.4 | 5.31 | 4.06 | 4.12 | 3.04 | 3.66 | 2.92 |
| cis-1,2-Dichloroethene | ug/l | 70 | 246 | 190 | 290 | 540 | 180 | 280 | 260 | 210 | 110 | 110 | 110 | 100 | 110 | 175 | 212 | 142 | 139 | 115 | 121 | 119 |
| trans-1,2-Dichloroethene | ug/l | 100 | 13 | 13 | 14 | 17 | 20 | 15 | 15 | 15 | 11 | 8 | 8 | 7.7 | 10.0 | 12.3 | 15.5 | 11.5 | 10.9 | 8.47 | 10.4 | 8.40 |
| 1,2-Dichloropropane | ug/l | 5 | <3.3 | <5.0 | <5.0 | 6 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,1-Trichloroethane | ug/l | 200 | 143 | 170 | 230 | 580 | 180 | 410 | 410 | 270 | 99 | 170 | 190 | 170 | 180 | 237 | 249 | 205 | 231 | 187 | 201 | 192 |
| 1,1,2-Trichloroethane | ug/l | 5 | <3.3 | <5 | <0.5 | 0.8 | 0.9 | <0.5 | 0.9 | 0.8 | 0.6 | 0.5 | <0.5 | <2.0 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Trichloroethene | ug/l | 5 | 434 | 440 | 650 | 1,800 | 610 | 840 | 1,400 | 820 | 440 | 620 | 780 | 710 | 860 | 1,030 | 1,070 | 884 | 971 | 833 | 926 | 1,000 |
| Vinyl Chloride | ug/l | 2 | 4.3 | 4 | 9 | 5 | 6 | 5 | 2 | 4 | 2 | 2 | 3 | 4.2 | <1 | 12.1 | 11.8 | 13.8 | 16.8 | 18.9 | 33.7 | 26.3 |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | |
| pH | S.U. | 6.5-8.5 (S) | -- | 7.34 | 7.02 | 6.99 | 7.51 | 7.23 | 7.23 | 7.35 | 7.70 | 7.29 | 6.92 | 7.45 | 7.10 | 7.24 | 6.75 | 7.07 | 7.36 | 7.29 | 7.13 | 7.18 |
| Specific Conductance | umhos/cm | -- | 690 | 964 | 1,141 | 553 | 880 | 660 | 471 | 729 | 413 | 732 | 619 | 618 | 827 | 922 | 1,199 | 964 | 794 | 720 | 664 | 584 |
| Temperature | °C | -- | 15.2 | 12.9 | 11.9 | 10.8 | 12.1 | 9.9 | 13.1 | 11.1 | 12.4 | 10.8 | 13.3 | 11.3 | 13.7 | 5.4 | 10.7 | 9.5 | 13.7 | 11.3 | 12.0 | 10.3 |
| Turbidity | NTU | 5 (AL) | -- | 13 | 21 | 29 | 22.9 | 17.4 | 37.0 | 25 | 51 | 30 | 56 | 67 | 118 | 116 | 58 | 133 | 157 | 47 | 81 | 39 |

All other VOCs have been historically below laboratory detection lim
[1] = U.S. EPA Maximum Contaminant Level
(HHA) = U.S. EPA Lifetime Human Health Advisory
(S) = Secondary U.S. EPA MCL
($AL_2$) = U.S. EPA Action Level
Duplicate samples collected at GM-4.
-- = Not Applicable
* = MEK contaminated deionized water.

**Table 1 (continued)**
**Wayne Reclamation and Recycling Facility**
**City of Columbia City**
**Groundwater Monitoring Program**

| Parameter | Units | MCL[1] | Field Blank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Jun-95 | Jan-96 | Jun-96 | Jan-97 | Jun-97 | Dec-97 | Jun-98 | Jan-99 | Jun-99 | Dec-99 | Jun-00 | Dec-00 | Jun-01 | Oct-01 | Apr-02 | Oct-02 | Apr-03 | Oct-03 | Apr-04 | Oct-04 | Apr-05 | Oct-05 | Apr-06 | Oct-06 | Apr-07 | Oct-07 | Apr-08 | Oct-08 | Apr-09 |
| **Inorganics** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ammonia | mg/l | 30 (HHA) | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | 0.22 | <0.010 | <0.010 | 0.54 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.0500 | <0.0500 | 0.0910 | <0.05 | <0.05 |
| Chloride | mg/l | 250 (S) | <1.0 | <1.0 | <1.0 | <1.0 | 1.8 | <1.0 | <1.0 | <1.0 | <1.0 | 19 | <1.0 | <1.0 | <1.0 | 1 | <1 | 1 | 2 | <1.0 | <1.0 | <1 | <1 | <1 | <5 | <5 | <5.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Chemical Oxygen Demand (COD) | mg/l | -- | <20 | <20 | <20 | <20 | <20 | <20 | 115 | 33 | <15 | <15 | 4 | <1.0 | <1.0 | 3 | <5 | <5 | <5 | <5 | 7 | 39 | <5 | <5 | <10 | <10 | <50.0 | <10.0 | <10.0 | <50.0 | <50.0 |
| Sodium | mg/l | -- | <0.50 | <0.50 | <0.50 | <0.50 | 14 | <0.50 | 76 | <0.20 | <0.20 | 94.2 | <0.10 | 0.28 | 0.33 | 0.20 | 0.403 | 0.18 | 0.442 | 0.10 | <0.10 | <0.10 | <0.10 | 0.11 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| **Volatile Organic Compounds** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-Butanone (Methyl ethyl ketone) | ug/l | -- | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <50 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <2 | <10 | <12.5 | <12.5 | 612 * | <12.5 | <12.5 | <12.5 | <12.5 |
| 1,1-Dichloroethane | ug/l | -- | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1-Dichloroethene | ug/l | 7 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| cis-1,2-Dichloroethene | ug/l | 70 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| trans-1,2-Dichloroethene | ug/l | 100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,2-Dichloropropane | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,1-Trichloroethane | ug/l | 200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,2-Trichloroethane | ug/l | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Trichloroethene | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | 1 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Vinyl Chloride | ug/l | 2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH | S.U. | 6.5-8.5 (S) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Specific Conductance | umhos/cm | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Temperature | °C | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Turbidity | NTU | 5 (AL) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

All other VOCs have been historically below laboratory detection lim
[1] = U.S. EPA Maximum Contaminant Level
(HHA) = U.S. EPA Lifetime Human Health Advisory
(S) = Secondary U.S. EPA MCL
(AL) = U.S. EPA Action Level
Duplicate samples collected at GM-4.
-- = Not Applicable
* = MEK contaminated deionized water.

**Table 1 (continued)**
**Wayne Reclamation and Recycling Facility**
**City of Columbia City**
**Groundwater Monitoring Program**

| Parameter | Units | MCL[1] | Trip Blank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Jun-95 | Jan-96 | Jun-96 | Jan-97 | Jun-97 | Dec-97 | Jun-98 | Jan-99 | Jun-99 | Dec-99 | Jun-00 | Dec-00 | Jun-01 | Oct-01 | Apr-02 | Oct-02 | Apr-03 | Oct-03 | Apr-04 | Oct-04 | Apr-05 | Oct-05 | Apr-06 | Oct-06 | Apr-07 | Oct-07 | Apr-08 | Oct-08 | Apr-09 |
| **Inorganics** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ammonia | mg/l | 30 (HHA) | <0.030 | <0.030 | <0.030 | <0.030 | -- | -- | <0.010 | <0.010 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloride | mg/l | 250 (S) | <1.0 | <1.0 | <1.0 | <1.0 | -- | -- | <1.0 | <1.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chemical Oxygen Demand (COD) | mg/l | -- | <20 | <20 | <20 | <20 | -- | -- | <5 | <5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sodium | mg/l | -- | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | <0.20 | <0.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Volatile Organic Compounds** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-Butanone (Methyl ethyl ketone) | ug/l | -- | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <50 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <2 | <10 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 |
| 1,1-Dichloroethane | ug/l | -- | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1-Dichloroethene | ug/l | 7 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| cis-1,2-Dichloroethene | ug/l | 70 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| trans-1,2-Dichloroethene | ug/l | 100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,2-Dichloropropane | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,1-Trichloroethane | ug/l | 200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| 1,1,2-Trichloroethane | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 | <0.5 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Trichloroethene | ug/l | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| Vinyl Chloride | ug/l | 2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <0.5 | <0.5 | <0.5 | <1.0 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1 | <1 | <1 | <1 | <2 | <1 | <1.0 | <1.0 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH | S.U. | 6.5-8.5 (S) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Specific Conductance | umhos/cm | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Temperature | °C | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Turbidity | NTU | 5 (AL) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

All other VOCs have been historically below laboratory detection lim
[1] = U.S. EPA Maximum Contaminant Level
(HHA) = U.S. EPA Lifetime Human Health Advisory
(S) = Secondary U.S. EPA MCL
(AL) = U.S. EPA Action Level
Duplicate samples collected at GM-4.
-- = Not Applicable
* = MEK contaminated deionized water.

**Table 2**
**City of Columbia City, Indiana**
**Wayne Reclamation & recycling Facility**
**Groundwater Elevations & Well Data**

| Well No. | TOC Elevation (feet amsl) | Depth to Water (feet BTOC) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12/13/99 | 6/29/00 | 12/5/00 | 6/4/01 | 10/25/01 | 4/22/02 | 10/15/02 | 4/18/03 | 10/17/03 | 4/23/04 | 10/22/04 | 4/15/05 | 10/14/05 | 4/25/06 | 10/13/06 | 4/12/07 | 10/12/07 | 4/18/08 | 10/17/08 | 4/23/09 |
| GM-1 | 841.03 | 31.26 | 30.19 | 31.61 | 30.31 | 29.54 | 29.24 | 31.64 | 31.51 | 30.22 | 30.68 | 31.07 | 29.84 | 31.70 | 31.04 | 30.66 | 29.03 | 31.20 | 28.01 | 31.29 | 27.63 |
| GM-2 | 833.24 | 23.65 | 22.08 | 23.60 | 22.18 | 21.45 | 21.12 | 23.75 | 23.32 | 22.20 | 22.69 | 23.21 | 21.67 | 24.05 | 23.08 | 22.76 | 21.05 | 23.23 | 19.77 | 23.43 | 19.42 |
| GM-3 | 822.86 | 11.74 | 10.69 | 12.45 | 11.73 | 8.46 | 10.51 | 12.40 | 12.08 | 11.16 | 11.95 | 12.37 | 11.79 | 12.97 | 12.42 | 11.67 | 10.28 | 12.61 | 10.21 | 12.72 | 9.41 |
| GM-4 | 827.37 | 16.54 | 15.33 | 17.18 | 16.39 | 13.51 | 15.17 | 17.21 | 16.79 | 15.78 | 16.59 | 17.14 | 16.56 | 17.99 | 17.30 | 16.32 | 15.16 | 17.48 | 14.76 | 17.63 | 13.97 |
| MW-4S | 842.94 | -- | -- | 33.43 | 32.03 | 31.52 | 30.92 | 33.55 | 33.17 | 32.02 | 32.42 | 32.90 | 31.48 | 33.76 | 32.80 | 32.49 | 30.89 | 32.95 | 29.51 | 33.21 | 29.27 |

| Well No. | TOC Elevation (feet amsl) | Groundwater Elevation (feet amsl) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12/13/99 | 6/29/00 | 12/5/00 | 6/4/01 | 10/25/01 | 4/22/02 | 10/15/02 | 4/18/03 | 10/17/03 | 4/23/04 | 10/22/04 | 4/15/05 | 10/14/05 | 4/25/06 | 10/13/06 | 4/12/07 | 10/12/07 | 4/18/08 | 10/17/08 | 4/23/09 |
| GM-1 | 841.03 | 809.77 | 810.84 | 809.42 | 810.72 | 811.49 | 811.79 | 809.39 | 809.52 | 810.81 | 810.35 | 809.96 | 811.19 | 809.33 | 809.99 | 810.37 | 812.00 | 809.83 | 813.02 | 809.74 | 813.40 |
| GM-2 | 833.24 | 809.59 | 811.16 | 809.64 | 811.06 | 811.79 | 812.12 | 809.49 | 809.92 | 811.04 | 810.55 | 810.03 | 811.57 | 809.19 | 810.16 | 810.48 | 812.19 | 810.01 | 813.47 | 809.81 | 813.82 |
| GM-3 | 822.86 | 811.12 | 812.17 | 810.41 | 811.13 | 814.40 | 812.35 | 810.46 | 810.78 | 811.70 | 810.91 | 810.49 | 811.07 | 809.89 | 810.44 | 811.19 | 812.58 | 810.25 | 812.65 | 810.14 | 813.45 |
| GM-4 | 827.37 | 810.83 | 812.04 | 810.19 | 810.98 | 813.86 | 812.20 | 810.16 | 810.58 | 811.59 | 810.78 | 810.23 | 810.81 | 809.38 | 810.07 | 811.05 | 812.21 | 809.89 | 812.61 | 809.74 | 813.40 |
| MW-4S | 842.94 | -- | -- | 809.51 | 810.91 | 811.42 | 812.02 | 809.39 | 809.77 | 810.92 | 810.52 | 810.04 | 811.46 | 809.18 | 810.14 | 810.45 | 812.05 | 809.99 | 813.43 | 809.73 | 813.67 |

| Well No. | TOC Elevation (feet amsl) | Well Stick-Up (feet) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12/13/1999 | 6/29/2000 | 12/5/2000 | 6/4/2001 | 10/25/2001 | 4/22/2002 | 10/15/2002 | 4/18/2003 | 10/17/2003 | 4/23/2004 | 10/22/2004 | 4/15/2005 | 10/14/2005 | 4/25/2006 | 10/13/2006 | 4/12/07 | 10/12/07 | 4/18/08 | 10/17/08 | 4/23/09 |
| GM-1 | 841.03 | 2.1 | -- | 1.9 | 1.9 | 2.1 | 1.8 | 2.1 | 1.8 | 1.8 | 1.8 | 2.0 | 2.0 | 2.1 | 2.0 | 2.1 | 2.0 | 2.0 | 2.0 | 2.0 | 2.1 |
| GM-2 | 833.24 | 2.5 | -- | 2.2 | 2.2 | 2.5 | 2.2 | 2.5 | 2.2 | 2.2 | 2.2 | 2.4 | 2.5 | 2.5 | 2.4 | 2.5 | 2.4 | 2.5 | 2.4 | 2.4 | 2.5 |
| GM-3 | 822.86 | 2.2 | -- | 2.0 | 2.0 | 2.3 | 1.9 | 2.3 | 1.9 | 2.0 | 2.0 | 2.2 | 2.2 | 2.2 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| GM-4 | 827.37 | 3.3 | -- | 2.6 | 2.6 | 3.0 | 2.5 | 3.0 | 2.6 | 2.7 | 2.6 | 2.9 | 2.9 | 2.9 | 2.9 | 3.4 | 3.0 | 2.9 | 2.9 | 2.9 | 2.9 |
| MW-4S | 842.94 | -- | -- | -- | -- | 3.0 | 2.6 | -- | -- | -- | 1.5 | 2.8 | 2.7 | 2.8 | 2.7 | 2.7 | 2.7 | 2.6 | 2.8 | 2.8 | 3.0 |

| Well No. | TOC Elevation (feet amsl) | Depth-to-Bottom (feet BTOC) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12/13/1999 | 6/29/2000 | 12/5/2000 | 6/4/2001 | 10/25/2001 | 4/22/2002 | 10/15/2002 | 4/18/2003 | 10/17/2003 | 4/23/2004 | 10/22/2004 | 4/15/2005 | 10/14/2005 | 4/25/2006 | 10/13/2006 | 4/12/07 | 10/12/07 | 4/18/08 | 10/17/08 | 4/23/09 |
| GM-1 | 841.03 | 35.10 | 34.84 | 34.84 | 34.84 | 34.86 | 34.81 | 34.81 | 34.91 | 35.05 | 34.96 | 34.97 | 34.97 | 35.00 | 35.02 | 35.01 | 34.99 | 34.98 | 35.00 | 35.00 | 35.03 |
| GM-2 | 833.24 | 39.08 | 38.87 | 38.86 | 38.86 | 38.88 | 38.83 | 38.83 | 38.80 | 38.85 | 38.82 | 38.82 | 38.82 | 38.85 | 38.81 | 38.82 | 38.81 | 38.83 | 38.83 | 38.84 | 38.83 |
| GM-3 | 822.86 | 27.95 | 27.72 | 27.75 | 27.75 | 27.74 | 27.71 | 27.71 | 27.68 | 27.72 | 27.68 | 27.68 | 27.68 | 27.68 | 27.65 | 27.66 | 27.65 | 27.67 | 27.67 | 27.61 | 27.65 |
| GM-4 | 827.37 | 28.17 | 27.93 | 27.95 | 27.95 | 27.95 | 27.91 | 27.91 | 27.89 | 27.92 | 27.90 | 27.90 | 27.90 | 27.90 | 27.88 | 27.90 | 27.88 | 27.90 | 27.90 | 27.90 | 27.89 |
| MW-4S | 842.94 | -- | -- | 39.74 | 39.74 | 40.93 | 40.88 | -- | -- | -- | 40.85 | 40.85 | 40.85 | 40.88 | 40.84 | 40.85 | 40.83 | 40.86 | 40.85 | 40.86 | 40.85 |

Data prior to 12/99 unavailable.
TOC = Top of casing elevation reported by Geraghty & Miller SAP.
amsl = above mean sea level.
BTOC = below top of casing

# ATTACHMENT 1

## FIELD-SAMPLING SHEETS
## AND
## CHAIN-OF-CUSTODY FORM

# GROUNDWATER MONITORING WELL RECORD FORM
## SITE LOCATION: WAYNE RECLAMATION & RECYCLING FACILITY - CITY OF COLUMBIA CITY, IN

WELL NO.: GM-1 DATE: 4-23-09 PROJECT NO.: 47380

FIELD BOOK NO.: N/A WEATHER: Sunny Clear Cool 50°

SAMPLING CREW: Botley

**WELLHEAD INSPECTION:**

Evidence of Activities at Well: No ✓ Yes ____ Comment: ____

Well Protector Condition: Good ✓ Poor ____ Comment: ____

Insect/Rodent Intrusion: No ✓ Yes ____ Comment: ____

Other: NONE

**FIELD EQUIPMENT USED:** Date Calibrated:

Water Level Indicator: Solinst ✓ Soiltest ____ Plopper ____

pH Meter: Hanna ____ Orion ____ Oakton ✓ — 4-23-09

Conductivity Meter: YSI ____ Oakton ✓ Myron L ____

Thermometer: YSI ____ Hanna ____ Oakton ✓

Turbidity: Hach ✓ HF Scientific ____

Dissolved Oxygen: Corning No. 1 ____ Corning No. 2 ____

Other: ____

**STATIC WATER LEVEL:**

Reference Point (RP) Elevation: Top Casing ✓ Top Protector ____ Well Stick-up ____

| Measured Level: | 1st | 2nd | 3rd | Average |
|---|---|---|---|---|
| Time/Depth: | 1002AM/ 27.63 | 1002AM/27.63 | 1002AM/27.63 | 27.63 |

**Well Bottom: Measured Distance from RP:** 35.03 1WV: 1.2062 5WV: 6.031

**PURGING:**

Purging Device: Dedicated Pump ____ Dedicated Pump ____ Disposable Bailer ✓
Grundfos Pump ____ Bladder Pump ____ Other ____

Time Elapsed During Purging (mins.): 24 Total Gallons Removed During Purging: 7.0 + Gallons

| MEASUREMENTS | TIME (IN MINUTES) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1013AM | 1016AM | 1020AM | 1022AM | 1025AM | 1031AM | 1037AM | |
| Amount of Water Removed (mls.) | 1 | 1.0 | 3.0 | 4.0 | 5.0 | 6.5 | 7.0 | |
| pH (S.U.) | 7.39 | 6.77 | 6.74 | 6.74 | 6.87 | 6.85 | 6.85 | |
| Conductivity (umhos/cm) | 627 | 643 | 643 | 650 | 644 | 632 | 640 | |
| Temperature (°C) | 11.6 | 11.8 | 11.9 | 11.9 | 11.8 | 11.8 | 11.7 | |
| Turbidity (NTU) | 44 | 98 | 87 | 138 | 179 | 134 | 156 | |
| TDS (ppm) | - | - | - | - | - | - | - | |
| Dissolved Oxygen (mg/l) | - | - | - | - | - | - | - | |

**SAMPLING:**

Sampling Device: Dedicated Pump ____ Dedicated Pump ____ Disposable Bailer ✓
Grundfos Pump ____ Bladder Pump ____ Other ____

Time Sampling Began: 1040AM Time Completed: 1050AM

Characteristics of Water: Odor NONE Color Brownish / Orange
Turbidity Slightly Silty Other NONE

QA/QC Sample Collected: Duplicate ____ Replicate ____ Matrix Spike/Matrix Spike Duplicate ____ None ✓

**REMARKS:**

# GROUNDWATER MONITORING WELL RECORD FORM
## SITE LOCATION: WAYNE RECLAMATION & RECYCLING FACILITY - CITY OF COLUMBIA CITY, IN

WELL NO.: GM-2 DATE: 4-23-09 PROJECT NO.: 47380

FIELD BOOK NO.: N/A WEATHER: Sunny Clear Mild 55-60°

SAMPLING CREW: Botley

**WELLHEAD INSPECTION:**

Evidence of Activities at Well: No ✓ Yes ____ Comment: ____

Well Protector Condition: Good ✓ Poor ____ Comment: ____

Insect/Rodent Intrusion: No ✓ Yes ____ Comment: ____

Other: NONE

**FIELD EQUIPMENT USED:** Date Calibrated:

Water Level Indicator: Solinst ✓ Soiltest ____ Plopper ____

pH Meter: Hanna ____ Orion ____ Oakton ✓ — 4-23-09

Conductivity Meter: YSI ____ Oakton ✓ Myron L ____

Thermometer: YSI ____ Hanna ____ Oakton ✓

Turbidity: Hach ✓ HF Scientific ____

Dissolved Oxygen: Corning No. 1 ____ Corning No. 2 ____

Other: ____

**STATIC WATER LEVEL:**

Reference Point (RP) Elevation: Top Casing ✓ Top Protector ____ Well Stick-up ____

| Measured Level: | 1st | 2nd | 3rd | Average |
|---|---|---|---|---|
| Time/Depth: | 1053AM / 19.42 | 1053AM / 19.42 | 1053AM / 19.42 | 19.42 |

**Well Bottom: Measured Distance from RP:** 38.83 1wv: 3.16383 5wv: 15.81915

**PURGING:**

Purging Device: Dedicated Pump ____ Dedicated Pump ____ Disposable Bailer ✓ Grundfos Pump ____ Bladder Pump ____ Other ____

Time Elapsed During Purging (mins.): 23 Total Gallons Removed During Purging: 16.0 + Gallons

| MEASUREMENTS | TIME (IN MINUTES) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1039AM | 1101AM | 1105AM | 1108AM | 1112AM | 1119AM | 1119AM | 1122AM |
| Amount of Water Removed (mls.) | I | 1.0 | 4.0 | 7.0 | 9.0 | 12.0 | 14.0 | 16.0 |
| pH (S.U.) | 7.08 | 6.80 | 6.85 | 6.87 | 6.91 | 6.99 | 7.01 | 6.99 |
| Conductivity (umhos/cm) | 679 | 683 | 705 | 714 | 716 | 719 | 718 | 716 |
| Temperature (°C) | 9.8 | 9.9 | 10.6 | 10.9 | 10.8 | 10.7 | 10.8 | 10.9 |
| Turbidity (NTU) | 67 | 413 | 195 | 22 | 1 | 1 | 1 | 1 |
| TDS (ppm) | - | - | - | - | - | - | - | - |
| Dissolved Oxygen (mg/l) | - | - | - | - | - | - | - | - |

**SAMPLING:**

Sampling Device: Dedicated Pump ____ Dedicated Pump ____ Disposable Bailer ✓ Grundfos Pump ____ Bladder Pump ____ Other ____

Time Sampling Began: 1125AM Time Completed: 1135AM

Characteristics of Water: Odor NONE Color Clear Turbidity Clear Other NONE

QA/QC Sample Collected: Duplicate ___ Replicate ___ Matrix Spike/Matrix Spike Duplicate ___ None ✓

**REMARKS:**

* Water silty orange for ~ first 4 Gallons then totally cleared.

# GROUNDWATER MONITORING WELL RECORD FORM
## SITE LOCATION: WAYNE RECLAMATION & RECYCLING FACILITY - CITY OF COLUMBIA CITY, IN

WELL NO.: GM-3 DATE: 4-23-09 PROJECT NO.: 47380

FIELD BOOK NO.: N/A WEATHER: Sunny Clear Warm 65°

SAMPLING CREW: Botley

**WELLHEAD INSPECTION:**

Evidence of Activities at Well: No ✓ Yes ____ Comment: ____
Well Protector Condition: Good ✓ Poor ____ Comment: ____
Insect/Rodent Intrusion: No ✓ Yes ____ Comment: ____
Other: NONE

**FIELD EQUIPMENT USED:** Date Calibrated:

Water Level Indicator: Solinst ✓ Soiltest ____ Plopper ____
pH Meter: Hanna ____ Orion ____ Oakton ✓ — 4-23-09
Conductivity Meter: YSI ____ Oakton ✓ Myron L ____
Thermometer: YSI ____ Hanna ____ Oakton ✓
Turbidity: Hach ✓ HF Scientific ____
Dissolved Oxygen: Corning No. 1 ____ Corning No. 2 ____
Other: ____

**STATIC WATER LEVEL:**

Reference Point (RP) Elevation: Top Casing ✓ Top Protector ____ Well Stick-up ____

| Measured Level: | 1st | 2nd | 3rd | Average |
|---|---|---|---|---|
| Time/Depth: | 1245PM / 9.41 | 1245PM / 9.41 | 1245PM / 9.41 | 9.41 |

**Well Bottom: Measured Distance from RP:** 27.65 IWV= 2.97312 SWV= 14.8656

**PURGING:**

Purging Device: Dedicated Pump ____ Dedicated Pump ____ Disposable Bailer ✓
Grundfos Pump ____ Bladder Pump ____ Other ____

Time Elapsed During Purging (mins.): 30 Total Gallons Removed During Purging: 15.04 Gallons

| MEASUREMENTS | TIME (IN MINUTES) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1251PM | 1255PM | 102PM | 107PM | 109PM | 112PM | 119PM | 121PM |
| Amount of Water Removed (mls.) | I | 1.0 | 4.0 | 7.0 | 9.0 | 11.0 | 13.0 | 15.0 |
| pH (S.U.) | 6.47 | 7.22 | 7.23 | 7.23 | 7.24 | 7.23 | 7.23 | 7.24 |
| Conductivity (umhos/cm) | 513 | 546 | 548 | 534 | 531 | 531 | 529 | 528 |
| Temperature (°C) | 9.1 | 8.2 | 7.6 | 7.5 | 7.4 | 7.2 | 7.4 | 7.5 |
| Turbidity (NTU) | 51 | 188 | 340 | 567 | 739 | 723 | 684 | 686 |
| TDS (ppm) | - | - | - | - | - | - | - | - |
| Dissolved Oxygen (mg/l) | - | - | - | - | - | - | - | - |

**SAMPLING:**

Sampling Device: Dedicated Pump ____ Dedicated Pump ____ Disposable Bailer ✓
Grundfos Pump ____ Bladder Pump ____ Other ____

Time Sampling Began: 125PM Time Completed: 135PM

Characteristics of Water: Odor NONE Color Gray
Turbidity Silty Other NONE

QA/QC Sample Collected: Duplicate ___ Replicate ___ Matrix Spike/Matrix Spike Duplicate ___ None ✓

**REMARKS:**

* Equipment Blank Taken at 1235PM before Purging & Sampling this well.

Duplicate Taken at this Well

# GROUNDWATER MONITORING WELL RECORD FORM
## SITE LOCATION: WAYNE RECLAMATION & RECYCLING FACILITY - CITY OF COLUMBIA CITY, IN

WELL NO.: GM-4 DATE: 4-23-09 PROJECT NO.: 47380

FIELD BOOK NO.: N/A WEATHER: Sunny Clear Mild 60°

SAMPLING CREW: Botley

**WELLHEAD INSPECTION:**

Evidence of Activities at Well: No ✓ Yes ____ Comment: ____

Well Protector Condition: Good ✓ Poor ____ Comment: ____

Insect/Rodent Intrusion: No ✓ Yes ____ Comment: ____

Other: NONE

**FIELD EQUIPMENT USED:** Date Calibrated:

Water Level Indicator: Solinst ✓ Soiltest ____ Plopper ____

pH Meter: Hanna ____ Orion ____ Oakton ✓ — 4-23-09

Conductivity Meter: YSI ____ Oakton ✓ Myron L ____

Thermometer: YSI ____ Hanna ____ Oakton ✓

Turbidity: Hach ✓ HF Scientific ____

Dissolved Oxygen: Corning No. 1 ____ Corning No. 2 ____

Other: ____

**STATIC WATER LEVEL:**

Reference Point (RP) Elevation: Top Casing ✓ Top Protector ____ Well Stick-up ____

| Measured Level: | 1st | 2nd | 3rd | Average |
|---|---|---|---|---|
| Time/Depth: | 1135AM / 13.97 | 1135AM / 13.97 | 1135AM / 13.97 | 13.97 |

**Well Bottom: Measured Distance from RP:** 27.89 IWV: 2.26896 SWV: 11.3448

**PURGING:**

Purging Device: Dedicated Pump ____ Dedicated Pump ____ Disposable Bailer ✓
Grundfos Pump ____ Bladder Pump ____ Other ____

Time Elapsed During Purging (mins.): 26 Total Gallons Removed During Purging: 12.0 Gallons

| MEASUREMENTS | TIME (IN MINUTES) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1140AM | 1143AM | 1146AM | 1149AM | 1154AM | 1200PM | 1206PM | |
| Amount of Water Removed (mls.) | I | 1.0 | 3.0 | 5.0 | 7.0 | 9.0 | 11.5 | |
| pH (S.U.) | 7.00 | 6.98 | 7.04 | 7.08 | 7.15 | 7.17 | 7.18 | |
| Conductivity (umhos/cm) | 645 | 657 | 623 | 597 | 589 | 586 | 584 | |
| Temperature (°C) | 10.0 | 10.0 | 10.4 | 10.5 | 10.6 | 10.4 | 10.3 | |
| Turbidity (NTU) | 227 | 575 | 345 | 137 | 53 | 33 | 39 | |
| TDS (ppm) | - | - | - | - | - | - | - | |
| Dissolved Oxygen (mg/l) | - | - | - | - | - | - | - | |

**SAMPLING:**

Sampling Device: Dedicated Pump ____ Dedicated Pump ____ Disposable Bailer ✓
Grundfos Pump ____ Bladder Pump ____ Other ____

Time Sampling Began: 1210PM Time Completed: 1220PM

Characteristics of Water: Odor NONE Color NONE
Turbidity Clear Other Clear

QA/QC Sample Collected: Duplicate ✓ Replicate ___ Matrix Spike/Matrix Spike Duplicate ___ None ___

**REMARKS:**

* Initially very silty orange for ~ first 3-4 Gallons then cleared.

DSD1152

**TestAmerica** INCORPORATED

Dayton Division
3601 South Dixie Drive
Dayton Ohio 45439

Phone: 937-294-6856
Toll Free: 800-572-9839
Fax: 937-294-7816

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

State in which sampling occurred: Indiana Landfill

Compliance Monitoring? Yes / No

Enforcement Action? Yes / No

Client Name: Burgess & Niple, Inc.

Address: 5085 Reed Road

City/State/Zip: Columbus, Ohio, 43220

Project Manager: Michael Akins

Telephone Number: 614-459-2050 Fax No.: 614-451-1385

Sampler Name: (Print) Craig Botley

Sampler Signature: Stephen C. Botley Jr.

Report To: Michael Akins

Invoice To: Michael Akins

QUOTE NO:

Client Email: makins@burnip.com

Project No & ID: Wayne RRF - Columbia City, Indiana 47380

| Sample ID | Date Sampled | Time Sampled | No. of Containers Shipped | Grab | Composite | Field Filtered | Preservative: $HNO_3$ | HCl - 40 ml Vial | NaOH | $H_2SO_4$ | $H_2SO_4$ | None | Other | Matrix: SOIL | WATER | VOCs 8260B | COD | Sodium | Chloride | Ammonia | RUSH TAT (Pre-Schedule) | RUSH Due Date | Standard 7-10 Business Days | Email Results | Standard Level 2 QC | Electronic Deliverables | Temp | pH | Cond | Turb. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GM-1 | 4/23/09 | 1040 AM | 6 | x | | | 1 | 3 | | 1 | | 1 | | | | x | x | x | x | x | | | x | x | x | x | 11.7 | 6.85 | 640 | 156 |
| GM-2 | ↓ | 1125 AM | 6 | x | | | 1 | 3 | | 1 | | 1 | | | | x | x | x | x | x | | | | | | | 10.9 | 6.99 | 716 | 1 |
| GM-3 | | 125 PM | 6 | x | | | 1 | 3 | | 1 | | 1 | | | | x | x | x | x | x | | | | | | | 7.5 | 7.24 | 528 | 686 |
| GM-4 | | 1210 PM | 6 | x | | | 1 | 3 | | 1 | | 1 | | | | x | x | x | x | x | | | | | | | 10.3 | 7.18 | 584 | 39 |
| GM-Duplicate | | — | 6 | x | | | 1 | 3 | | 1 | | 1 | | | | x | x | x | x | x | | | | | | | | | | |
| Equipment Blank | | | 6 | x | | | 1 | 3 | | 1 | | 1 | | | | x | x | x | x | x | | | | | | | | | | |
| Trip Blank | 4/23/09 | — | 2 | x | | | | 2 | | | | | | | | x | | | | | | | | | | | | | | |

Special Instructions:

Laboratory Comments:

Temperature Upon Receipt: 0.0°C

VOCs Free of Headspace? Y N NA

Sample Containers Intact? Y N

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Stephen C. Botley Jr. | 4-23-09 | 5:30 PM | [illegible] | 4-23-09 | 5:30 PM |
| Relinquished by: | Date | Time | Received by TestAmerica: | Date | Time |
| [illegible] | 4-24-09 (NPA) | 3:00 PM | [illegible] | 4-24-09 | 16:50 |

TestAmerica

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client ID Burgess

Work Order # DSD1152

Discrepencies ☐

Rush or Short Hold ☐

# Cooler/Sample Receipt

if rush 24hr 2day 3day 5day other_____

**Method of Shipment:**

Are samples soils requiring USDA quarantine? Yes (No) (circle one)
If yes notify PM immediately

**Walk in Fed Ex UPS DHL TAL Courier Field Other**_____

**Shipping Container Type:** Cooler Box **Other**_____

**Opened Date/Time** 4-24-09 16:50 **Initials** MJA

| Receipt Questions** | Y | N | n/a | "NO" answers require a comment |
|---|---|---|---|---|
| COC present | ✓ | | | |
| Containers in good condition (unbroken and not leaking), and appropriately filled | ✓ | | | |
| Appropriate containers used & Adequate volume provided | ✓ | | | |
| Correct preservation on the COC | ✓ | | | |
| Numbers of samples match COC | ✓ | | | |
| If used, custody seals were intact | ✓ | | | |
| Was CoC free of discrepencies? | ✓ | | | |
| Samples received within hold time | ✓ | | | |
| VOA samples received without headspace in excess of 6 mm | | | ✓ | |
| Trip Blanks received for each cooler with VOAs | | | ✓ | |

| #/size | HNO3 | HCL | NaOH | H2SO4 | Methanol | None | Other (Specify) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |

**Tracking #**_____

Temp Acceptable? YES ☑ NO ☐

Thermometer ID S

Cooler ID _____ Uncorrected -0.0 Corrected -0.0 °C (Ice)

Packing Material Bubble

Melted Ice Blue Ice None Other_____ (Circle one)

If out of temperature, note affected samples

Direct from Field? Yes (No) (Circle one)

CHECK IF ADDITIONAL SHEETS REQUIRED ☐

** May not be applicable if samples are not for compliance testing

**Client Contact Record** (required for discrepancies, unless agreement is on file with project) Date & Time _____

Contact via: ☐phone ☐email ☐ other _____ Person contacted_____

Discussion/Resolution

**Is a revised chain being issued? Yes No- if Yes, it must be scanned.** (Circle one)

Reviewed by PM Signature _____ Date/Time 4.28.09

Page 1 of 1

WI No. DT-SCA-WI-001.3

effective 8/4/08

# ATTACHMENT 2

# LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

4738 Gateway Circle Dayton, OH 45440 (800) 572-9839
339 W. Walton Blvd Pontiac, MI 48340 (800) 526-4951

May 06, 2009

Client:

Burgess & Niple (Landfill)
5085 Reed Rd.
Columbus, OH 43220

Attn: Michael Akins

Work Order: DSD1152
Project Name: Wayne Reclamation & Recycling (Indiana)
Project Number: Wayne RRF- Columbia City, Indiana

Date Received: 04/24/09

**Samples logged in at Dayton laboratory.**

An executed copy of the Chain of Custody is also included as an addendum to this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at the number shown above.

| SAMPLE IDENTIFICATION | LAB NUMBER | COLLECTION DATE AND TIME |
|---|---|---|
| GM-1 | DSD1152-01 | 04/23/09 10:40 |
| GM-2 | DSD1152-02 | 04/23/09 11:25 |
| GM-3 | DSD1152-03 | 04/23/09 13:25 |
| GM-4 | DSD1152-04 | 04/23/09 12:10 |
| GM-Duplicate | DSD1152-05 | 04/23/09 |
| Equipment Blank | DSD1152-06 | 04/23/09 |
| Trip Blank | DSD1152-07 | 04/23/09 |

Ohio Certification Number: 4074, 857

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

*TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.*

Report Approved By:

SAHoward

This report has been electronically signed.

**TestAmerica Dayton**
Shelly A. Howard
Dayton Project Manager

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-01 (GM-1 - Water - NonPotable)** | | | | | **Sampled: 04/23/09 10:40** | | **Recvd: 04/24/09 16:50** | | |
| General Chemistry Parameters | | | | | | | | | |
| **Chloride** | **37.7** | | mg/L | 1.00 | 1 | 04/28/09 23:04 | RLM | 9041102 | SW 9056A |
| **Ammonia, Undistilled as N** | **0.666** | | mg/L | 0.100 | 2 | 04/30/09 13:30 | KKH | 9041204 | EPA 350.1/SM18 4500 NH3 H |
| Chemical Oxygen Demand | <50.0 | | mg/L | 50.0 | 1 | 04/28/09 14:40 | EEH | 9041051 | EPA 410.4 |
| Total Metals | | | | | | | | | |
| **Sodium** | **18.4** | | mg/L | 1.00 | 1 | 05/01/09 13:15 | CAJ | 9041047 | SW 6010B |
| Volatile Organic Compounds by GC/MS | | | | | | | | | |
| Acetone | <20.0 | | ug/L | 20.0 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Acrylonitrile | <50.0 | | ug/L | 50.0 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Benzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Bromochloromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Bromodichloromethane (Dichlorobromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Bromoform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Bromomethane (Methyl bromide) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 2-Butanone (MEK) | <12.5 | L1 | ug/L | 12.5 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Carbon disulfide | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Carbon tetrachloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Chlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Chloroethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Chloroform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Chloromethane (Methyl chloride) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Dibromochloromethane (Chlorodibromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromo-3-chloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromoethane (EDB) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Dibromomethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| trans-1,4-Dichloro-2-butene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,2-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,4-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,1-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| cis-1,2-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| trans-1,2-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,1-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloropropane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| cis-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| trans-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Ethylbenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Hexachlorobutadiene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 2-Hexanone | <10.0 | | ug/L | 10.0 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Iodomethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Methylene chloride | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 4-Methyl-2-pentanone (MIBK) | <12.5 | | ug/L | 12.5 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-01 (GM-1 - Water - NonPotable) - cont.** | | | | | **Sampled: 04/23/09 10:40** | | **Recvd: 04/24/09 16:50** | | |
| Volatile Organic Compounds by GC/MS - cont. | | | | | | | | | |
| Styrene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,1,1,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,1,2,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Tetrachloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Toluene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,1,1-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,1,2-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Trichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Trichlorofluoromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| 1,2,3-Trichloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Vinyl Acetate | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Vinyl chloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Xylenes, Total | <2.00 | | ug/L | 2.00 | 1 | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| *Surr: 1,2-Dichloroethane-d4 (80-120%)* | *92 %* | | | | | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| *Surr: Dibromofluoromethane (80-120%)* | *95 %* | | | | | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| *Surr: Toluene-d8 (80-120%)* | *103 %* | | | | | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| *Surr: 4-Bromofluorobenzene (80-120%)* | *102 %* | | | | | 04/28/09 17:52 | PRB | 9041130 | SW 8260B |
| Client Supplied Field Data | | | | | | | | | |
| **pH** | **6.85** | | S.U. | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Specific Conductance** | **640** | | umhos/cm | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Temperature** | **11.7** | | °C | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Turbidity - Client Supplied** | **156** | | NTU | NA | 1 | 04/23/09 00:00 | | NONE | NA |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | |
| Michael Akins | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-02 (GM-2 - Water - NonPotable)** | | | | | **Sampled: 04/23/09 11:25** | | **Recvd: 04/24/09 16:50** | | |
| General Chemistry Parameters | | | | | | | | | |
| **Chloride** | **12.2** | | mg/L | 1.00 | 1 | 04/28/09 23:21 | RLM | 9041102 | SW 9056A |
| **Ammonia, Undistilled as N** | **0.886** | | mg/L | 0.100 | 2 | 04/30/09 13:30 | KKH | 9041204 | EPA 350.1/SM18 4500 NH3 H |
| Chemical Oxygen Demand | <50.0 | | mg/L | 50.0 | 1 | 04/28/09 14:40 | EEH | 9041051 | EPA 410.4 |
| Total Metals | | | | | | | | | |
| **Sodium** | **11.5** | | mg/L | 1.00 | 1 | 05/01/09 13:20 | CAJ | 9041047 | SW 6010B |
| Volatile Organic Compounds by GC/MS | | | | | | | | | |
| Acetone | <20.0 | | ug/L | 20.0 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Acrylonitrile | <50.0 | | ug/L | 50.0 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Benzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Bromochloromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Bromodichloromethane (Dichlorobromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Bromoform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Bromomethane (Methyl bromide) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 2-Butanone (MEK) | <12.5 | L1 | ug/L | 12.5 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Carbon disulfide | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Carbon tetrachloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Chlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Chloroethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Chloroform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Chloromethane (Methyl chloride) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Dibromochloromethane (Chlorodibromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromo-3-chloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromoethane (EDB) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Dibromomethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| trans-1,4-Dichloro-2-butene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,2-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,4-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,1-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| cis-1,2-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| trans-1,2-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,1-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloropropane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| cis-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| trans-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Ethylbenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Hexachlorobutadiene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 2-Hexanone | <10.0 | | ug/L | 10.0 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Iodomethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Methylene chloride | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 4-Methyl-2-pentanone (MIBK) | <12.5 | | ug/L | 12.5 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-02 (GM-2 - Water - NonPotable) - cont.** | | | | | **Sampled: 04/23/09 11:25** | | **Recvd: 04/24/09 16:50** | | |
| Volatile Organic Compounds by GC/MS - cont. | | | | | | | | | |
| Styrene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,1,1,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,1,2,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Tetrachloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Toluene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,1,1-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,1,2-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Trichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Trichlorofluoromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| 1,2,3-Trichloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Vinyl Acetate | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Vinyl chloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Xylenes, Total | <2.00 | | ug/L | 2.00 | 1 | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| *Surr: 1,2-Dichloroethane-d4 (80-120%)* | *95 %* | | | | | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| *Surr: Dibromofluoromethane (80-120%)* | *96 %* | | | | | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| *Surr: Toluene-d8 (80-120%)* | *106 %* | | | | | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| *Surr: 4-Bromofluorobenzene (80-120%)* | *101 %* | | | | | 04/28/09 18:21 | PRB | 9041130 | SW 8260B |
| Client Supplied Field Data | | | | | | | | | |
| **pH** | **6.99** | | S.U. | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Specific Conductance** | **716** | | umhos/cm | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Temperature** | **10.9** | | °C | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Turbidity - Client Supplied** | **1.0** | | NTU | NA | 1 | 04/23/09 00:00 | | NONE | NA |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-03 (GM-3 - Water - NonPotable)** | | | | | **Sampled: 04/23/09 13:25** | | **Recvd: 04/24/09 16:50** | | |
| General Chemistry Parameters | | | | | | | | | |
| **Chloride** | **38.5** | | mg/L | 1.00 | 1 | 04/28/09 23:38 | RLM | 9041102 | SW 9056A |
| **Ammonia, Undistilled as N** | **0.356** | | mg/L | 0.0500 | 1 | 04/30/09 13:30 | KKH | 9041204 | EPA 350.1/SM18 4500 NH3 H |
| **Chemical Oxygen Demand** | **74.8** | | mg/L | 50.0 | 1 | 04/28/09 14:40 | EEH | 9041051 | EPA 410.4 |
| Total Metals | | | | | | | | | |
| **Sodium** | **25.5** | | mg/L | 1.00 | 1 | 05/01/09 13:25 | CAJ | 9041047 | SW 6010B |
| Volatile Organic Compounds by GC/MS | | | | | | | | | |
| Acetone | <20.0 | | ug/L | 20.0 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Acrylonitrile | <50.0 | | ug/L | 50.0 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Benzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Bromochloromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Bromodichloromethane (Dichlorobromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Bromoform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Bromomethane (Methyl bromide) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 2-Butanone (MEK) | <12.5 | L1 | ug/L | 12.5 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Carbon disulfide | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Carbon tetrachloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Chlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Chloroethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Chloroform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Chloromethane (Methyl chloride) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Dibromochloromethane (Chlorodibromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromo-3-chloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromoethane (EDB) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Dibromomethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| trans-1,4-Dichloro-2-butene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,2-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,4-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,1-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| **cis-1,2-Dichloroethene** | **12.6** | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| trans-1,2-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,1-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloropropane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| cis-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| trans-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Ethylbenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Hexachlorobutadiene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 2-Hexanone | <10.0 | | ug/L | 10.0 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Iodomethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Methylene chloride | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 4-Methyl-2-pentanone (MIBK) | <12.5 | | ug/L | 12.5 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | |
| Michael Akins | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-03 (GM-3 - Water - NonPotable) - cont.** | | | | | **Sampled: 04/23/09 13:25** | | **Recvd: 04/24/09 16:50** | | |
| Volatile Organic Compounds by GC/MS - cont. | | | | | | | | | |
| Styrene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,1,1,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,1,2,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Tetrachloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Toluene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,1,1-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,1,2-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Trichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Trichlorofluoromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| 1,2,3-Trichloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Vinyl Acetate | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| **Vinyl chloride** | **9.78** | | ug/L | 1.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Xylenes, Total | <2.00 | | ug/L | 2.00 | 1 | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| *Surr: 1,2-Dichloroethane-d4 (80-120%)* | *95 %* | | | | | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| *Surr: Dibromofluoromethane (80-120%)* | *95 %* | | | | | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| *Surr: Toluene-d8 (80-120%)* | *103 %* | | | | | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| *Surr: 4-Bromofluorobenzene (80-120%)* | *101 %* | | | | | 04/28/09 18:50 | PRB | 9041130 | SW 8260B |
| Client Supplied Field Data | | | | | | | | | |
| **pH** | **7.24** | | S.U. | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Specific Conductance** | **528** | | umhos/cm | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Temperature** | **7.5** | | °C | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Turbidity - Client Supplied** | **686** | | NTU | NA | 1 | 04/23/09 00:00 | | NONE | NA |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | |
| Michael Akins | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-04 (GM-4 - Water - NonPotable)** | | | | | **Sampled: 04/23/09 12:10** | | **Recvd: 04/24/09 16:50** | | |
| General Chemistry Parameters | | | | | | | | | |
| **Chloride** | **2.85** | | mg/L | 1.00 | 1 | 04/28/09 23:55 | RLM | 9041102 | SW 9056A |
| **Ammonia, Undistilled as N** | **0.279** | | mg/L | 0.0500 | 1 | 04/30/09 13:30 | KKH | 9041204 | EPA 350.1/SM18 4500 NH3 H |
| Chemical Oxygen Demand | <50.0 | | mg/L | 50.0 | 1 | 04/28/09 14:40 | EEH | 9041051 | EPA 410.4 |
| Total Metals | | | | | | | | | |
| **Sodium** | **7.43** | | mg/L | 1.00 | 1 | 05/01/09 13:30 | CAJ | 9041047 | SW 6010B |
| Volatile Organic Compounds by GC/MS | | | | | | | | | |
| Acetone | <20.0 | | ug/L | 20.0 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Acrylonitrile | <50.0 | | ug/L | 50.0 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Benzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Bromochloromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Bromodichloromethane (Dichlorobromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Bromoform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Bromomethane (Methyl bromide) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 2-Butanone (MEK) | <12.5 | L1 | ug/L | 12.5 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Carbon disulfide | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Carbon tetrachloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Chlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Chloroethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Chloroform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Chloromethane (Methyl chloride) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Dibromochloromethane (Chlorodibromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromo-3-chloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromoethane (EDB) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Dibromomethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| trans-1,4-Dichloro-2-butene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 1,2-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 1,4-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| **1,1-Dichloroethane** | **15.6** | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| **cis-1,2-Dichloroethene** | **122** | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| **trans-1,2-Dichloroethene** | **8.45** | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| **1,1-Dichloroethene** | **2.99** | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloropropane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| cis-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| trans-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Ethylbenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Hexachlorobutadiene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 2-Hexanone | <10.0 | | ug/L | 10.0 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Iodomethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Methylene chloride | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 4-Methyl-2-pentanone (MIBK) | <12.5 | | ug/L | 12.5 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | |
| Michael Akins | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-04 (GM-4 - Water - NonPotable) - cont.** | | | | | **Sampled: 04/23/09 12:10** | | **Recvd: 04/24/09 16:50** | | |
| Volatile Organic Compounds by GC/MS - cont. | | | | | | | | | |
| Styrene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 1,1,1,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 1,1,2,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Tetrachloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Toluene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| **1,1,1-Trichloroethane** | **169** | | ug/L | 100 | 100 | 04/29/09 14:33 | jmt | 9041196 | SW 8260B |
| 1,1,2-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| **Trichloroethene** | **891** | | ug/L | 100 | 100 | 04/29/09 14:33 | jmt | 9041196 | SW 8260B |
| Trichlorofluoromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| 1,2,3-Trichloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Vinyl Acetate | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| **Vinyl chloride** | **26.8** | | ug/L | 1.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| Xylenes, Total | <2.00 | | ug/L | 2.00 | 1 | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| *Surr: 1,2-Dichloroethane-d4 (80-120%)* | *93 %* | | | | | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| *Surr: 1,2-Dichloroethane-d4 (80-120%)* | *100 %* | | | | | 04/29/09 14:33 | jmt | 9041196 | SW 8260B |
| *Surr: Dibromofluoromethane (80-120%)* | *92 %* | | | | | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| *Surr: Dibromofluoromethane (80-120%)* | *98 %* | | | | | 04/29/09 14:33 | jmt | 9041196 | SW 8260B |
| *Surr: Toluene-d8 (80-120%)* | *104 %* | | | | | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| *Surr: Toluene-d8 (80-120%)* | *103 %* | | | | | 04/29/09 14:33 | jmt | 9041196 | SW 8260B |
| *Surr: 4-Bromofluorobenzene (80-120%)* | *103 %* | | | | | 04/28/09 19:19 | PRB | 9041130 | SW 8260B |
| *Surr: 4-Bromofluorobenzene (80-120%)* | *92 %* | | | | | 04/29/09 14:33 | jmt | 9041196 | SW 8260B |
| Client Supplied Field Data | | | | | | | | | |
| **pH** | **7.18** | | S.U. | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Specific Conductance** | **584** | | umhos/cm | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Temperature** | **10.3** | | °C | NA | 1 | 04/23/09 00:00 | | NONE | NA |
| **Turbidity - Client Supplied** | **39** | | NTU | NA | 1 | 04/23/09 00:00 | | NONE | NA |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-05 (GM-Duplicate - Water - NonPotable)** | | | | | **Sampled: 04/23/09** | | | **Recvd: 04/24/09 16:50** | |
| General Chemistry Parameters | | | | | | | | | |
| **Chloride** | **2.88** | | mg/L | 1.00 | 1 | 04/29/09 00:11 | RLM | 9041102 | SW 9056A |
| **Ammonia, Undistilled as N** | **0.295** | | mg/L | 0.0500 | 1 | 04/30/09 13:30 | KKH | 9041204 | EPA 350.1/SM18 4500 NH3 H |
| **Chemical Oxygen Demand** | **61.5** | | mg/L | 50.0 | 1 | 04/28/09 14:40 | EEH | 9041051 | EPA 410.4 |
| Total Metals | | | | | | | | | |
| **Sodium** | **7.33** | | mg/L | 1.00 | 1 | 05/01/09 13:35 | CAJ | 9041047 | SW 6010B |
| Volatile Organic Compounds by GC/MS | | | | | | | | | |
| Acetone | <20.0 | | ug/L | 20.0 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Acrylonitrile | <50.0 | | ug/L | 50.0 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Benzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Bromochloromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Bromodichloromethane (Dichlorobromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Bromoform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Bromomethane (Methyl bromide) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 2-Butanone (MEK) | <12.5 | L1 | ug/L | 12.5 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Carbon disulfide | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Carbon tetrachloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Chlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Chloroethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Chloroform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Chloromethane (Methyl chloride) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Dibromochloromethane (Chlorodibromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromo-3-chloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromoethane (EDB) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Dibromomethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| trans-1,4-Dichloro-2-butene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 1,2-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 1,4-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| **1,1-Dichloroethane** | **15.5** | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| **cis-1,2-Dichloroethene** | **119** | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| **trans-1,2-Dichloroethene** | **8.40** | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| **1,1-Dichloroethene** | **2.92** | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloropropane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| cis-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| trans-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Ethylbenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Hexachlorobutadiene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 2-Hexanone | <10.0 | | ug/L | 10.0 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Iodomethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Methylene chloride | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 4-Methyl-2-pentanone (MIBK) | <12.5 | | ug/L | 12.5 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-05 (GM-Duplicate - Water - NonPotable) - cont.** | | | | | **Sampled: 04/23/09** | | | **Recvd: 04/24/09 16:50** | |
| Volatile Organic Compounds by GC/MS - cont. | | | | | | | | | |
| Styrene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 1,1,1,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 1,1,2,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Tetrachloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Toluene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| **1,1,1-Trichloroethane** | **192** | M | ug/L | 100 | 100 | 04/29/09 16:34 | PRB | 9041188 | SW 8260B |
| 1,1,2-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| **Trichloroethene** | **1000** | M | ug/L | 100 | 100 | 04/29/09 16:34 | PRB | 9041188 | SW 8260B |
| Trichlorofluoromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| 1,2,3-Trichloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Vinyl Acetate | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| **Vinyl chloride** | **26.3** | | ug/L | 1.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| Xylenes, Total | <2.00 | | ug/L | 2.00 | 1 | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| *Surr: 1,2-Dichloroethane-d4 (80-120%)* | *92 %* | | | | | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| *Surr: 1,2-Dichloroethane-d4 (80-120%)* | *93 %* | *M* | | | | 04/29/09 16:34 | PRB | 9041188 | SW 8260B |
| *Surr: Dibromofluoromethane (80-120%)* | *92 %* | | | | | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| *Surr: Dibromofluoromethane (80-120%)* | *94 %* | *M* | | | | 04/29/09 16:34 | PRB | 9041188 | SW 8260B |
| *Surr: Toluene-d8 (80-120%)* | *103 %* | | | | | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| *Surr: Toluene-d8 (80-120%)* | *105 %* | *M* | | | | 04/29/09 16:34 | PRB | 9041188 | SW 8260B |
| *Surr: 4-Bromofluorobenzene (80-120%)* | *101 %* | | | | | 04/28/09 19:48 | PRB | 9041130 | SW 8260B |
| *Surr: 4-Bromofluorobenzene (80-120%)* | *102 %* | *M* | | | | 04/29/09 16:34 | PRB | 9041188 | SW 8260B |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | |
| Michael Akins | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-06 (Equipment Blank - Water - NonPotable)** | | | | | **Sampled: 04/23/09** | | | **Recvd: 04/24/09 16:50** | |
| General Chemistry Parameters | | | | | | | | | |
| Chloride | <1.00 | | mg/L | 1.00 | 1 | 04/29/09 00:28 | RLM | 9041102 | SW 9056A |
| Ammonia, Undistilled as N | <0.0500 | | mg/L | 0.0500 | 1 | 04/30/09 13:30 | KKH | 9041204 | EPA 350.1/SM18 4500 NH3 H |
| Chemical Oxygen Demand | <50.0 | | mg/L | 50.0 | 1 | 04/28/09 14:40 | EEH | 9041051 | EPA 410.4 |
| Total Metals | | | | | | | | | |
| Sodium | <1.00 | | mg/L | 1.00 | 1 | 05/01/09 13:40 | CAJ | 9041047 | SW 6010B |
| Volatile Organic Compounds by GC/MS | | | | | | | | | |
| Acetone | <20.0 | | ug/L | 20.0 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Acrylonitrile | <50.0 | | ug/L | 50.0 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Benzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Bromochloromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Bromodichloromethane (Dichlorobromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Bromoform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Bromomethane (Methyl bromide) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 2-Butanone (MEK) | <12.5 | L1 | ug/L | 12.5 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Carbon disulfide | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Carbon tetrachloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Chlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Chloroethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| **Chloroform** | **2.89** | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Chloromethane (Methyl chloride) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Dibromochloromethane (Chlorodibromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromo-3-chloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromoethane (EDB) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Dibromomethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| trans-1,4-Dichloro-2-butene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,2-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,4-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,1-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| cis-1,2-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| trans-1,2-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,1-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloropropane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| cis-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| trans-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Ethylbenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Hexachlorobutadiene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 2-Hexanone | <10.0 | | ug/L | 10.0 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Iodomethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Methylene chloride | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 4-Methyl-2-pentanone (MIBK) | <12.5 | | ug/L | 12.5 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-06 (Equipment Blank - Water - NonPotable) - cont.** | | | | | **Sampled: 04/23/09** | | | **Recvd: 04/24/09 16:50** | |
| Volatile Organic Compounds by GC/MS - cont. | | | | | | | | | |
| Styrene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,1,1,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,1,2,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Tetrachloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Toluene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,1,1-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,1,2-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Trichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Trichlorofluoromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| 1,2,3-Trichloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Vinyl Acetate | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Vinyl chloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| Xylenes, Total | <2.00 | | ug/L | 2.00 | 1 | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| *Surr: 1,2-Dichloroethane-d4 (80-120%)* | *95 %* | | | | | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| *Surr: Dibromofluoromethane (80-120%)* | *95 %* | | | | | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| *Surr: Toluene-d8 (80-120%)* | *105 %* | | | | | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |
| *Surr: 4-Bromofluorobenzene (80-120%)* | *102 %* | | | | | 04/28/09 17:23 | PRB | 9041130 | SW 8260B |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-07 (Trip Blank - Water - NonPotable)** | | | | | **Sampled: 04/23/09** | | | **Recvd: 04/24/09 16:50** | |
| Volatile Organic Compounds by GC/MS | | | | | | | | | |
| Acetone | <20.0 | | ug/L | 20.0 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Acrylonitrile | <50.0 | | ug/L | 50.0 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Benzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Bromochloromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Bromodichloromethane (Dichlorobromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Bromoform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Bromomethane (Methyl bromide) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 2-Butanone (MEK) | <12.5 | L1 | ug/L | 12.5 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Carbon disulfide | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Carbon tetrachloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Chlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Chloroethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Chloroform | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Chloromethane (Methyl chloride) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Dibromochloromethane (Chlorodibromomethane) | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromo-3-chloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,2-Dibromoethane (EDB) | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Dibromomethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| trans-1,4-Dichloro-2-butene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,2-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,4-Dichlorobenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,1-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| cis-1,2-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| trans-1,2-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,1-Dichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,2-Dichloropropane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| cis-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| trans-1,3-Dichloropropene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Ethylbenzene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Hexachlorobutadiene | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 2-Hexanone | <10.0 | | ug/L | 10.0 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Iodomethane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Methylene chloride | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 4-Methyl-2-pentanone (MIBK) | <12.5 | | ug/L | 12.5 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Styrene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,1,1,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,1,2,2-Tetrachloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Tetrachloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Toluene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,1,1-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,1,2-Trichloroethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

## ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | Rpt Limit | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: DSD1152-07 (Trip Blank - Water - NonPotable) - cont.** | | | | | **Sampled: 04/23/09** | | | **Recvd: 04/24/09 16:50** | |
| Volatile Organic Compounds by GC/MS - cont. | | | | | | | | | |
| Trichloroethene | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Trichlorofluoromethane | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| 1,2,3-Trichloropropane | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Vinyl Acetate | <5.00 | | ug/L | 5.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Vinyl chloride | <1.00 | | ug/L | 1.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| Xylenes, Total | <2.00 | | ug/L | 2.00 | 1 | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| *Surr: 1,2-Dichloroethane-d4 (80-120%)* | *96 %* | | | | | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| *Surr: Dibromofluoromethane (80-120%)* | *96 %* | | | | | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| *Surr: Toluene-d8 (80-120%)* | *104 %* | | | | | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |
| *Surr: 4-Bromofluorobenzene (80-120%)* | *101 %* | | | | | 04/28/09 16:54 | PRB | 9041130 | SW 8260B |

Burgess & Niple (Landfill)
5085 Reed Rd.
Columbus, OH 43220
Michael Akins

Work Order: DSD1152
Project: Wayne Reclamation & Recycling (Indiana)
Project Number: Wayne RRF- Columbia City, Indiana

Received: 04/24/09
Reported: 05/06/09 14:54

# LABORATORY BLANK QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **General Chemistry Parameters** | | | | | | | | | | | | | | |
| Chemical Oxygen Demand | 9041051 | | | mg/L | N/A | 50.0 | <50.0 | | | | | | | |
| Chloride | 9041102 | | | mg/L | N/A | 1.00 | <1.00 | | | | | | | |
| Ammonia, Undistilled as N | 9041204 | | | mg/L | N/A | 0.0500 | <0.0500 | | | | | | | |
| **Total Metals** | | | | | | | | | | | | | | |
| Sodium | 9041047 | | | mg/L | N/A | 1.00 | <1.00 | | | | | | | |
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | | | | | | |
| Acetone | 9041130 | | | ug/L | N/A | 20.0 | <20.0 | | | | | | | |
| Acrylonitrile | 9041130 | | | ug/L | N/A | 50.0 | <50.0 | | | | | | | |
| Benzene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromochloromethane | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromodichloromethane (Dichlorobromomethane) | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromoform | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromomethane (Methyl bromide) | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 2-Butanone (MEK) | 9041130 | | | ug/L | N/A | 12.5 | <12.5 | | | | | | | L1 |
| Carbon disulfide | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Carbon tetrachloride | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Chlorobenzene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Chloroethane | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Chloroform | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Chloromethane (Methyl chloride) | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Dibromochloromethane (Chlorodibromomethane) | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 1,2-Dibromoethane (EDB) | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Dibromomethane | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| trans-1,4-Dichloro-2-butene | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 1,2-Dichlorobenzene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,4-Dichlorobenzene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1-Dichloroethane | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2-Dichloroethane | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| cis-1,2-Dichloroethene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| trans-1,2-Dichloroethene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1-Dichloroethene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2-Dichloropropane | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| cis-1,3-Dichloropropene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| trans-1,3-Dichloropropene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Ethylbenzene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Hexachlorobutadiene | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 2-Hexanone | 9041130 | | | ug/L | N/A | 10.0 | <10.0 | | | | | | | |
| Iodomethane | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Methylene chloride | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 4-Methyl-2-pentanone (MIBK) | 9041130 | | | ug/L | N/A | 12.5 | <12.5 | | | | | | | |
| Styrene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

## LABORATORY BLANK QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Tetrachloroethene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Toluene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,1-Trichloroethane | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,2-Trichloroethane | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Trichloroethene | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Trichlorofluoromethane | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2,3-Trichloropropane | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Vinyl Acetate | 9041130 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Vinyl chloride | 9041130 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Xylenes, Total | 9041130 | | | ug/L | N/A | 2.00 | <2.00 | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *9041130* | | | ug/L | | | | | *93* | | *80-120* | | | |
| *Surrogate: Dibromofluoromethane* | *9041130* | | | ug/L | | | | | *95* | | *80-120* | | | |
| *Surrogate: Toluene-d8* | *9041130* | | | ug/L | | | | | *104* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *9041130* | | | ug/L | | | | | *102* | | *80-120* | | | |
| Acetone | 9041188 | | | ug/L | N/A | 20.0 | <20.0 | | | | | | | |
| Acrylonitrile | 9041188 | | | ug/L | N/A | 50.0 | <50.0 | | | | | | | |
| Benzene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromochloromethane | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromodichloromethane (Dichlorobromomethane) | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromoform | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromomethane (Methyl bromide) | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 2-Butanone (MEK) | 9041188 | | | ug/L | N/A | 12.5 | <12.5 | | | | | | | |
| Carbon disulfide | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Carbon tetrachloride | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Chlorobenzene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Chloroethane | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Chloroform | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Chloromethane (Methyl chloride) | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Dibromochloromethane (Chlorodibromomethane) | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 1,2-Dibromoethane (EDB) | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Dibromomethane | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| trans-1,4-Dichloro-2-butene | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 1,2-Dichlorobenzene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,4-Dichlorobenzene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1-Dichloroethane | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2-Dichloroethane | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| cis-1,2-Dichloroethene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| trans-1,2-Dichloroethene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1-Dichloroethene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2-Dichloropropane | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| cis-1,3-Dichloropropene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |

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|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | |
| Michael Akins | | | | |

## LABORATORY BLANK QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | | | | | | |
| trans-1,3-Dichloropropene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Ethylbenzene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Hexachlorobutadiene | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 2-Hexanone | 9041188 | | | ug/L | N/A | 10.0 | <10.0 | | | | | | | |
| Iodomethane | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Methylene chloride | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 4-Methyl-2-pentanone (MIBK) | 9041188 | | | ug/L | N/A | 12.5 | <12.5 | | | | | | | |
| Styrene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Tetrachloroethene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Toluene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,1-Trichloroethane | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,2-Trichloroethane | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Trichloroethene | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Trichlorofluoromethane | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2,3-Trichloropropane | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Vinyl Acetate | 9041188 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Vinyl chloride | 9041188 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Xylenes, Total | 9041188 | | | ug/L | N/A | 2.00 | <2.00 | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *9041188* | | | ug/L | | | | | *99* | | *80-120* | | | |
| *Surrogate: Dibromofluoromethane* | *9041188* | | | ug/L | | | | | *99* | | *80-120* | | | |
| *Surrogate: Toluene-d8* | *9041188* | | | ug/L | | | | | *100* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *9041188* | | | ug/L | | | | | *100* | | *80-120* | | | |
| Acetone | 9041196 | | | ug/L | N/A | 20.0 | <20.0 | | | | | | | |
| Acrylonitrile | 9041196 | | | ug/L | N/A | 50.0 | <50.0 | | | | | | | |
| Benzene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromochloromethane | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromodichloromethane (Dichlorobromomethane) | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromoform | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Bromomethane (Methyl bromide) | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 2-Butanone (MEK) | 9041196 | | | ug/L | N/A | 12.5 | <12.5 | | | | | | | |
| Carbon disulfide | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Carbon tetrachloride | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Chlorobenzene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Chloroethane | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Chloroform | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Chloromethane (Methyl chloride) | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Dibromochloromethane (Chlorodibromomethane) | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 1,2-Dibromoethane (EDB) | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Dibromomethane | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| trans-1,4-Dichloro-2-butene | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 1,2-Dichlorobenzene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |

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|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | |
| Michael Akins | | | | |

# LABORATORY BLANK QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1-Dichloroethane | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2-Dichloroethane | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| cis-1,2-Dichloroethene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| trans-1,2-Dichloroethene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1-Dichloroethene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2-Dichloropropane | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| cis-1,3-Dichloropropene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| trans-1,3-Dichloropropene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Ethylbenzene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Hexachlorobutadiene | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 2-Hexanone | 9041196 | | | ug/L | N/A | 10.0 | <10.0 | | | | | | | |
| Iodomethane | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Methylene chloride | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| 4-Methyl-2-pentanone (MIBK) | 9041196 | | | ug/L | N/A | 12.5 | <12.5 | | | | | | | L1 |
| Styrene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Tetrachloroethene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Toluene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,1-Trichloroethane | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,1,2-Trichloroethane | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Trichloroethene | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Trichlorofluoromethane | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| 1,2,3-Trichloropropane | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Vinyl Acetate | 9041196 | | | ug/L | N/A | 5.00 | <5.00 | | | | | | | |
| Vinyl chloride | 9041196 | | | ug/L | N/A | 1.00 | <1.00 | | | | | | | |
| Xylenes, Total | 9041196 | | | ug/L | N/A | 2.00 | <2.00 | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *9041196* | | | ug/L | | | | | *98* | | *80-120* | | | |
| *Surrogate: Dibromofluoromethane* | *9041196* | | | ug/L | | | | | *97* | | *80-120* | | | |
| *Surrogate: Toluene-d8* | *9041196* | | | ug/L | | | | | *101* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *9041196* | | | ug/L | | | | | *93* | | *80-120* | | | |

Burgess & Niple (Landfill)
5085 Reed Rd.
Columbus, OH 43220
Michael Akins

Work Order: DSD1152
Project: Wayne Reclamation & Recycling (Indiana)
Project Number: Wayne RRF- Columbia City, Indiana

Received: 04/24/09
Reported: 05/06/09 14:54

## LCS/LCS DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **General Chemistry Parameters** | | | | | | | | | | | | | | |
| Chemical Oxygen Demand | 9041051 | | 400 | mg/L | N/A | 50.0 | 417 | | 104 | | 90-110 | | | |
| Chloride | 9041102 | | 20.0 | mg/L | N/A | 1.00 | 20.7 | | 104 | | 90-110 | | | |
| Ammonia, Undistilled as N | 9041204 | | 0.500 | mg/L | N/A | 0.0500 | 0.535 | | 107 | | 90-110 | | | |
| **Total Metals** | | | | | | | | | | | | | | |
| Sodium | 9041047 | | 21.0 | mg/L | N/A | 1.00 | 21.2 | | 101 | | 80-120 | | | |
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | | | | | | |
| Acetone | 9041130 | | 50.0 | ug/L | N/A | 20.0 | 49.5 | | 99 | | 40-142 | | | |
| Acrylonitrile | 9041130 | | 100 | ug/L | N/A | 50.0 | 92.9 | | 93 | | 56-123 | | | |
| Benzene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 21.9 | | 110 | | 79-120 | | | |
| Bromochloromethane | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 20.4 | | 102 | | 77-122 | | | |
| Bromodichloromethane (Dichlorobromomethane) | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 20.5 | | 103 | | 76-121 | | | |
| Bromoform | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 20.0 | | 100 | | 69-120 | | | |
| Bromomethane (Methyl bromide) | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 19.0 | | 95 | | 64-120 | | | |
| 2-Butanone (MEK) | 9041130 | | 50.0 | ug/L | N/A | 12.5 | 66.1 | | 132 | | 69-121 | | | L1 |
| Carbon disulfide | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 18.9 | | 95 | | 75-121 | | | |
| Carbon tetrachloride | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 19.2 | | 96 | | 70-129 | | | |
| Chlorobenzene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 20.2 | | 101 | | 78-120 | | | |
| Chloroethane | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 17.5 | | 87 | | 67-120 | | | |
| Chloroform | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 20.6 | | 103 | | 77-120 | | | |
| Chloromethane (Methyl chloride) | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 18.1 | | 90 | | 58-120 | | | |
| Dibromochloromethane (Chlorodibromomethane) | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 20.5 | | 102 | | 76-123 | | | |
| 1,2-Dibromo-3-chloropropane | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 21.6 | | 108 | | 68-135 | | | |
| 1,2-Dibromoethane (EDB) | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 21.7 | | 108 | | 74-120 | | | |
| Dibromomethane | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 21.8 | | 109 | | 79-120 | | | |
| trans-1,4-Dichloro-2-butene | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 13.1 | | 66 | | 35-128 | | | |
| 1,2-Dichlorobenzene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 19.1 | | 95 | | 78-123 | | | |
| 1,4-Dichlorobenzene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 18.2 | | 91 | | 74-120 | | | |
| 1,1-Dichloroethane | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 20.5 | | 102 | | 79-120 | | | |
| 1,2-Dichloroethane | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 19.5 | | 98 | | 75-120 | | | |
| cis-1,2-Dichloroethene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 21.2 | | 106 | | 80-120 | | | |
| trans-1,2-Dichloroethene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 18.8 | | 94 | | 79-120 | | | |
| 1,1-Dichloroethene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 17.3 | | 87 | | 71-121 | | | |
| 1,2-Dichloropropane | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 22.3 | | 112 | | 80-120 | | | |
| cis-1,3-Dichloropropene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 22.1 | | 111 | | 80-120 | | | |
| trans-1,3-Dichloropropene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 21.1 | | 106 | | 74-120 | | | |
| Ethylbenzene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 20.8 | | 104 | | 79-120 | | | |
| Hexachlorobutadiene | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 23.0 | | 115 | | 74-145 | | | |
| 2-Hexanone | 9041130 | | 50.0 | ug/L | N/A | 10.0 | 62.5 | | 125 | | 59-129 | | | |
| Iodomethane | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 16.7 | | 84 | | 53-120 | | | |
| Methylene chloride | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 19.5 | | 98 | | 76-120 | | | |
| 4-Methyl-2-pentanone (MIBK) | 9041130 | | 50.0 | ug/L | N/A | 12.5 | 60.6 | | 121 | | 69-122 | | | |
| Styrene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 21.6 | | 108 | | 76-120 | | | |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | |
| Michael Akins | | | | |

## LCS/LCS DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 19.7 | | 98 | | 77-121 | | | |
| 1,1,2,2-Tetrachloroethane | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 22.1 | | 111 | | 74-120 | | | |
| Tetrachloroethene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 20.9 | | 105 | | 62-128 | | | |
| Toluene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 21.6 | | 108 | | 79-120 | | | |
| 1,1,1-Trichloroethane | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 19.8 | | 99 | | 74-121 | | | |
| 1,1,2-Trichloroethane | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 22.0 | | 110 | | 75-120 | | | |
| Trichloroethene | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 20.2 | | 101 | | 77-120 | | | |
| Trichlorofluoromethane | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 16.6 | | 83 | | 71-136 | | | |
| 1,2,3-Trichloropropane | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 22.4 | | 112 | | 74-120 | | | |
| Vinyl Acetate | 9041130 | | 20.0 | ug/L | N/A | 5.00 | 20.3 | | 101 | | 64-129 | | | |
| Vinyl chloride | 9041130 | | 20.0 | ug/L | N/A | 1.00 | 17.2 | | 86 | | 65-126 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *9041130* | | | ug/L | | | | | *92* | | *80-120* | | | |
| *Surrogate: Dibromofluoromethane* | *9041130* | | | ug/L | | | | | *95* | | *80-120* | | | |
| *Surrogate: Toluene-d8* | *9041130* | | | ug/L | | | | | *101* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *9041130* | | | ug/L | | | | | *103* | | *80-120* | | | |
| Acetone | 9041188 | | 50.0 | ug/L | N/A | 20.0 | 44.8 | | 90 | | 40-142 | | | |
| Acrylonitrile | 9041188 | | 100 | ug/L | N/A | 50.0 | 95.1 | | 95 | | 56-123 | | | |
| Benzene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 22.2 | | 111 | | 79-120 | | | |
| Bromochloromethane | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.3 | | 102 | | 77-122 | | | |
| Bromodichloromethane (Dichlorobromomethane) | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.9 | | 104 | | 76-121 | | | |
| Bromoform | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 19.5 | | 98 | | 69-120 | | | |
| Bromomethane (Methyl bromide) | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 18.7 | | 94 | | 64-120 | | | |
| 2-Butanone (MEK) | 9041188 | | 50.0 | ug/L | N/A | 12.5 | 56.7 | | 113 | | 69-121 | | | |
| Carbon disulfide | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.1 | | 101 | | 75-121 | | | |
| Carbon tetrachloride | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 19.7 | | 99 | | 70-129 | | | |
| Chlorobenzene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.3 | | 102 | | 78-120 | | | |
| Chloroethane | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 18.5 | | 92 | | 67-120 | | | |
| Chloroform | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.8 | | 104 | | 77-120 | | | |
| Chloromethane (Methyl chloride) | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 18.4 | | 92 | | 58-120 | | | |
| Dibromochloromethane (Chlorodibromomethane) | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.1 | | 100 | | 76-123 | | | |
| 1,2-Dibromo-3-chloropropane | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 20.6 | | 103 | | 68-135 | | | |
| 1,2-Dibromoethane (EDB) | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 20.9 | | 104 | | 74-120 | | | |
| Dibromomethane | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 21.8 | | 109 | | 79-120 | | | |
| trans-1,4-Dichloro-2-butene | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 11.9 | | 59 | | 35-128 | | | |
| 1,2-Dichlorobenzene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 19.2 | | 96 | | 78-123 | | | |
| 1,4-Dichlorobenzene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 18.8 | | 94 | | 74-120 | | | |
| 1,1-Dichloroethane | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 21.2 | | 106 | | 79-120 | | | |
| 1,2-Dichloroethane | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.5 | | 102 | | 75-120 | | | |
| cis-1,2-Dichloroethene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 21.2 | | 106 | | 80-120 | | | |
| trans-1,2-Dichloroethene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 19.1 | | 96 | | 79-120 | | | |
| 1,1-Dichloroethene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 18.1 | | 90 | | 71-121 | | | |
| 1,2-Dichloropropane | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 22.9 | | 115 | | 80-120 | | | |
| cis-1,3-Dichloropropene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 21.9 | | 110 | | 80-120 | | | |
| trans-1,3-Dichloropropene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.9 | | 104 | | 74-120 | | | |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | |
| Michael Akins | | | | |

## LCS/LCS DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | | | | | | |
| Ethylbenzene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.6 | | 103 | | 79-120 | | | |
| Hexachlorobutadiene | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 23.5 | | 117 | | 74-145 | | | |
| 2-Hexanone | 9041188 | | 50.0 | ug/L | N/A | 10.0 | 55.7 | | 111 | | 59-129 | | | |
| Iodomethane | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 16.7 | | 84 | | 53-120 | | | |
| Methylene chloride | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 21.3 | | 107 | | 76-120 | | | |
| 4-Methyl-2-pentanone (MIBK) | 9041188 | | 50.0 | ug/L | N/A | 12.5 | 54.7 | | 109 | | 69-122 | | | |
| Styrene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.2 | | 101 | | 76-120 | | | |
| 1,1,1,2-Tetrachloroethane | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 19.7 | | 99 | | 77-121 | | | |
| 1,1,2,2-Tetrachloroethane | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 21.0 | | 105 | | 74-120 | | | |
| Tetrachloroethene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 19.9 | | 100 | | 62-128 | | | |
| Toluene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 21.5 | | 108 | | 79-120 | | | |
| 1,1,1-Trichloroethane | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.1 | | 100 | | 74-121 | | | |
| 1,1,2-Trichloroethane | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 21.2 | | 106 | | 75-120 | | | |
| Trichloroethene | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 20.4 | | 102 | | 77-120 | | | |
| Trichlorofluoromethane | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 17.6 | | 88 | | 71-136 | | | |
| 1,2,3-Trichloropropane | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 21.2 | | 106 | | 74-120 | | | |
| Vinyl Acetate | 9041188 | | 20.0 | ug/L | N/A | 5.00 | 18.9 | | 95 | | 64-129 | | | |
| Vinyl chloride | 9041188 | | 20.0 | ug/L | N/A | 1.00 | 17.6 | | 88 | | 65-126 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *9041188* | | | ug/L | | | | | *94* | | *80-120* | | | |
| *Surrogate: Dibromofluoromethane* | *9041188* | | | ug/L | | | | | *96* | | *80-120* | | | |
| *Surrogate: Toluene-d8* | *9041188* | | | ug/L | | | | | *101* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *9041188* | | | ug/L | | | | | *102* | | *80-120* | | | |
| Acetone | 9041196 | | 50.0 | ug/L | N/A | 20.0 | 50.8 | | 102 | | 40-142 | | | |
| Acrylonitrile | 9041196 | | 100 | ug/L | N/A | 50.0 | 99.9 | | 100 | | 56-123 | | | |
| Benzene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.7 | | 99 | | 79-120 | | | |
| Bromochloromethane | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 20.0 | | 100 | | 77-122 | | | |
| Bromodichloromethane (Dichlorobromomethane) | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.0 | | 95 | | 76-121 | | | |
| Bromoform | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.6 | | 98 | | 69-120 | | | |
| Bromomethane (Methyl bromide) | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 19.2 | | 96 | | 64-120 | | | |
| 2-Butanone (MEK) | 9041196 | | 50.0 | ug/L | N/A | 12.5 | 52.8 | | 106 | | 69-121 | | | |
| Carbon disulfide | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.6 | | 98 | | 75-121 | | | |
| Carbon tetrachloride | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 17.5 | | 88 | | 70-129 | | | |
| Chlorobenzene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.9 | | 99 | | 78-120 | | | |
| Chloroethane | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 17.7 | | 89 | | 67-120 | | | |
| Chloroform | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.1 | | 96 | | 77-120 | | | |
| Chloromethane (Methyl chloride) | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 17.2 | | 86 | | 58-120 | | | |
| Dibromochloromethane (Chlorodibromomethane) | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 20.3 | | 102 | | 76-123 | | | |
| 1,2-Dibromo-3-chloropropane | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 19.8 | | 99 | | 68-135 | | | |
| 1,2-Dibromoethane (EDB) | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 20.1 | | 100 | | 74-120 | | | |
| Dibromomethane | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 20.0 | | 100 | | 79-120 | | | |
| trans-1,4-Dichloro-2-butene | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 14.1 | | 70 | | 35-128 | | | |
| 1,2-Dichlorobenzene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 20.9 | | 105 | | 78-123 | | | |
| 1,4-Dichlorobenzene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 20.0 | | 100 | | 74-120 | | | |
| 1,1-Dichloroethane | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.0 | | 95 | | 79-120 | | | |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | |
| Michael Akins | | | | |

## LCS/LCS DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 18.9 | | 95 | | 75-120 | | | |
| cis-1,2-Dichloroethene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.0 | | 95 | | 80-120 | | | |
| trans-1,2-Dichloroethene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 18.4 | | 92 | | 79-120 | | | |
| 1,1-Dichloroethene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 17.9 | | 90 | | 71-121 | | | |
| 1,2-Dichloropropane | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.5 | | 98 | | 80-120 | | | |
| cis-1,3-Dichloropropene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.8 | | 99 | | 80-120 | | | |
| trans-1,3-Dichloropropene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 21.5 | | 108 | | 74-120 | | | |
| Ethylbenzene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.6 | | 98 | | 79-120 | | | |
| Hexachlorobutadiene | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 19.0 | | 95 | | 74-145 | | | |
| 2-Hexanone | 9041196 | | 50.0 | ug/L | N/A | 10.0 | 61.2 | | 122 | | 59-129 | | | |
| Iodomethane | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 14.7 | | 74 | | 53-120 | | | |
| Methylene chloride | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 19.6 | | 98 | | 76-120 | | | |
| 4-Methyl-2-pentanone (MIBK) | 9041196 | | 50.0 | ug/L | N/A | 12.5 | 61.5 | | 123 | | 69-122 | | | L1 |
| Styrene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.6 | | 98 | | 76-120 | | | |
| 1,1,1,2-Tetrachloroethane | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.9 | | 100 | | 77-121 | | | |
| 1,1,2,2-Tetrachloroethane | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 22.5 | | 112 | | 74-120 | | | |
| Tetrachloroethene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 19.1 | | 96 | | 62-128 | | | |
| Toluene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 20.6 | | 103 | | 79-120 | | | |
| 1,1,1-Trichloroethane | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 18.5 | | 92 | | 74-121 | | | |
| 1,1,2-Trichloroethane | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 21.3 | | 106 | | 75-120 | | | |
| Trichloroethene | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 18.8 | | 94 | | 77-120 | | | |
| Trichlorofluoromethane | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 16.3 | | 82 | | 71-136 | | | |
| 1,2,3-Trichloropropane | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 20.5 | | 102 | | 74-120 | | | |
| Vinyl Acetate | 9041196 | | 20.0 | ug/L | N/A | 5.00 | 18.2 | | 91 | | 64-129 | | | |
| Vinyl chloride | 9041196 | | 20.0 | ug/L | N/A | 1.00 | 16.0 | | 80 | | 65-126 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *9041196* | | | ug/L | | | | | *103* | | *80-120* | | | |
| *Surrogate: Dibromofluoromethane* | *9041196* | | | ug/L | | | | | *97* | | *80-120* | | | |
| *Surrogate: Toluene-d8* | *9041196* | | | ug/L | | | | | *103* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *9041196* | | | ug/L | | | | | *94* | | *80-120* | | | |

| | | | | | |
|---|---|---|---|---|---|
| Burgess & Niple (Landfill) | Work Order: | DSD1152 | | Received: | 04/24/09 |
| 5085 Reed Rd. | Project: | Wayne Reclamation & Recycling (Indiana) | | Reported: | 05/06/09 14:54 |
| Columbus, OH 43220 | Project Number: | Wayne RRF- Columbia City, Indiana | | | |
| Michael Akins | | | | | |

## CERTIFICATION SUMMARY

**Subcontracted Laboratories**

Client Supplied and Field Data

4738 Gateway Circle - Dayton, OH 45440

Method Performed: NA

Samples: DSD1152-01, DSD1152-02, DSD1152-03, DSD1152-04

*Any abnormalities or departures from sample acceptance policy shall be documented on the Chain of Custody and/or Case Narrative included with this report.*

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

*Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) .*

## DATA QUALIFIERS AND DEFINITIONS

| | |
|---|---|
| **L1** | Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above acceptance limits. |
| **M** | The MS, MSD, and/or RPD are outside of acceptance limits due to matrix interference. Please see Blank Spike (LCS). |

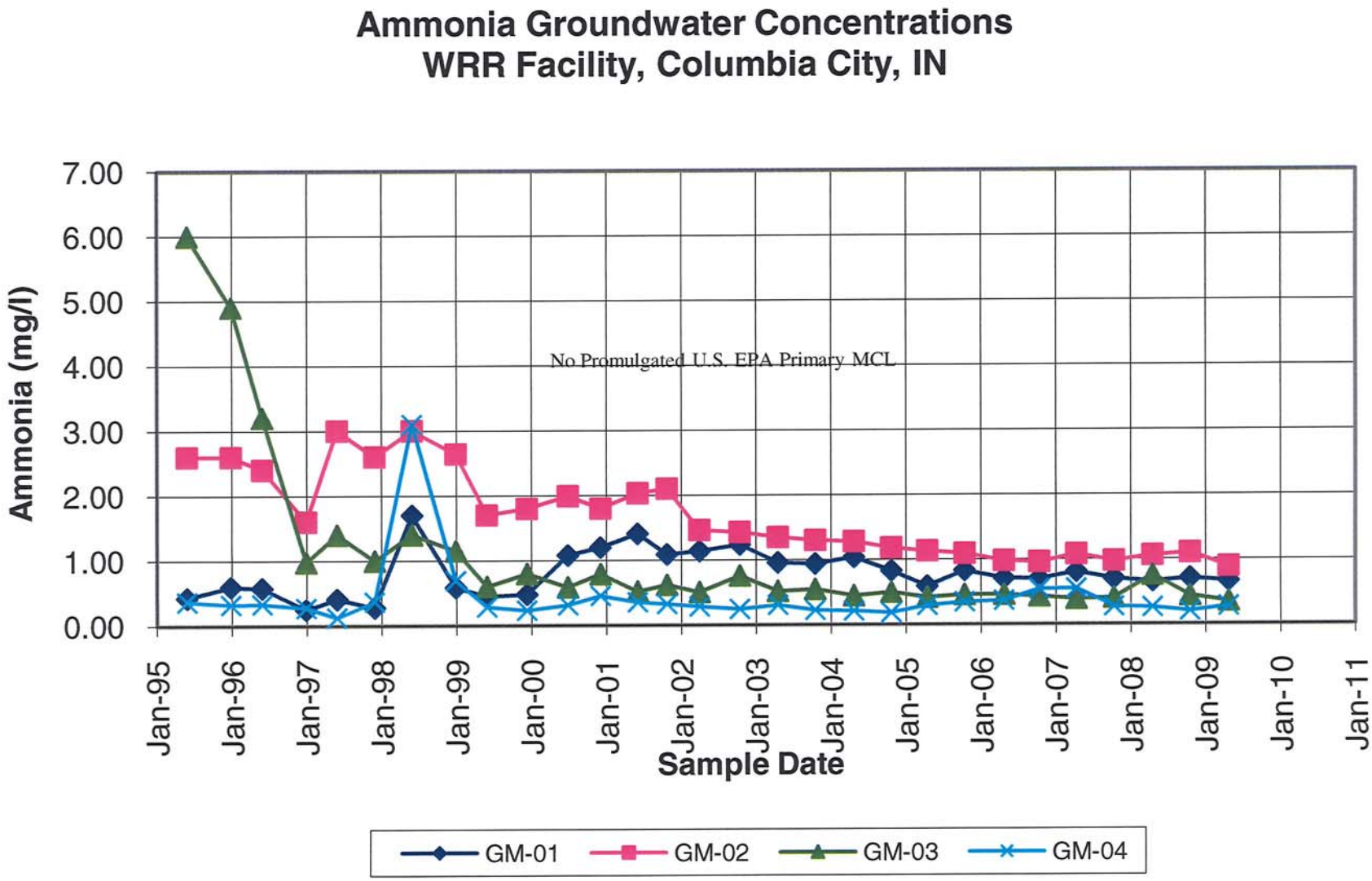
## ADDITIONAL COMMENTS

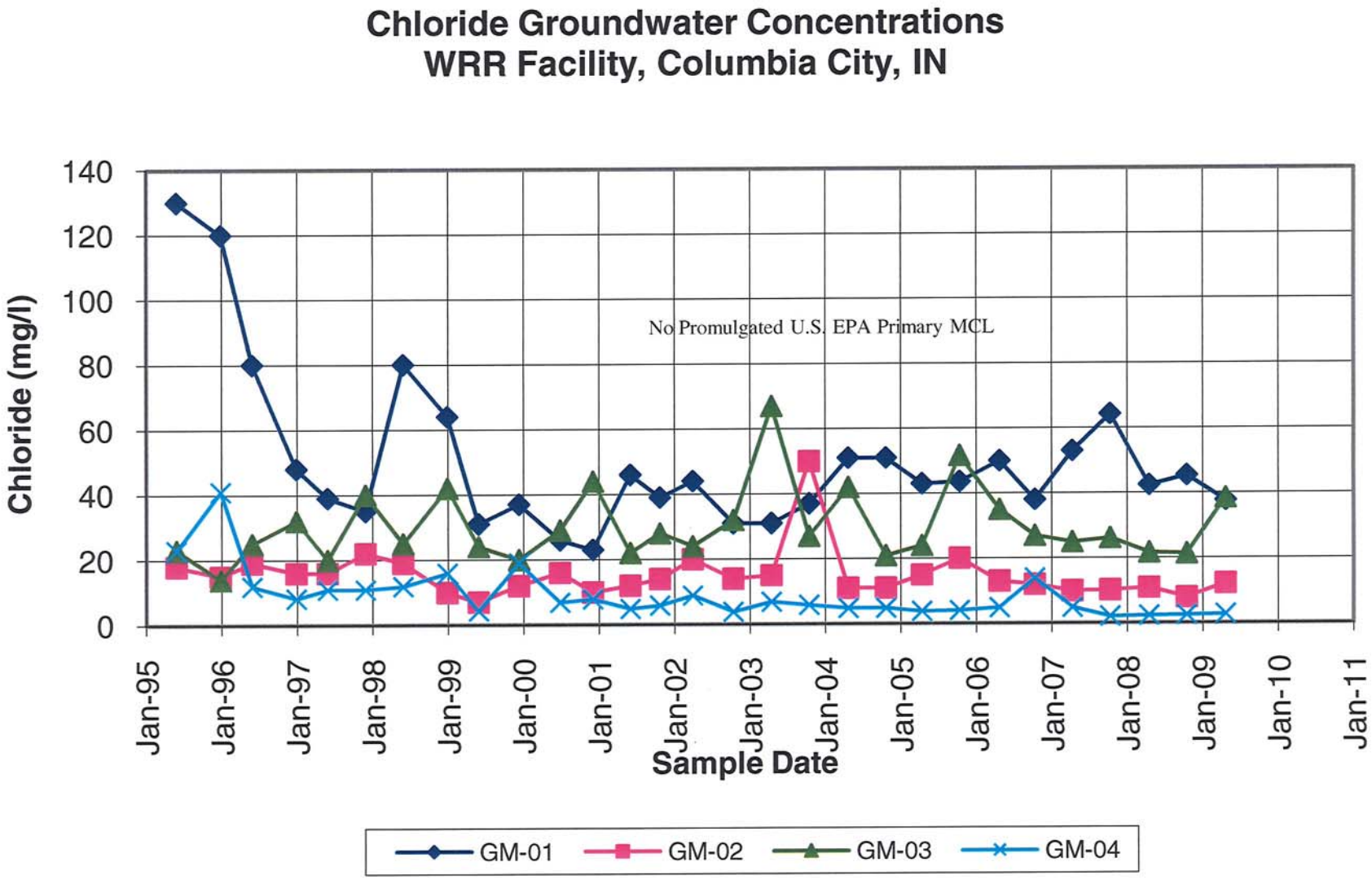
## ANALYSIS LOCATIONS

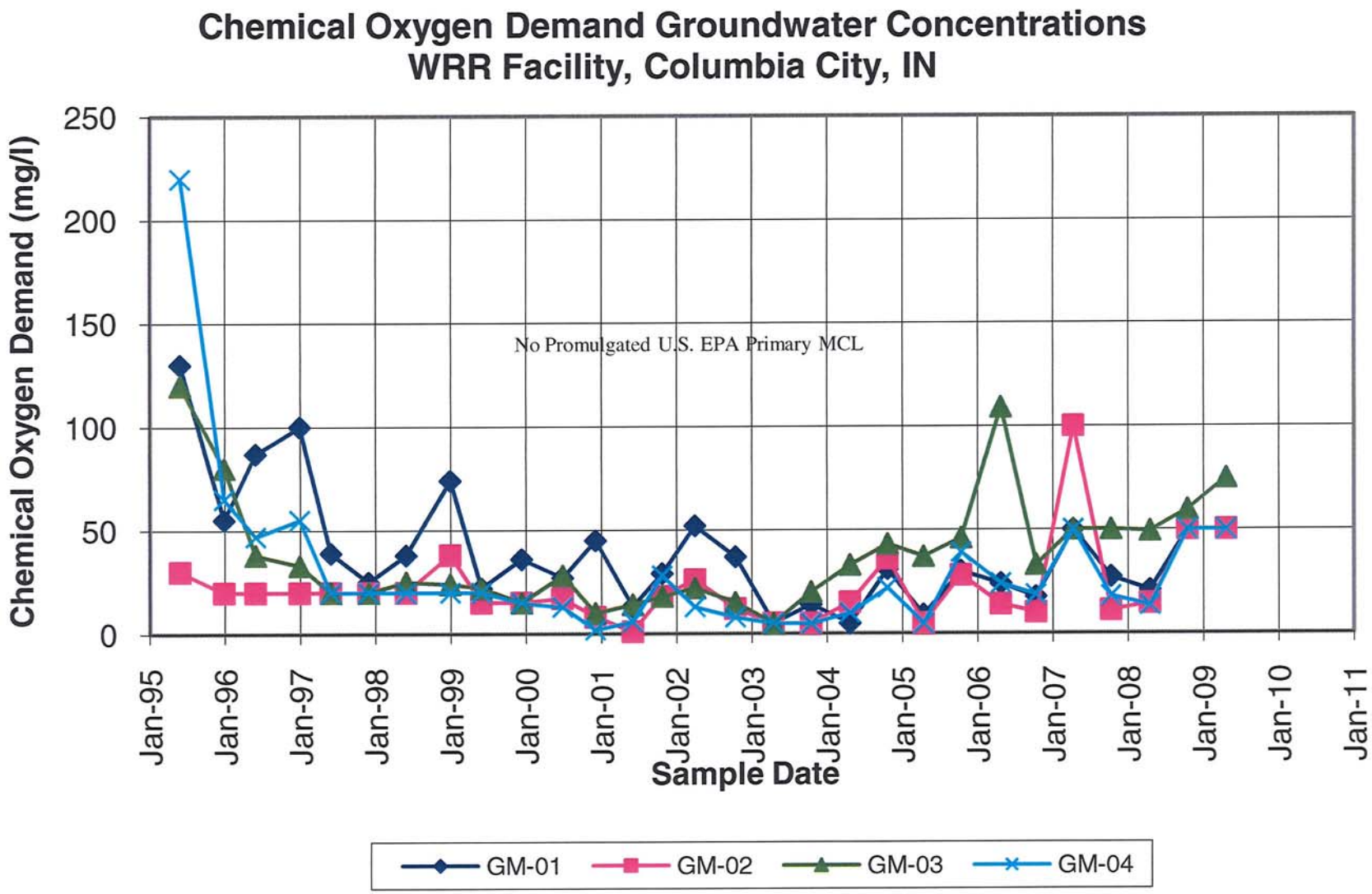
The analyses listed below were analyzed in satellite facilities

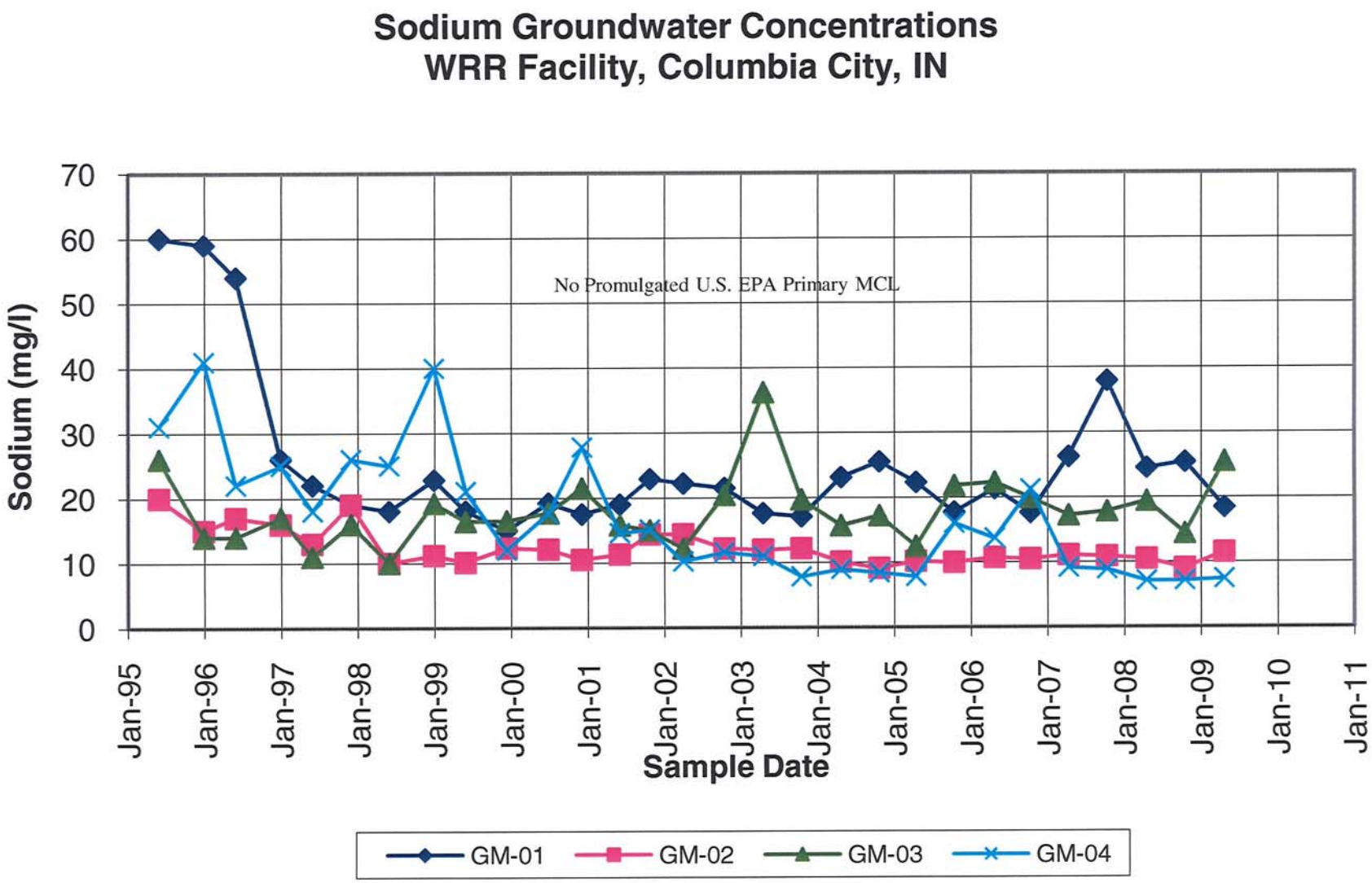
# ATTACHMENT 3

# TIME-VERSUS-CONCENTRATION PLOTS

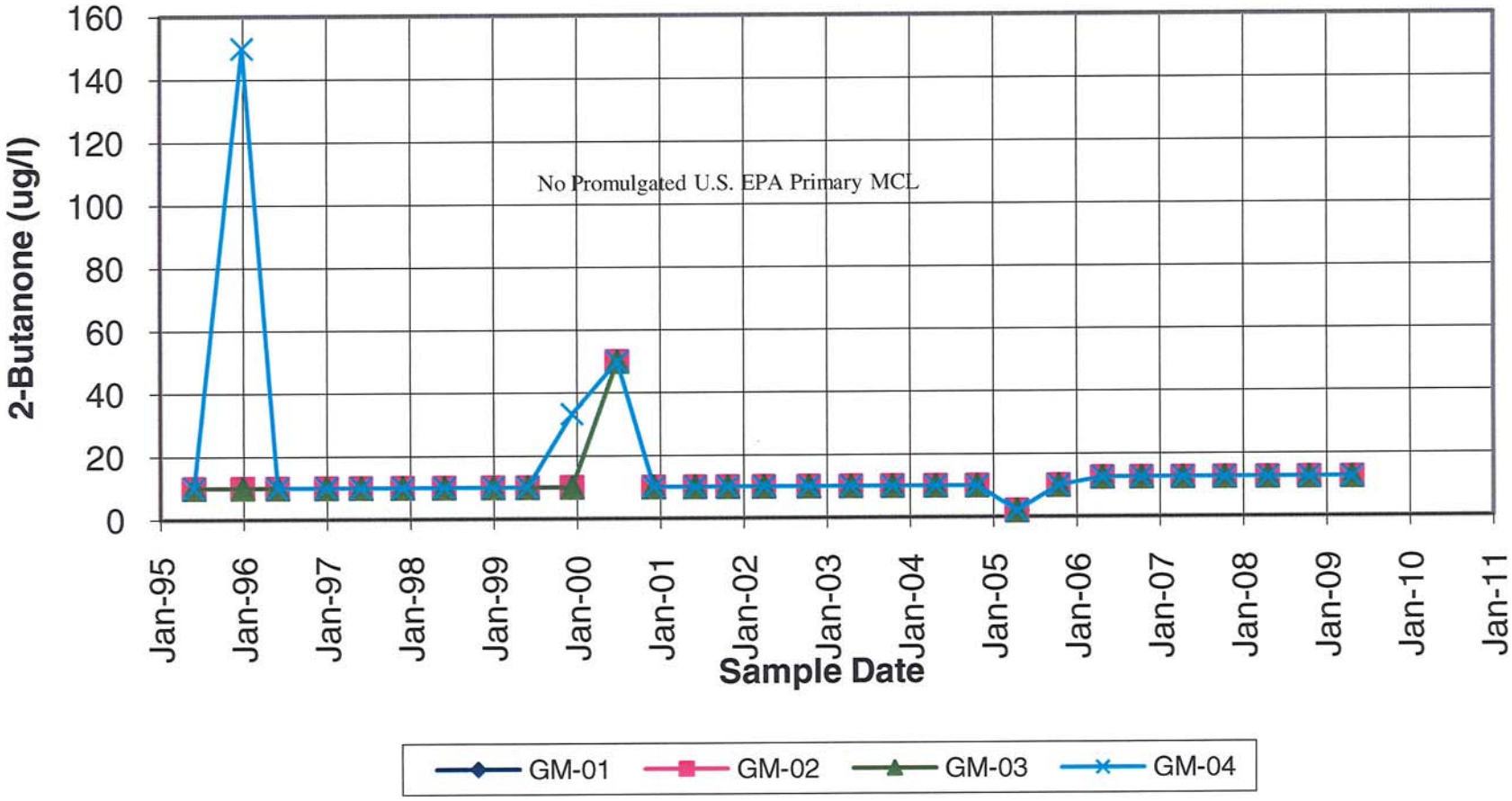

Ammonia Groundwater Concentrations
WRR Facility, Columbia City, IN
Ammonia (mg/l)
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
No Promulgated U.S. EPA Primary MCL
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Sample Date
GM-01
GM-02
GM-03
GM-04


Chloride Groundwater Concentrations
WRR Facility, Columbia City, IN
Chloride (mg/l)
140
120
100
80
60
40
20
0
No Promulgated U.S. EPA Primary MCL
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Sample Date
GM-01
GM-02
GM-03
GM-04

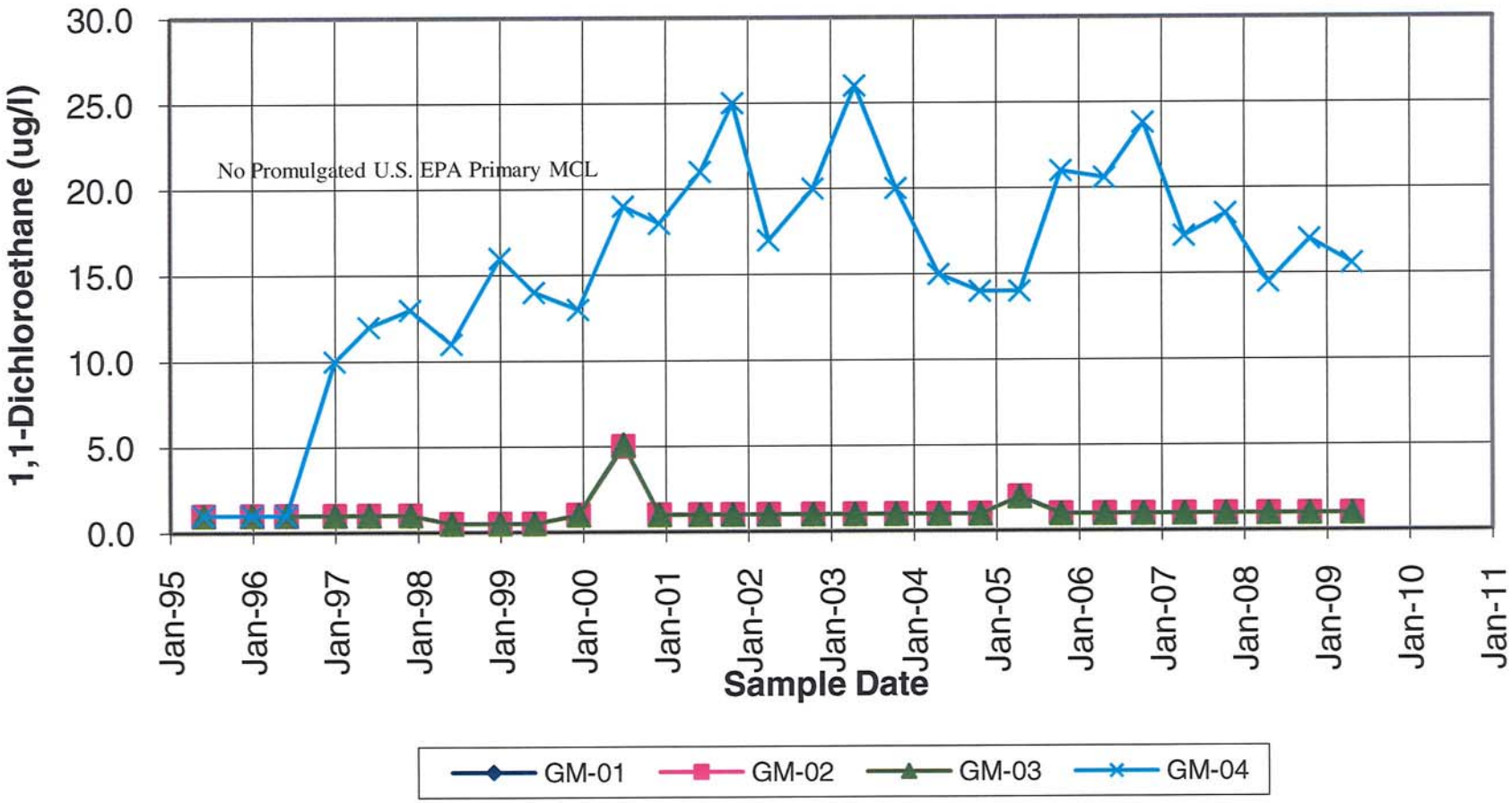

Chemical Oxygen Demand Groundwater Concentrations
WRR Facility, Columbia City, IN
Chemical Oxygen Demand (mg/l)
250
200
150
100
50
0
No Promulgated U.S. EPA Primary MCL
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Sample Date
GM-01
GM-02
GM-03
GM-04


Sodium Groundwater Concentrations
WRR Facility, Columbia City, IN
Sodium (mg/l)
70
60
50
40
30
20
10
0
No Promulgated U.S. EPA Primary MCL
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Sample Date
GM-01
GM-02
GM-03
GM-04

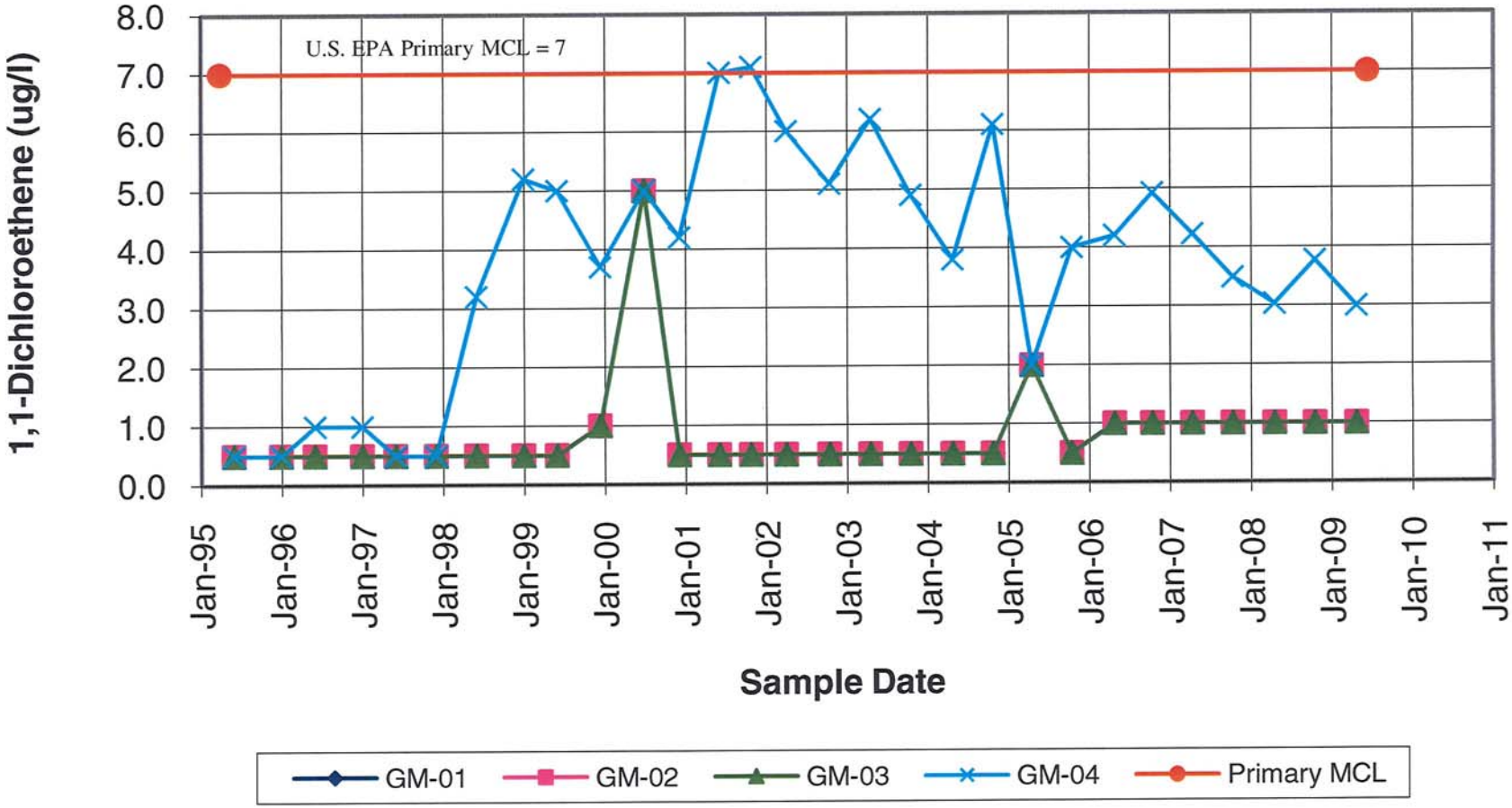
## 2-Butanone (MEK) Groundwater Concentrations
## WRR Facility, Columbia City, IN

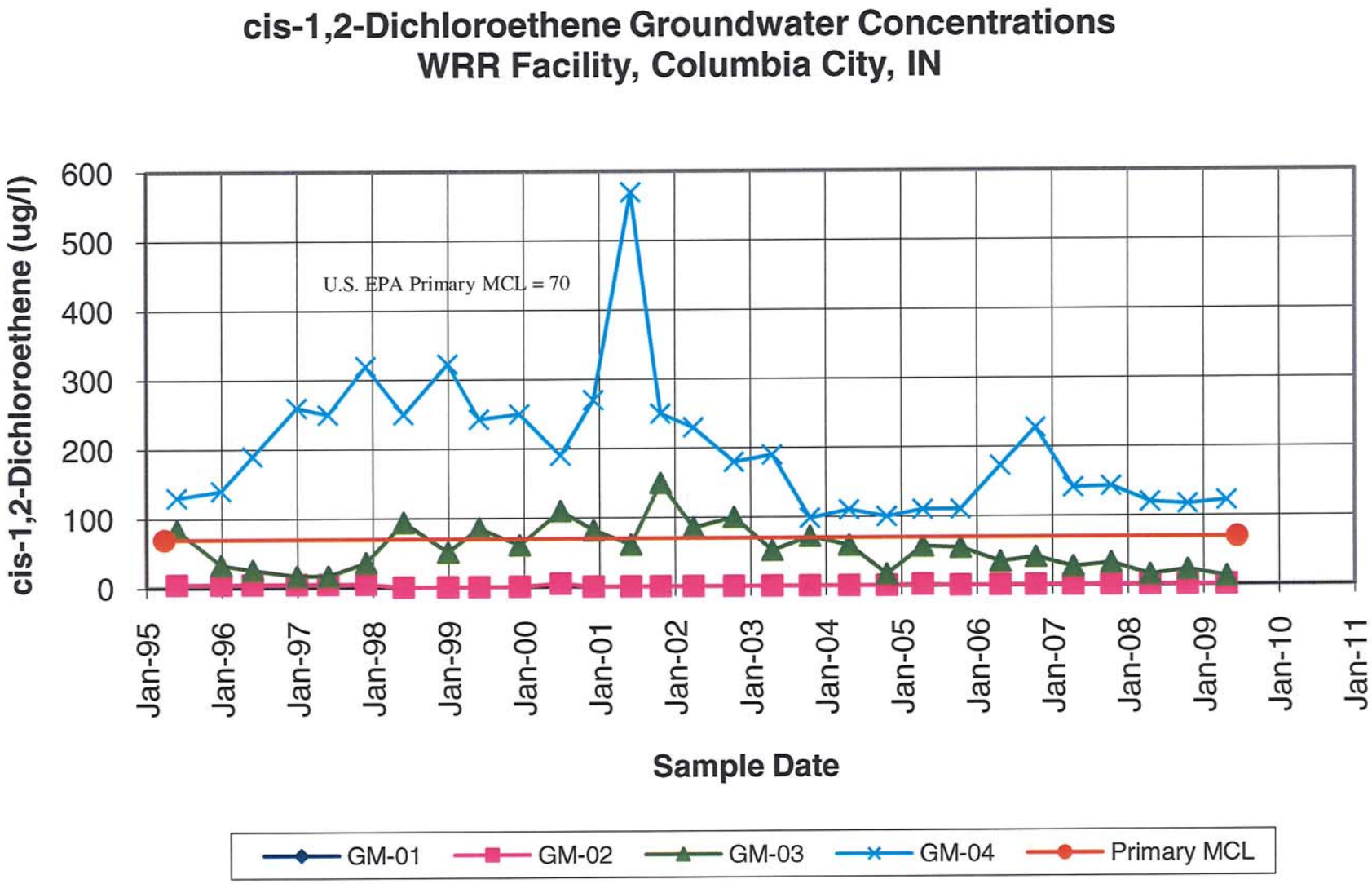


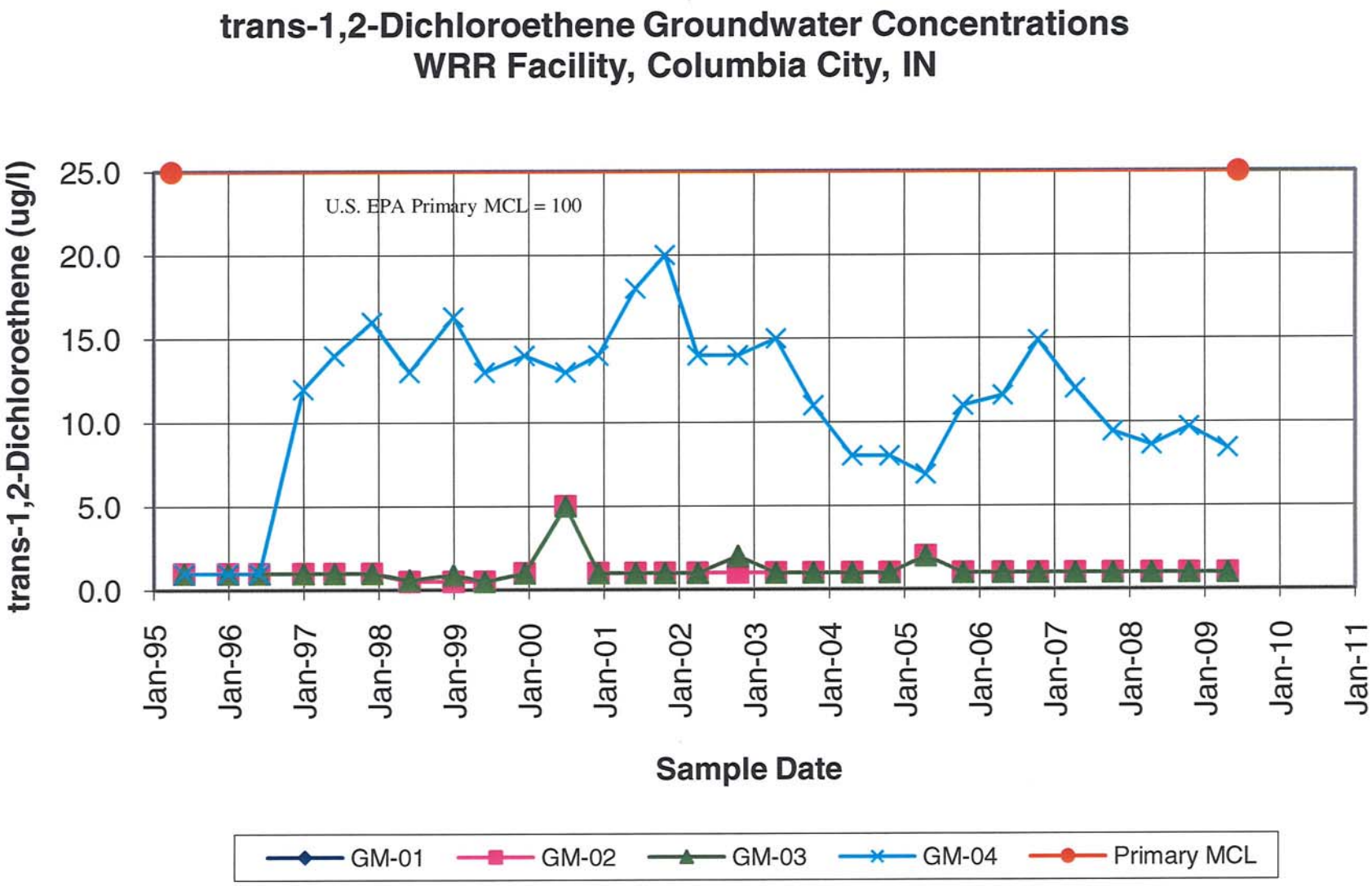
# 1,1-Dichloroethane Groundwater Concentrations
# WRR Facility, Columbia City, IN



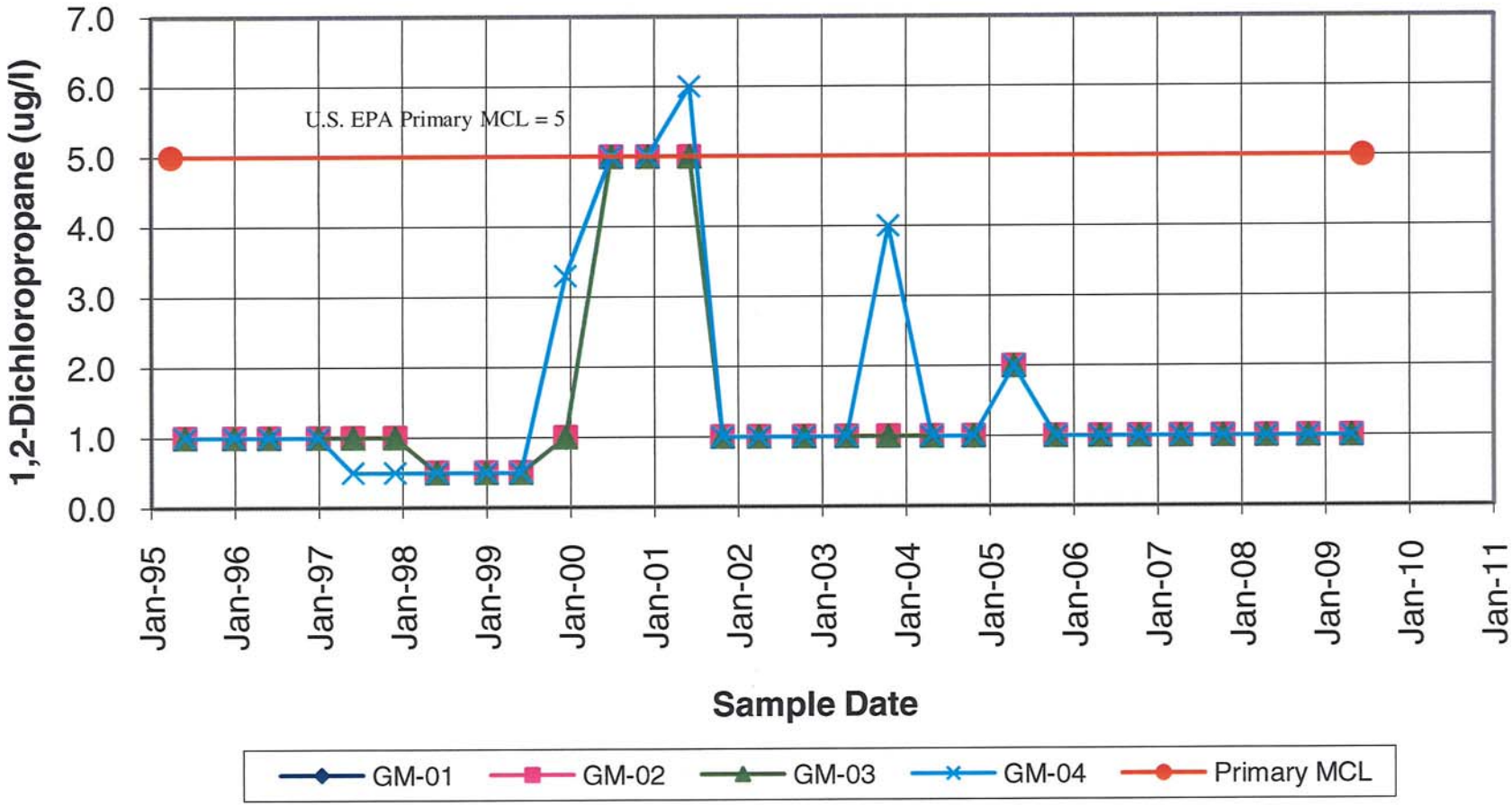
# 1,1-Dichloroethene Groundwater Concentrations
## WRR Facility, Columbia City, IN



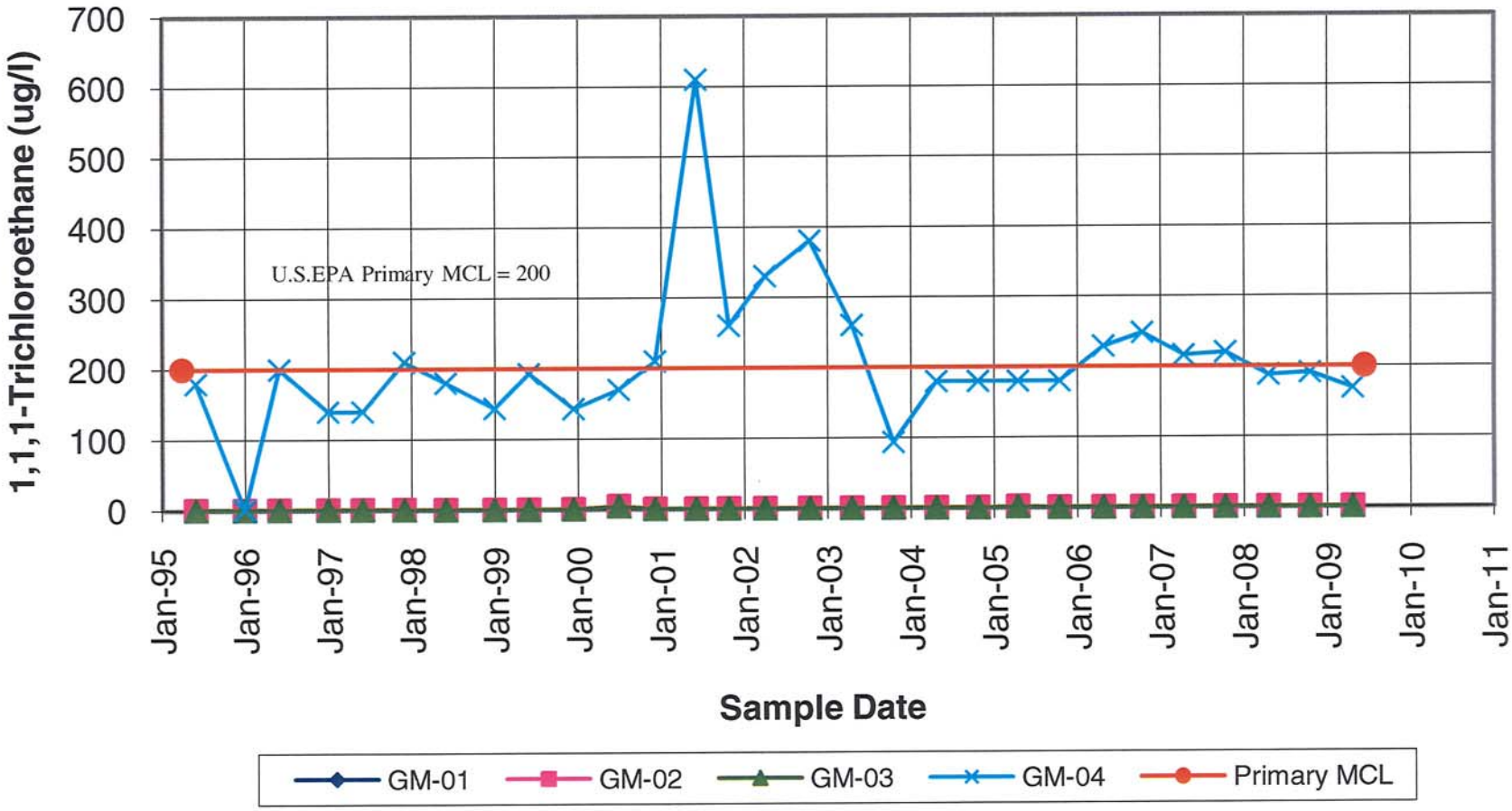

cis-1,2-Dichloroethene Groundwater Concentrations
WRR Facility, Columbia City, IN
cis-1,2-Dichloroethene (ug/l)
600
500
400
300
200
100
0
U.S. EPA Primary MCL = 70
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Sample Date
GM-01
GM-02
GM-03
GM-04
Primary MCL

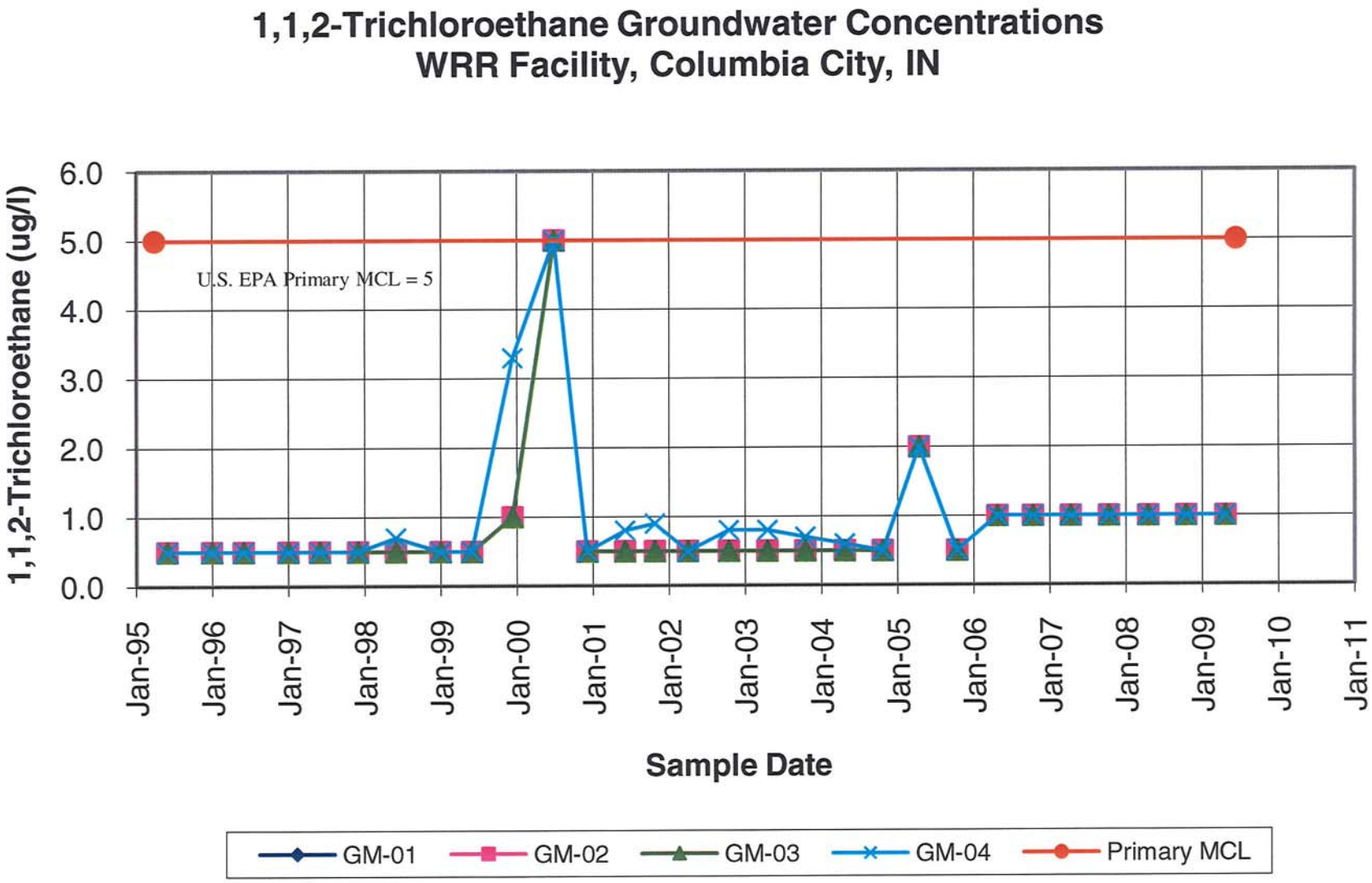

trans-1,2-Dichloroethene Groundwater Concentrations
WRR Facility, Columbia City, IN
trans-1,2-Dichloroethene (ug/l)
25.0
20.0
15.0
10.0
5.0
0.0
U.S. EPA Primary MCL = 100
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Sample Date
GM-01
GM-02
GM-03
GM-04
Primary MCL

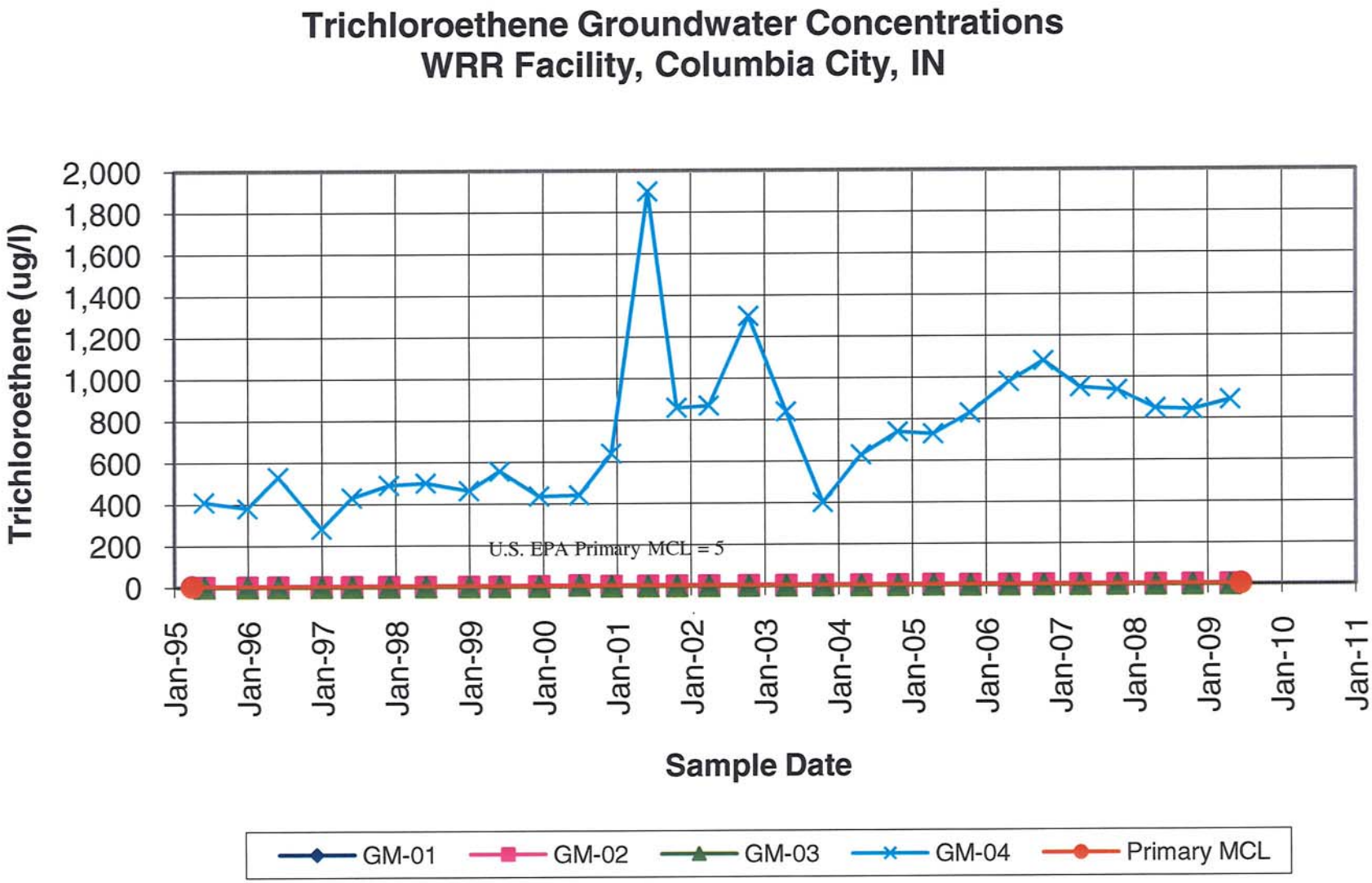
## 1,2-Dichloropropane Groundwater Concentrations
## WRR Facility, Columbia City, IN

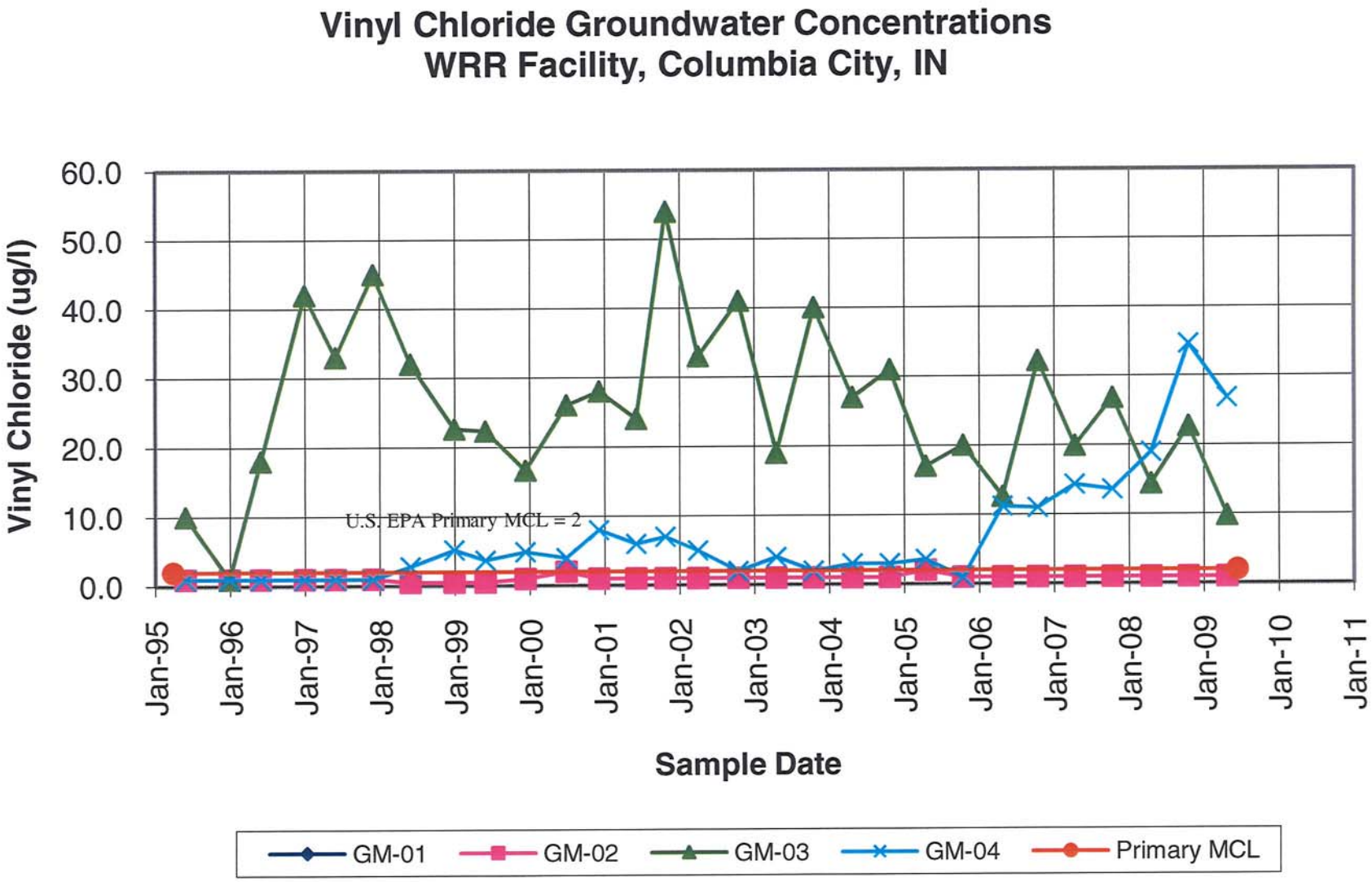


# 1,1,1-Trichloroethane Groundwater Concentrations
## WRR Facility, Columbia City, IN




1,1,2-Trichloroethane Groundwater Concentrations
WRR Facility, Columbia City, IN
1,1,2-Trichloroethane (ug/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
U.S. EPA Primary MCL = 5
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Sample Date
GM-01
GM-02
GM-03
GM-04
Primary MCL


Trichloroethene Groundwater Concentrations
WRR Facility, Columbia City, IN
Trichloroethene (ug/l)
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
U.S. EPA Primary MCL = 5
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Sample Date
GM-01
GM-02
GM-03
GM-04
Primary MCL


Vinyl Chloride Groundwater Concentrations
WRR Facility, Columbia City, IN
Vinyl Chloride (ug/l)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
U.S. EPA Primary MCL = 2
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Sample Date
GM-01
GM-02
GM-03
GM-04
Primary MCL

# APPENDIX B

# DATA VALIDATION REPORT

**APPENDIX B**

**DATA VALIDATION REPORT**
**SEMI-ANNUAL PROGRESS REPORT 28**

**January through June 2009**
**Wayne Reclamation & Recycling**

Groundwater, air, and associated quality control (QC) samples were collected from the Wayne Reclamation & Recycling Site in Columbia City, Indiana between January and June 2009. The water samples were analyzed by Pace Analytical Services, Inc. (Pace) of Indianapolis, Indiana for one or more of the following parameters: volatile organic compounds (VOCs) by United States Environmental Protection Agency (U.S. EPA) Method SW-846 8260B; dissolved metals (arsenic, barium, cadmium, chromium, lead, nickel, and zinc) by U.S. EPA Method SW-846 6010B; and total cyanide by U.S. EPA Method 335.3. Additionally, air samples were analyzed for VOCs by Pace of Minneapolis, Minnesota by U.S. EPA Method TO-14.

Laboratory analytical results were evaluated in accordance with the U.S. EPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Organic Data Review (October 1999), U.S. EPA CLP NFG for Inorganic Data Review (October 2004), and the laboratory-specific quality control parameters for each analytical methods. The analytical data were reviewed and qualified based on the results of the data evaluation parameters and/or the QC sample results provided by the laboratory.

The following summarizes the review of the analytical data that did not meet the QC criteria per sample delivery group (SDG):

**Air Samples**

SDG 1088335 No comments

SDG 1089304 The laboratory indicated that the cis-1,2,-dicloroethane (DCE) result for sample AIREFF exceeded the calibration range. Therefore, the cis-1,2,-DCE result for sample AIREFF is considered estimated (J).

The laboratory control sample (LCS) percent recovery (%R) for TCE was 133%, which slightly exceeded the quality control limits of 67 to 132%. TCE was detected in the sample; however, based on professional judgment, qualification was not necessary for sample AIREFF.

SDG 1092202 The laboratory indicated that the cis-1,2,-DCE result for sample AIREFF exceeded the calibration range. Therefore, the cis-1,2,-DCE result for sample AIREFF is considered estimated (J).

The LCS %Rs for 1,2,4-TMB (175%), 1,3-DCB (146%), carbon tetrachloride (133%), chloroform (160%), and hexachloro-1,3-butadiene (182%) were above the quality control criteria. These compounds were not detected in the investigative results; therefore, qualifiers were not necessary.

SDG 1093565 The LCS %R for cis-1,2-DCE (61%) was slightly below the quality control criteria (62-125%). This compound was detected in the investigative samples; however, based on professional judgment, qualification was not necessary.

SDG 1095229 The laboratory indicated that the cis-1,2,-DCE result for sample AIREFF exceeded the calibration range. Therefore, the cis-1,2,-DCE result for sample AIREFF is considered estimated (J).

SDG 1097198 The laboratory indicated that the cis-1,2,-DCE result for sample AIREFF exceeded the calibration range. Therefore, the cis-1,2,-DCE result for sample AIREFF is considered estimated (J).

**Groundwater System Samples**

SDG 5022797 The LCS %R for acetone (187%) exceeded the quality control criteria (30-170%). This compound was not detected in the investigative samples; therefore, qualification was not necessary.

SDG 5023214 1,2,3-TCB and 1,2,4-TCB were detected in the method blank sample. These compounds were not detected in the investigative samples.

The LCS %Rs for acrolein (14%) and tetrachloroethene (48%) were below the quality control criteria. These compounds were not detected in the investigative samples. Consequently, the

non-detect results could have been potentially biased low and should be considered estimated (J).

SDG 5024699 No comments

SDG 5025487 Sample GWINF was used for MS/MSD analysis. Although the MS/MSD %Rs were within the quality control criteria, the relative percent differences for a majority of the compounds exceeded the control limit of 20%. The MSD %Rs were generally half of the MS %Rs. Based on professional judgment, the results for sample GWINF were should be considered estimated (J). Sample GWEFF was also used for MS/MSD analyses. The results for these MS/MSD analyses were acceptable.

SDG 5026228 Naphthalene was detected in the method blank sample. This compound was not detected in the investigative samples.

The LCS %R for acetone (209%) exceeded the quality control criteria (30-170%). This compound was not detected in the investigative samples; therefore, qualification was not necessary. The LCS %R for acrolein (20%) was below the quality control criteria (30-170%). Consequently, the non-detect results could have been potentially biased low and should be considered estimated (J).

SDG 5027196 No comments

**Groundwater Monitoring Well Samples**

SDG 5025490 Sample MW-9S was used for matrix spike/matrix spike duplicate (MS/MSD) analysis. The MS and/or MSD %R for acrolein, bromoform, and cis-1,2-DCE were outside the quality control limits. Acrolein and bromoform were not detected in the investigative samples and are not considered compound of concern. Therefore, qualification was not necessary. For cis-1,2-DCE, the sample concentration was greater than four times the spiked amount. Therefore, qualification was not necessary.

The LCS %R for acetone (252%) exceeded the quality control criteria (30-170%). This compound was not detected in the

investigative samples; therefore, qualification was not necessary.

Samples MW-9S and “Field Duplicate” were diluted due to the presence of high concentrations of VOCs.

Based on the results of this data validation, the data are considered useable and complete as qualified.

BRT

\\Usdet1s02\J:\jobs\01_INDUSTRIAL-OTHER\3868-Wayne RR\6-Reports\SAPR 28\03 - Appendices\Appendix B - data valid rpt-Wayne Rec SAPR 28.doc

# APPENDIX C

## SUMMARY OF MAJOR FIELD ACTIVITIES
## JANUARY THROUGH JUNE 2009

# APPENDIX C

## SUMMARY OF MAJOR FIELD ACTIVITIES
## JANUARY THROUGH JUNE 2009

## Wayne Reclamation & Recycling

| Date | Description of Field Activities and Events as Provided by InSite |
|---|---|
| January 2009 | • SVE system was restarted after shutdown due to unknown cause. The system was checked for possible shutdown causes, but none were identified.<br>• Clean all RW flow meters.<br>• Thaw discharge point at RW-3 to ensure flow is maintained.<br>• Evaluate and adjust stripper air control parameters. Calculate and increase anti-scale feed rate. |
| February 2009 | • Program stripper air control to add start bias.<br>• Minor Genesis revisions to add trim function for stripper airflow control.<br>• Check analog input scale valves. Record range valves from instruments. |
| March 2009 | • Check high current at RW-1. Test analog inputs and re-program as needed.<br>• Remove and clean stripper effluent valve. Setup to clean main SVE filter. Open SVE filter and remove elements; begin cleaning. Remove sediments from the filter canisters.<br>• Install filters in canisters.<br>• Perform air stripper service. Switch blowers and service blower B-1.<br>• Restart groundwater discharge and set new air stripper PID parameters. |
| April 2009 | • Routine maintenance<br>• Reduced AST area SVE air flow to reduce intake of sediment and water<br>• Cleaned filter at blower B-2.<br>• Semi-annual sampling completed; SVE sampling<br>• Temporary shutdown due plant excess water coming in with SVE. |
| May 2009 | • Routine maintenance<br>• At the request of the POTW, operation of the groundwater extraction system was suspended on May 18 and then restarted on May 22. |
| June 2009 | • Routine maintenance<br>• Install new surge protector for instrumentation power.<br>• Replace drive sleeves at pumps P-5 and P-6. |

# APPENDIX D

# HISTRORICAL MONITORING DATA

**Table D-1**
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**
**Wayne Reclamation & Recycling**

| | SOUTHEAST AREA | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BRANCHES A - F | | | | | | | | | | | | | |
| | AS-ON | AS-ON | AS-ON | AS-ON | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF |
| **CONSTITUENT (ppb[v/v])** | **1/9/96** | **2/15/96** | **2/16/96** | **2/18/96** | **11/25/96** | **11/27/96** | **9/3/97** | **9/5/97** | **11/18/97** | **11/21/97** | **4/21/98 *** | **4/28/98** | **10/14/98** | **10/16/98** |
| 1,1-Dichloroethane | **230** | **230** | **300** | **180** | **120** | **81** | **88** | **82** | **98** | **92** | **20** | **19** | **70** | **73** |
| cis-1,2-Dichloroethene | **9,600** | **6,800** | **6,600** | **6,400** | **5,300** | **3,700** | **2,900** | **3,000** | **4,400** | **4,300** | **830** | **1,000** | **3,300** | **3,500** |
| trans-1,2-Dichloroethene | **850** | **460** | **540** | **480** | **490** | **340** | **370** | **380** | **460** | **460** | **71** | **74** | **280** | **360** |
| 4-Ethyltoluene | <84 | <72 | <72 | <72 | <36 | <34 | <17 | <34 | <36 | <30 | <12 | <12 | <25 | <25 |
| Tetrachloroethene | **670** | **470** | **470** | **470** | **450** | **370** | **370** | **370** | **240** | **220** | **56** | **100** | **450** | **270** |
| 1,1,1-Trichloroethane | **1,300** | **810** | **770** | **700** | **520** | **340** | **280** | **290** | **270** | **290** | **47** | **51** | **280** | **190** |
| Trichloroethene | **9,100** | **8,600** | **7,200** | **7,100** | **4,000** | **3,000** | **2,800** | **2,800** | **3,800** | **3,500** | **330** | **540** | **2,500** | **2,900** |
| 1,2,4-Trimethylbenzene | <84 | <72 | <72 | <72 | <36 | <34 | <17 | <34 | <36 | <30 | **13** | <12 | <25 | <25 |
| 1,3,5-Trimethylbenzene | <84 | <72 | <72 | <72 | <36 | <34 | <17 | <34 | <36 | <30 | <12 | <12 | <25 | <25 |
| Vinyl Chloride | <84 | <72 | **240** | **230** | **61** | <34 | **130** | **200** | **89** | **56** | **85** | <12 | <25 | <25 |
| Xylenes, Total | <84 | <72 | <72 | <72 | <36 | <34 | <17 | <34 | <36 | <30 | **23** | **14** | <25 | <25 |
| Soil Vapor Extraction Wells: | 1 - 40D | | | | | | | | | | | | | |

**Notes:**

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

AS = Air sparging system (on or off).

* As of May 1, 1998, began to cycle operation of soil vapor extraction branches.

**Bold** = Analyte detected greater than the laboratory reporting limit.

< = Not detected greater than the reporting limit provided.

The soil vapor extraction (SVE) and air sparge (AS) systems were temporarily shut down on November 13, 2005 for assessment of the vadose zone and were restarted in April 2006.

**Table D-1**
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**
**Wayne Reclamation & Recycling**

| | SOUTHEAST AREA | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BRANCHES A - F | | | | | | | | | | | | | | | |
| | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF |
| **CONSTITUENT (ppb[v/v])** | **4/26/99** | **4/13/99** | **12/14/99** | **12/21/99** | **4/18/00** | **4/29/00** | **10/6/00** | **10/10/00** | **4/27/01** | **4/23/01** | **9/29/01 *** | **10/31/01** | **4/23/02** | **4/26/02** | **10/23/02** | **10/28/02** |
| 1,1-Dichloroethane | **14** | **5** | **47** | **38** | **17** | **29** | **49** | **32** | <6.9 | <140 | <140 | <130 | **14** | **10** | <140 | <130 |
| cis-1,2-Dichloroethene | **410** | **210** | **1,500** | **1,300** | **580** | **1,400** | **2,200** | **1,300** | **270** | **150** | **680** | **1,500** | **510** | **370** | **1,300** | **790** |
| trans-1,2-Dichloroethene | **40** | **22** | **180** | **160** | **59** | **130** | **160** | **130** | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Ethyltoluene | **7** | <2 | <9.7 | <7.8 | <6.7 | <13 | <18 | <8.2 | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | **53** | **5** | **54** | **58** | **52** | **79** | **52** | **95** | **20** | <140 | <140 | <130 | **47** | **42** | <140 | <130 |
| 1,1,1-Trichloroethane | **90** | **6** | **100** | **87** | **56** | **74** | **93** | **75** | **29** | <140 | <140 | <130 | **27** | **19** | <140 | <130 |
| Trichloroethene | **250** | **94** | **650** | **540** | **400** | **710** | **920** | **750** | **150** | **140** | **280** | **410** | **300** | **330** | **720** | **430** |
| 1,2,4-Trimethylbenzene | **14** | **2** | <9.7 | <7.8 | <6.7 | <13 | <18 | <8.2 | <6.9 | <140 | <140 | <130 | <1.3 | <0.64 | <140 | <130 |
| 1,3,5-Trimethylbenzene | <2 | <2 | <9.7 | <7.8 | <6.7 | <13 | <18 | <8.2 | <6.9 | <140 | <140 | <130 | <1.3 | <0.64 | <140 | <130 |
| Vinyl Chloride | **12** | **15** | **180** | **29** | **12** | <13 | **130** | <8.2 | **60** | <140 | <140 | <260 | **61** | **18** | <140 | <130 |
| Xylenes, Total | **29** | **5** | <9.7 | <7.8 | <6.7 | <13 | <18 | <8.2 | <5.7 | <140 | <280 | <260 | <2.2 | <1.1 | <280 | <270 |
| Soil Vapor Extraction Wells: | 1 - 40D | | | | | | | | | | | | | | | |

**Notes:** * As of September 15, 2001, began cycling of two soil vapor extraction branches with weekly rotation of branches.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

AS = Air sparging system (on or off).

**Bold** = Analyte detected greater than the laboratory reporting limit.

< = Not detected greater than the reporting limit provided.

NA = Not analyzed.

**Table D-1**
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**
**Wayne Reclamation & Recycling**

| | SOUTHEAST AREA | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BRANCHES A - F | | | | | | | | | | | | | | | | | |
| | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF | AS-ON | AS-OFF |
| **CONSTITUENT (ppb[v/v])** | **4/15/03** | **4/21/03** | **10/15/03** | **10/18/03** | **4/19/04** | **4/23/04** | **10/14/04** | **10/19/04** | **4/19/05** | **4/25/05** | **10/12/05** | **10/12/05** | **4/8/06** | **4/8/06** | **5/21/06** | **5/28/06** | **10/24/06** | **10/24/06** |
| 1,1-Dichloroethane | <130 | <130 | <150 | <150 | <13 | <140 | <140 | <150 | **6.7** | < 12.9 | < 130 | < 130 | <13.4 | <14.3 | <14.3 | <14.8 | **22** | <13.4 |
| cis-1,2-Dichloroethene | **190** | **470** | **390** | **340** | **790** | **160** | **330 (UB)** | **330 (UB)** | **742** | **742** | **430** | **400** | **449** | **458** | **567** | **392** | **811** | **570** |
| trans-1,2-Dichloroethene | NA | NA | NA | NA | NA | NA | NA | NA | < 0.7 | < 13.7 | < 130 | < 130 | **64** | **75** | **86** | **50** | **122** | **92** |
| 4-Ethyltoluene | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | <130 | <130 | <150 | <150 | **29** | <140 | <140 | <150 | **19** | **40** | < 130 | < 130 | **26** | **22** | **38** | **34** | **36** | **34** |
| 1,1,1-Trichloroethane | <130 | <130 | <150 | <150 | **21** | <140 | <140 | <150 | **19** | **31** | < 130 | < 130 | **22** | **23** | **40** | **33** | **64** | **37** |
| Trichloroethene | <130 | **270** | **260** | **240** | **390** | <140 | **180 (UB)** | **180 (UB)** | **407** | **323** | **240** | **230** | **322** | **309** | **378** | **279** | **434** | **376** |
| 1,2,4-Trimethylbenzene | <130 | <130 | <150 | <150 | <13 | <140 | <140 | <150 | **0.86** | < 12.9 | < 130 | < 130 | <13.4 | <14.3 | <14.3 | <14.8 | <13.8 | <13.4 |
| 1,3,5-Trimethylbenzene | <130 | <130 | <150 | <150 | <13 | <140 | <140 | <150 | < 0.66 | < 12.9 | < 130 | < 130 | <13.4 | <14.3 | <14.3 | <14.8 | <13.8 | <13.4 |
| Vinyl Chloride | <130 | <130 | <150 | <150 | **30** | <140 | <140 | <150 | < 0.69 | < 13.4 | < 130 | < 130 | **31.2** | <14.3 | **19.8** | <14.8 | <13.8 | <13.4 |
| Xylenes, Total | <270 | <270 | <460 | <450 | **30** | <140 | <140 | <150 | **1.8** | < 21.4 | < 270 | < 270 | <40.2 | <42.9 | <42.9 | <44.4 | <41.4 | <40.2 |
| Soil Vapor Extraction Wells: | 1 - 40D | | | | | | | | | | | | | | | | | |

**Notes:** Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

AS = Air sparging (on or off).

**Bold** = Analyte detected greater than the laboratory reporting limit.

< = Not detected greater than the reporting limit provided.

NA = Not analyzed.

Southeast

**Table D-1**
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**
**Wayne Reclamation & Recycling**

| | ABOVEGROUND STORAGE TANK AREA | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BRANCHES G and H [1] | | | | | | | | | | | | |
| **CONSTITUENT (ppb[v/v])** | **1/11/96** | **11/25/96** | **9/3/97** | **11/18/97** | **4/21/98** | **10/16/98** | **4/21/99** | **11/22/99** | **4/18/00** | **10/2/00** | **4/23/01** | **11/2/01** | **4/23/02** |
| 1,1-Dichloroethane | **39** | **270** | **11** | **6** | <2 | <2.0 | <2.0 | <2.0 | **9.1** | **10** | **1.3** | **4.6** | **0.77** |
| cis-1,2-Dichloroethene | **1,800** | **660** | **820** | **310** | **110** | **50** | **21** | **24** | **330** | **300** | **21** | **130** | **27** |
| trans-1,2-Dichloroethene | **120** | **63** | **59** | **24** | **4.8** | **2.2** | <2.0 | <2.0 | **28** | **27** | NA | <0.57 | NA |
| 4-Ethyltoluene | **190** | <22 | **10** | **3** | **16** | <2.0 | **4** | **2.1** | <7.3 | <6.1 | NA | NA | NA |
| Tetrachloroethene | **1,600** | <22 | **460** | **67** | **21** | **6** | **2.8** | <2.0 | **58** | **75** | **15** | **71** | **6.6** |
| 1,1,1-Trichloroethane | **790** | **2,700** | **180** | **65** | **3.4** | **2** | <2.0 | <2.0 | **55** | **61** | **9.9** | **33** | **3.6** |
| Trichloroethene | **1,700** | **140** | **1,500** | **420** | **57** | **48** | **8.1** | **9** | **590** | **710** | **57** | **150** | **22** |
| 1,2,4-Trimethylbenzene | **230** | <22 | **12** | **4** | **22** | <2.0 | **7.5** | **2.8** | <7.3 | <6.1 | <0.71 | <0.69 | <0.69 |
| 1,3,5-Trimethylbenzene | **120** | <22 | **20** | **4** | **6.3** | <2.0 | **2.2** | <2.0 | <7.3 | <6.1 | <0.71 | <0.69 | <0.69 |
| Vinyl Chloride | **130** | <22 | <8.4 | **22** | **7** | <2.0 | **2.3** | **3.6** | <7.3 | <6.1 | <0.74 | **2.5** | **0.92** |
| Xylenes, Total | **55** | <22 | **25** | **46** | **57** | <2.0 | **18** | **2.1** | <7.3 | **31** | **3.49** | **41** | **2.79** |
| Soil Vapor Extraction Wells: | 41 - 55 | | | | | | | | | | | | |

**Notes:**

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

[1] Branch H operations suspended as of the beginning of October 2002.

**Bold** = Analyte detected greater than the laboratory reporting limit.

< = Not detected greater than the reporting limit provided.

**Table D-1**
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**
**Wayne Reclamation & Recycling**

| | ABOVEGROUND STORAGE TANK AREA | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BRANCH G (EAST BRANCH) | | | | | | | | | | | | | | | |
| **CONSTITUENT (ppb[v/v])** | **10/23/02** | **12/18/02 *** | **4/17/03** | **10/15/03** | **4/19/04** | **10/19/04** | **4/19/05** | **10/12/05** | **4/7/06** | **5/30/06** | **10/20/06** | **4/23/07** | **10/18/07** | **4/14/08** | **10/17/08** | **4/20/09** |
| 1,1-Dichloroethane | <140 | <140 | <130 | <150 | <13 | **5.7** | < 13.2 | < 140 | <13.8 | <14.3 | <13.8 | <3.4 | <14.3 | <13.4 | <13.4 | <0.67 |
| cis-1,2-Dichloroethene | <140 | **580** | **190** | <150 | **160** | **170 (UB)** | **65** | **290** | **805** | **132** | **222** | **11** | **33** | <13.4 | **362** | **13** |
| trans-1,2-Dichloroethene | NA | NA | NA | NA | NA | NA | < 14.1 | < 140 | <13.8 | <14.3 | **15** | <3.5 | <14.3 | <13.4 | **50** | <0.67 |
| 4-Ethyltoluene | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | <140 | <140 | <130 | <150 | **23** | **27** | **22** | < 140 | **29** | **28** | **51** | **7.5** | <14.3 | <13.4 | **32** | **28** |
| 1,1,1-Trichloroethane | <140 | <140 | <130 | <150 | <12 | **17** | **74** | < 140 | <13.8 | <14.3 | **17** | <3.4 | <14.3 | <13.4 | **18** | <0.67 |
| Trichloroethene | **180** | **440** | **280** | **260** | **360** | **350 (UB)** | **105** | **260** | **197** | **183** | **380** | **28** | **52** | <13.4 | **559** | **9.5** |
| 1,2,4-Trimethylbenzene | <140 | <140 | <130 | <150 | <13 | **4.0** | < 13.2 | < 140 | <13.8 | <14.3 | <13.8 | <3.4 | <14.3 | <13.4 | <13.4 | **2.4** |
| 1,3,5-Trimethylbenzene | <140 | <140 | <130 | <150 | <13 | **1.2** | < 13.2 | < 140 | <13.8 | <14.3 | <13.8 | <3.4 | <14.3 | <13.4 | <13.4 | **1.6** |
| Vinyl Chloride | <140 | <140 | <130 | <150 | <14 | **18.4 (UB)** | < 13.8 | < 140 | <13.8 | <14.3 | <13.8 | <3.4 | <14.3 | <13.4 | <13.4 | <0.67 |
| Xylenes, Total | <290 | <290 | <270 | <450 | **47** | **9.3** | < 22.1 | < 290 | <13.8 | <14.3 | <13.8 | <3.4 | <42.9 | <40.2 | <40.2 | **1.0** |
| Soil Vapor Extraction Wells: | 41 - 43, 50, and 53 - 58 | | | | | | | | | | | | | | | |

**Notes:** Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

* Additional sampling following the completion and connection of new Soil Vapor Extraction Wells 56, 57, and 58.

**Bold** = Analyte detected greater than the laboratory reporting limit.

(1) Branch H operations suspended as of the beginning of October 2002.

< = Not detected greater than the reporting limit provided.

NA = Not analyzed.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT | Date Sampled | MONITORING WELL MW-1D (Southeast Area) | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8/1988 | 6/7/96 | 11/6/96 | 6/12/97 | 10/14/98 | 10/13/99 | 10/2/00 | 10/31/01 | 10/25/02 | 10/15/03 | 10/20/04 | 10/12/05 | 10/18/06 | 10/17/07 | 10/17/08 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | |
| Acetone | | ND | ND | NA | NA | NA | ND | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | | ND | ND | NA | NA | NA | NA | NA | NA | NA | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | | ND | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | | ND | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | | ND | ND | NA | ND | ND | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | **5** | *< 1* | **0.274** |
| Dibromomethane | | ND | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **70** |
| trans-1,2-Dichloroethene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **100** |
| 1,2-Dichloroethene, Total | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | | ND | ND | NA | NA | NA | ND | ND | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | | ND | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **5** | ND | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | | **0.0059** | **0.005** | ND | ND | ND | ND | ND | ND | ND | <0.100 | <0.0100 | < 0.01 | < 0.01 | < 0.1 | < 0.1 | -- |
| Barium, Dissolved | | **0.132** | **0.13** | **0.13** | **0.12** | **0.16** | **0.68** | **0.14** | **0.18** | **0.226** | **0.147** | **0.140** | **0.175** | **0.170** | **0.160** | **0.230** | -- |
| Cadmium, Dissolved | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.030 | <0.00500 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | | ND | ND | ND | ND | **0.013** | ND | ND | ND | ND | <0.040 | **0.0207** | < 0.01 | < 0.01 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | | **0.009** | ND | ND | ND | ND | ND | ND | ND | ND | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | -- |
| Lead, Dissolved | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.080 | <0.00500 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | | ND | ND | ND | **0.051** | ND | ND | ND | ND | **0.012** | **0.013** | **0.0117** | < 0.05 | < 0.05 | **0.16** | **0.1** | -- |
| Zinc, Dissolved | | **0.013** | **0.06** | ND | **0.025** | **0.031** | **0.13** | ND | **0.068** | **0.072** | **0.220** | <0.0200 | **0.0358** | <0.020 | **0.052** | <0.050 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II

-- = No PRG assigned.
< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
ND = Not detected greater than the method detection limit.
NA = Not analyzed.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| | MONITORING WELL MW-3S (Southeast Area) | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CONSTITUENT** **Date Sampled** | **3/1/88** | **8/1/88** | **11/29/95** | **8/27/96** | **11/6/96** | **6/13/97** | **10/14/98** | **10/13/99** | **10/2/00** | **10/31/01** | **10/15/03** | **(µg/L)** |
| **VOCs (µg/L)** | | | | | | | | | | | | |
| Acetone | ND | ND | NA | NA | NA | NA | NA | ND | ND | ND | <20.0 | **3,650** |
| Benzene | ND | 1.1 | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | **0.617** |
| Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | -- |
| 2-Butanone (MEK) | ND | ND | NA | NA | NA | NA | NA | NA | NA | NA | <12.5 | -- |
| n-Butylbenzene | ND | ND | ND | ND | NA | NA | NA | ND | ND | ND | <1.0 | -- |
| Carbon Disulfide | ND | **2.3** | NA | NA | NA | NA | NA | ND | ND | ND | <1.0 | **768** |
| Chloroethane | ND | ND | ND | ND | NA | ND | ND | ND | ND | ND | <5.0 | -- |
| Chloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | **0.274** |
| Dibromomethane | ND | ND | ND | ND | NA | NA | NA | ND | ND | ND | <1.0 | -- |
| 1,1-Dichloroethane | ND | **23** | ND | ND | **1.5** | ND | ND | ND | ND | ND | <1.0 | **973** |
| 1,2-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | -- |
| 1,1-Dichloroethene | ND | **16** | ND | ND | **1.9** | ND | ND | ND | ND | ND | *<1.0* | **0.0167** |
| cis-1,2-Dichloroethene | NA | NA | NA | **3,500** | **2,600** | **1,200** | **1,100** | **1,400** | **840** | **733** | **269** | **70** |
| trans-1,2-Dichloroethene | NA | NA | NA | **110** | **92** | **45** | **54** | **33** | **38** | **43** | **22** | **100** |
| 1,2-Dichloroethene, Total | **24,000** | **6,900** | **2,200** | **3,610** | **2,692** | **1,245** | **1,154** | **1,433** | **878** | **776** | **291** | (170) |
| 1,2-Dichloropropane | ND | **8.4** | ND | ND | **3.7** | ND | ND | ND | ND | **2** | <1.0 | **1.25** |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | NA | NA | NA | NA | NA | ND | ND | ND | <12.5 | **487** |
| Tetrachloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | **1.43** |
| Toluene | ND | **3.4** | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | **200** |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | **0.314** |
| Trichloroethene | ND | **1.1** | ND | ND | ND | ND | ND | ND | ND | **5** | **2** | **2.54** |
| 1,2,4-Trimethylbenzene | ND | ND | ND | ND | NA | NA | NA | ND | ND | ND | <1.0 | -- |
| Vinyl Chloride | **1,300** | **430** | **380** | **400** | **260** | **90** | **120** | **310** | **67** | **3** | **2** | **0.0283** |
| Xylenes, Total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | **828** |
| **TOTAL VOCs** | **25,300.0** | **7,385.3** | **2,580** | **4,010** | **2,959.1** | **1,335** | **1,274** | **1,743** | **945** | **786** | **295** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | |
| Arsenic, Dissolved | **0.015** | **0.0234** | **0.005** | ND | ND | ND | ND | **0.011** | ND | ND | <0.100 | -- |
| Barium, Dissolved | **0.306** | **0.32** | **0.08** | **0.04** | ND | ND | **0.048** | **0.28** | **0.032** | **0.041** | <0.020 | -- |
| Cadmium, Dissolved | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.030 | -- |
| Chromium, Dissolved total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.040 | -- |
| Cyanide, Total | **0.015** | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.005 | -- |
| Lead, Dissolved | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.080 | -- |
| Nickel, Dissolved | ND | **0.0151** | ND | ND | ND | ND | ND | ND | **0.013** | ND | **0.020** | -- |
| Zinc, Dissolved | ND | **0.0126** | ND | ND | ND | ND | ND | **0.27** | ND | ND | <0.050 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
2003 and subsequent data were validated to Level II
October 2002 and October 2004 - dry conditions at the site; inadequate groundwater volume.
-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| | MONITORING WELL MW-4S (Recovery Well RW-4 Area) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CONSTITUENT Date Sampled** | **8/1/88** | **7/23/92** | **11/28/95** | **8/27/96** | **6/12/97** | **11/18/97** | **4/21/98** | **10/15/98** | **4/12/99** | **10/13/99** | **5/4/00** | **10/2/00** | **4/19/01** | **10/31/01** | **4/23/02** | **10/23/02** | **4/16/03** | **10/15/03** | **4/20/04** | **10/19/04** | **4/19/05** | **10/13/05** | **4/26/06** | **10/18/06** | **4/17/07** | **10/17/07** | **4/14/08** | **10/16/08** | **4/20/09** | **(µg/L)** |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | ND | ND | NA | NA | NA | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <20.0 | <20.0 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | NA | <2.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | ND | ND | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | ND | NA | ND | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | <1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | ND | ND | NA | NA | NA | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | <5.0 | <2.0 (J) | <2.0 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | **0.7** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | ND | NA | ND | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **973** |
| 1,2-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | ND | ND | ND | **4.2** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | **68** | <1.0 | < 1 | **1** | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **70** |
| trans-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **100** |
| 1,2-Dichloroethene, Total | ND | ND | ND | **4.2** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | **68** | <1.0 | < 1 | **1** | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | (170) |
| 1,2-Dichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | NA | NA | NA | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | ND | ND | ND | **1.4** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | ND | ND | ND | **11** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | **73** | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | ND | NA | ND | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | NA | NA | < 5 | < 5 | < 5 | < 5 | NA | NA | NA | < 5 | < 5 | -- |
| Vinyl Chloride | **2** | **1** | ND | ND | ND | ND | **12** | **15** | **17** | **29** | **33** | **23** | **13** | **7** | **6** | **15** | **18** | **25** | **26** | **12** | **8.8** | **7.2** | **8.4** | **5.0** | **5.2** | *< 1* | **3.6** | **3.8** | **7.2** | **0.0283** |
| Xylenes, Total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | **2.7** | **1** | ND | **16.6** | ND | ND | **12** | **15** | **17** | **29** | **33** | **23** | **13** | **7** | **6** | **15** | **18** | **25** | **167** | **12** | **8.8** | **8.2** | **8.4** | **5.0** | **5.2** | **0** | **3.6** | **3.8** | **7.2** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | NA | ND | **0.006** | ND | ND | ND | ND | ND | ND | **0.0082** | ND | **0.0081** | ND | ND | ND | ND | <0.10 | <0.100 | **0.0201** | **0.0126** | **0.0173** | **0.0173** | <0.100 | **0.0105** | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | -- |
| Barium, Dissolved | NA | **0.159** | **0.13** | **0.11** | **0.67** | **0.28** | **0.48** | **0.3** | **0.49** | **0.58** | **0.79** | **1.1** | **1.1** | **0.26** | **0.26** | **0.35** | **0.219** | **0.230** | **0.228** | **0.194** | **0.194** | **0.207** | **0.140** | **0.131** | **0.170** | **0.140** | **0.160** | **0.160** | **0.092** | -- |
| Cadmium, Dissolved | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.030 | <0.030 | <0.005 | <0.00100 | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | < 0.03 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.040 | <0.040 | <0.005 | <0.0100 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | < 0.04 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.005 | **0.0071** | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | **0.0051** | < 0.005 | < 0.005 | < 0.005 | < 0.005 | -- |
| Lead, Dissolved | NA | ND | ND | **0.0032** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **0.16** | ND | <0.080 | <0.080 | **0.00597** | **<0.00500** | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | < 0.08 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **0.011** | ND | ND | ND | <0.010 | <0.010 | <0.010 | <0.0500 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | -- |
| Zinc, Dissolved | NA | **0.035** | **0.02** | ND | **0.036** | ND | ND | **0.023** | **0.025** | ND | ND | ND | **0.022** | ND | ND | **0.056** | <0.050 | <0.050 | **0.0233** | **0.025** | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
(J) = estimated.

-- = No PRG assigned.
< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.
NA = Not analyzed.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT / Date Sampled | MONITORING WELL MW-7S (Recovery Well RW-4 Area) | | | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3/1/88 | 8/1/88 | 11/29/95 | 8/27/96 | 11/6/96 | 6/12/97 | 10/15/98 | 10/13/99 | 10/2/00 | 10/30/01 | 10/23/02 | 10/15/03 | 10/19/04 | 10/12/05 | 10/18/06 | 10/17/07 | 10/16/08 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | | |
| Acetone | ND | ND | NA | NA | NA | NA | NA | ND | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | ND | ND | NA | NA | NA | NA | NA | NA | NA | NA | NA | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | ND | ND | NA | NA | NA | NA | NA | ND | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | ND | **23** | **7.4** | **10** | **7.4** | **5.1** | ND | ND | ND | **3** | **3** | **5** | **4** | **3** | **3** | < 1 | < 1 | **973** |
| 1,2-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | **2.4** | **0.0167** |
| cis-1,2-Dichloroethene | NA | NA | **1,100** | **980** | **780** | **640** | **87** | **96** | **120** | **187** | **237** | **344** | **330** | **200** | **280** | **155** | **175** | **70** |
| trans-1,2-Dichloroethene | NA | NA | **59** | **74** | **55** | **48** | **23** | **10** | **12** | **21** | **21** | **33** | **29** | **18** | **23** | **17** | **20** | **100** |
| 1,2-Dichloroethene, Total | **2,600** | **1,900** | **1,159** | **1,054** | **855** | **688** | **110** | **106** | **132** | **208** | **258** | **377** | **359** | **218** | **303** | **172** | **195** | (170) |
| 1,2-Dichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | NA | NA | NA | NA | NA | ND | ND | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | ND | ND | **3** | **92** | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | ND | **1** | ND | ND | ND | ND | ND | **6** | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0283** |
| Xylenes, Total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | **2,600** | **1,924** | **1,170** | **1,156** | **862** | **693** | **110** | **112** | **132** | **211** | **261** | **382** | **363** | **221** | **306** | **172** | **197** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | **0.005** | **0.003** | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.100 | **0.0118** | < 0.01 | < 0.01 | < 0.1 | < 0.1 | -- |
| Barium, Dissolved | **0.286** | **0.191** | **0.17** | **0.12** | **0.16** | **0.16** | **0.2** | **0.77** | **0.22** | **0.17** | **0.202** | **0.135** | **0.125** | **0.174** | **0.149** | **0.14** | **0.084** | -- |
| Cadmium, Dissolved | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.030 | <0.00100 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.040 | <0.0100 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | ND | **0.016** | **0.095** | ND | ND | ND | ND | ND | ND | ND | ND | **0.0060** | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | -- |
| Lead, Dissolved | ND | ND | ND | **0.0099** | ND | ND | ND | ND | ND | ND | ND | <0.080 | <0.00500 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | ND | ND | ND | **0.06** | ND | ND | ND | ND | **0.006** | ND | ND | <0.010 | <0.0500 | < 0.05 | < 0.05 | < 0.01 | < 0.01 | -- |
| Zinc, Dissolved | ND | **0.0263** | ND | **0.02** | ND | ND | ND | **0.22** | ND | ND | ND | <0.050 | **0.0272** | < 0.02 | < 0.02 | < 0.05 | < 0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| | MONITORING WELL MW-9S (Aboveground Storage Tank Area) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CONSTITUENT** **Date Sampled** | **3/1/88** | **8/1/88** | **7/24/92** | **11/7/95** | **8/27/96** | **6/12/97** | **11/18/97** | **4/21/98** | **10/15/98** | **4/12/99** | **10/20/99** | **5/4/00** | **10/2/00** | **4/19/01** | **10/30/01** | **4/23/02** | **10/23/02** | **4/16/03** | **10/15/03** | **4/20/04** | **10/19/04** | **4/19/05** | **10/13/05** | **4/26/06** | **10/18/06** | **4/17/07** | **10/17/07** | **4/14/08** | **10/14/08** | **4/22/09** | **(µg/L)** |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | ND | ND | NA | NA | NA | NA | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <20.0 | <20.0 | <20 | <20 | < 20 | < 100 | < 100 | < 10000 | < 2000 | < 2000 | < 200 | < 20 | < 20 | **3,650** |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | *<1.0* | **1.4** | *<1.0* | *< 1* | *< 5* | *< 5* | *< 500* | *< 100* | *< 100* | *< 10* | *< 1* | *< 1* | **0.617** |
| Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | NA | <2.0 | <2.0 | < 2 | < 10 | < 10 | < 1000 | < 1000 | < 1000 | < 100 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | ND | ND | ND | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | <12.5 | <12.5 | <20 | <20 | < 20 | < 100 | < 100 | < 10000 | < 2000 | < 2000 | < 200 | < 20 | < 20 | -- |
| n-Butylbenzene | ND | ND | ND | **4.2** | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 5 | < 5 | < 500 | < 100 | < 100 | < 10 | < 1 | < 1 | -- |
| Carbon Disulfide | ND | **0.59** | ND | NA | NA | NA | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <20 | <20 | < 20 | < 100 | < 100 | *< 10000* | *< 2000* | *< 2000* | < 200 | < 20 | < 20 | **768** |
| Chloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | <5.0 | <2.0 (J) | <2.0 | < 2 | < 10 | < 10 | < 1000 | < 1000 | < 1000 | < 100 | < 2 | < 2 | -- |
| Chloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | **13** | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 5* | *< 5* | *< 500* | *< 100* | *< 100* | *< 10* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | ND | ND | NA | **1.8** | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 5 | < 5 | < 500 | < 100 | < 100 | < 10 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | ND | **8.3** | ND | **18** | ND | **13** | ND | **16** | **17** | **12** | **5.5** | **59** | **13** | ND | **1.5** | **1.7** | **3.9** | **4.2** | <1.0 | **16** | **2.3** | **1.2** | **20** | < 1 | < 100 | < 100 | < 100 | < 10 | **1.7** | < 1 | **973** |
| 1,2-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 5 | < 5 | < 500 | < 100 | < 100 | < 10 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | ND | **92** | ND | **56** | ND | **15** | **76** | **17** | **51** | **13** | **18** | **67** | **63** | ND | **5** | **8** | **38** | **42** | *<1.0* | **94** | **10** | **7** | **150** | **11** | *<500* | *< 100* | **134** | *< 10* | **15** | **17** | **0.0167** |
| cis-1,2-Dichloroethene | NA | NA | NA | **30,000** | **24,000** | **18,000** | NA | **10,000** | **19,000** | **8,800** | NA | **43,000** | **37,000** | **5,400** | **3,360** | **3,600** | **18,300** | **16,200** | **29,400** | **35,000** | **5,300** | **3,700** | **55,000** | **7,100** | **24,000** | **9,020** | **61,000** | **1,040** | **6,910** | **6,930** | **70** |
| trans-1,2-Dichloroethene | NA | NA | NA | **140** | ND | **200** | NA | **190** | **170** | **95** | NA | **350** | **210** | ND | **75** | **63** | **122** | **145** | **252** | **310** | **84** | **36** | **390 (J)** | **78** | *<500* | < 100 | < 100 | < 10 | 85 | 48 | **100** |
| 1,2-Dichloroethene, Total | **33,000** | **32,000** | **23,000** | **30,140** | **24,000** | **18,200** | **42,390** | **10,190** | **19,170** | **8,895** | **8,003** | **43,350** | **37,210** | **5,400** | **3,435** | **3,663** | **18,422** | **16,345** | **29,652** | **35,310** | **5,384** | **3,736** | **55,390** | **7,178** | **24,000** | **9,020** | **61,000** | **1,040** | **6,995** | **6,978** | (170) |
| 1,2-Dichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | **3** | <1.0 | <1.0 | < 1 | < 5 | < 5 | *< 500* | *< 100* | *< 100* | *< 10* | *< 1* | < 1 | **1.25** |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 5 | < 5 | < 500 | < 100 | < 100 | < 10 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | **2.2** | ND | NA | NA | NA | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <12.5 | <12.5 | <20 | <20 | < 20 | < 100 | < 100 | *< 10000* | *< 2000* | *< 2000* | < 200 | < 20 | < 20 | **487** |
| Tetrachloroethene | ND | **27** | ND | **36** | ND | **78** | **220** | **280** | **250** | **720** | **67** | **37** | **97** | ND | **28** | **46** | **64** | **59** | **106** | **180** | **33** | **12** | **190** | **34** | *<500* | *< 100* | *< 100* | *< 10* | **5.5 J** | **12** | **1.43** |
| Toluene | ND | **21** | ND | ND | ND | ND | ND | **9** | **10** | **22** | ND | ND | ND | ND | ND | ND | ND | <1.0 | **2** | **4** | <1.0 | < 1 | **6** | < 1 | < 100 | < 100 | < 100 | < 10 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | ND | **9.9** | ND | ND | ND | ND | ND | **13** | **21** | **13** | ND | **6** | **7** | ND | **1** | **3** | **5** | **3** | **10** | **11** | **1** | **2** | **10** | **1** | *<500* | *< 100* | *< 100* | < 10 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | ND | ND | ND | **3** | ND | ND | ND | **8** | **12** | ND | ND | **6** | ND | ND | ND | ND | ND | **2** | **5** | **5** | *<1.0* | *< 1* | *< 5* | *< 5* | *< 500* | *< 100* | *< 100* | *< 10* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | **18,000** | **18,000** | **9,700** | **17,000** | **28,000** | **24,000** | **67,000** | **25,000** | **12,000** | **16,000** | **5,800** | **5,800** | **21,000** | **16,000** | **4,590** | **9,300** | **6,470** | **8,180** | **32,200** | **39,000** | **6,600** | **4,100** | **49,000** | **7,100** | **13,000** | **5,640** | **25,900** | **524** | **1,490** | **2,360** | **2.54** |
| 1,2,4-Trimethylbenzene | ND | ND | NA | **4.3** | ND | ND | NA | ND | ND | **6** | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | NA | NA | < 5 | < 25 | < 25 | < 2500 | NA | < 500 | < 50 | < 5 | < 5 | -- |
| Vinyl Chloride | ND | **480** | **340** | **1,100** | **680** | **200** | **380** | **59** | ND | **72** | **140** | **260** | **140** | ND | **3** | **4** | **122** | **403** | **396** | **220** | **38** | **16** | **420 (J)** | **26** | *<500* | **135** | **157** | *< 10* | **106** | **139** | **0.0283** |
| Xylenes, Total | ND | ND | ND | ND | ND | ND | ND | ND | ND | **7** | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | **3** | <1.0 | < 1 | < 5 | < 5 | < 500 | < 100 | < 100 | < 10 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | **51,000** | **50,641** | **33,040** | **48,363** | **52,680** | **42,506** | **110,066** | **35,592** | **31,531** | **25,774** | **14,034** | **49,585** | **58,530** | **21,400** | **8,064** | **13,025** | **25,125** | **25,038** | **62,373** | **74,845** | **12,068** | **7,874** | **104,766** | **14,350** | **37,000** | **14,795** | **87,191** | **1,564** | **8,613** | **9,512** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | **0.008** | **0.0106** | **0.011** | **0.01** | **0.006** | ND | ND | ND | ND | ND | **0.026** | ND | 0.0051 | ND | ND | ND | ND | <0.10 | <0.100 | <0.100 | <0.0100 | < 0.01 | **0.0103** | < 0.01 | < 0.01 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | -- |
| Barium, Dissolved | **0.181** | **0.139** | **0.144** | **0.11** | **0.04** | ND | ND | **0.035** | **0.079** | **0.04** | **0.059** | **0.08** | **0.055** | **0.027** | **0.053** | **0.027** | **0.121** | **0.089** | **0.048** | **0.0749** | **0.09** | **0.0674** | **0.102** | **0.0775** | **0.0669** | **0.078** | **0.071** | **0.046** | **0.079** | **0.05** | -- |
| Cadmium, Dissolved | ND | ND | **271** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.030 | <0.030 | <0.005 | <0.00100 | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | < 0.03 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **0.0052** | ND | ND | ND | ND | ND | ND | <0.040 | <0.040 | <0.005 | <0.0100 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | < 0.04 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | **0.03** | **0.014** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.005 | <0.005 | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | **0.15** | **< 0.005** | < 0.005 | < 0.005 | < 0.005 | -- |
| Lead, Dissolved | ND | ND | ND | ND | **0.0031** | ND | ND | **0.042** | ND | ND | **0.0026** | ND | ND | ND | ND | **0.15** | ND | <0.080 | <0.080 | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | < 0.08 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | ND | **0.0106** | ND | ND | ND | ND | ND | ND | ND | ND | **0.027** | ND | **0.032** | **0.0073** | **0.01** | **0.013** | **0.022** | **0.018** | **0.020** | **0.0169** | <0.0500 | < 0.05 | < 0.05 | **0.0103** | **0.0132** | < 0.01 | 0.01 | < 0.01 | **0.012** | <0.01 | -- |
| Zinc, Dissolved | ND | **0.0212** | **0.015** | ND | ND | **0.023** | **0.03** | ND | ND | ND | **0.062** | ND | ND | ND | ND | ND | ND | <0.050 | <0.050 | <0.020 | <0.0200 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
(J) = estimated.

-- = No PRG assigned.
< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| | MONITORING WELL MW-10S (Southeast Area) | | | | | | | | | | | | | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CONSTITUENT** **Date Sampled** | **3/1/88** | **8/1/88** | **7/23/92** | **11/8/95** | **8/27/96** | **11/18/97** | **4/21/98** | **10/15/98** | **4/12/99** | **10/13/99** | **5/4/00** | **10/2/00** | **4/19/01** | **10/31/01** | **4/23/02** | **10/25/02** | **4/16/03** | **10/15/03** | **4/20/04** | **10/22/04** | **4/19/05** | **10/13/05** | **4/26/06** | **4/17/07** | **10/17/07** | **4/14/08** | **4/20/09** | **(µg/L)** |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | ND | ND | ND | NA | NA | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <20.0 | <20.0 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | ND | **7** | ND | **1.1** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | ND | ND | ND | **4.4** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | NA | <2.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | ND | ND | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | ND | ND | NA | ND | ND | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | **4.5** | <1.0 | <1.0 | <1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | ND | ND | ND | NA | NA | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | ND | ND | ND | **2.2** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | <5.0 | <2.0 (J) | <2.0 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | ND | ND | NA | ND | ND | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | **630** | **140** | **91** | ND | ND | ND | ND | **28** | **6.3** | **7.9** | ND | **5.7** | ND | ND | **1.9** | **5.1** | **1.1** | <1.0 | <1.0 | **1.2** | < 1 | **2.8** | < 1 | < 1 | **2.9** | **2.9** | <1 | **973** |
| 1,2-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | ND | **20** | ND | ND | ND | ND | ND | ND | ND | **6.8** | ND | ND | ND | ND | **1.4** | **2.6** | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | NA | NA | NA | **37,000** | **15,000** | NA | **5,300** | **3,300** | **7,900** | **6.8** | **3,600** | **3,400** | **1,900** | **118** | **2,980** | **5,250** | **44** | **1,130** | **1,100** | **1,400** | **330** | **1,500** | **420** | **240** | **976** | **70** | **15** | **70** |
| trans-1,2-Dichloroethene | NA | NA | NA | **440** | **350** | NA | **100** | **170** | **200** | **12,000** | **170** | **100** | **130** | **6.2** | **162** | **148** | **47** | **81** | **130** | **100** | **26** | **65** | **47** | **22** | **77** | **10** | **2** | **100** |
| 1,2-Dichloroethene, Total | **56,000** | **26,000** | **8,700** | **37,440** | **15,350** | **8,140** | **5,400** | **3,470** | **8,100** | **12,007** | **3,770** | **3,500** | **2,030** | **124.2** | **3,142** | **5,398** | **91** | **1,211** | **1,230** | **1,500** | **356** | **1,565** | **467** | **262** | **1,053** | **79** | **17** | (170) |
| 1,2-Dichloropropane | ND | ND | ND | **6.3** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **1.2** | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | ND | **4** | ND | **5.7** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | ND | NA | NA | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | ND | **3,500** | **9,000** | **270** | **50** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | ND | **2** | ND | **5** | **70** | ND | ND | **11** | ND | ND | ND | ND | ND | ND | **3.4** | **4.3** | **1.3** | **1.9** | **12** | **2.7** | < 1 | **2** | **1.8** | < 1 | **5.7** | < 1 | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | ND | ND | NA | ND | ND | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | NA | NA | < 5 | < 5 | < 5 | NA | <5 | <5 | <5 | -- |
| Vinyl Chloride | **5,500** | **2,800** | **3,100** | **2,700** | **650** | **370** | **130** | **1,000** | **320** | **700** | ND | **120** | ND | ND | **46.6** | **129** | **122** | **76** | **8.5** | **4** | **1.4** | **81** | **2** | **1.3** | **13.9** | *< 1* | *< 1* | **0.0283** |
| Xylenes, Total | ND | **28** | **96** | **21.3** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | <3 | <3 | <3 | **828** |
| **TOTAL VOCs** | **62,130** | **32,501** | **20,987** | **40,456** | **16,120** | **8,510** | **5,530** | **4,509** | **8,426** | **12,722** | **3,770** | **3,626** | **2,030** | **124.2** | **3,195** | **5,540** | **215** | **1,293** | **1,251** | **1,508** | **357** | **1,651** | **471** | **264** | **1,076** | **82** | **17** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | **0.009** | ND | ND | **0.006** | **0.002** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | <0.10 | <0.100 | **0.0242** | **<0.0100** | **0.0107** | < 0.01 | < 0.01 | < 0.1 | < 0.1 | < 0.1 | <0.1 | -- |
| Barium, Dissolved | **0.239** | **0.0537** | **0.137** | **0.04** | **0.04** | **0.062** | ND | **0.032** | **0.023** | **0.36** | **0.068** | **0.033** | **0.047** | **0.064** | **0.061** | NA | **0.035** | <0.020 | **0.0324** | **0.0686** | **0.0539** | < 0.02 | **0.0472** | **0.081** | **0.05** | **0.069** | **0.05** | -- |
| Cadmium, Dissolved | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | <0.030 | <0.030 | <0.005 | <0.00100 | < 0.001 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | < 0.03 | <0.03 | -- |
| Chromium, Dissolved total | **0.017** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | <0.040 | <0.040 | **0.00849** | **<0.0100** | < 0.01 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | < 0.04 | <0.04 | -- |
| Cyanide, Total | **0.006** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **0.0094** | ND | **0.037** | NA | <0.005 | **0.011** | **0.0381** | **0.0128** | **0.108** | < 0.005 | < 0.005 | **0.2** | **< 0.005** | **0.028** | **0.039** | -- |
| Lead, Dissolved | ND | ND | ND | ND | **0.0028** | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.17 | NA | <0.080 | <0.080 | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | < 0.08 | <0.08 | -- |
| Nickel, Dissolved | ND | ND | **0.021** | ND | ND | **0.021** | ND | ND | ND | ND | ND | **0.009** | **0.0052** | **0.012** | ND | NA | **0.035** | **0.017** | **0.0218** | **<0.0500** | < 0.05 | < 0.05 | < 0.05 | < 0.01 | **0.01** | **0.01** | <0.01 | -- |
| Zinc, Dissolved | ND | **0.0089** | ND | ND | ND | ND | ND | ND | ND | **0.34** | ND | ND | ND | ND | ND | NA | <0.050 | <0.050 | **0.0295** | **0.0232** | **0.0325** | < 0.02 | < 0.02 | < 0.05 | < 0.05 | < 0.05 | <0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
October 2002 - dry conditions; VOC only.
2003 and subsequent data were validated to Level II

-- = No PRG assigned.
< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT | MONITORING WELL MW-11S (Southeast Area) | | | | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date Sampled | 3/1/88 | 8/1/88 | 7/24/92 | 11/8/95 | 8/27/96 | 11/6/96 | 6/13/97 | 10/15/98 | 10/13/99 | 10/2/00 | 10/31/01 | 10/24/02 | 10/15/03 | 10/22/04 | 10/13/05 | 10/18/06 | 10/17/07 | 10/16/08 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | | | |
| Acetone | ND | ND | ND | NA | NA | NA | NA | NA | ND | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | ND | ND | ND | NA | NA | NA | NA | NA | NA | NA | NA | NA | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | ND | ND | NA | ND | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | ND | ND | ND | NA | NA | NA | NA | NA | ND | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | ND | ND | ND | ND | ND | NA | ND | ND | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | ND | ND | NA | ND | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | ND | ND | ND | **19** | **5.3** | **8.3** | **6.6** | ND | **5.4** | **5.7** | **8.6** | **5.9** | **5.9** | **3.7** | **3.7** | **2** | < 1 | < 1 | **973** |
| 1,2-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | **2.0** | *< 1* | **3.1** | **5.2** | **4.1** | **0.0167** |
| cis-1,2-Dichloroethene | NA | NA | ND | **280** | **150** | **200** | **170** | **160** | **440** | **460** | **669** | **694** | **746** | **490** | **400** | **460** | **483** | **376** | **70** |
| trans-1,2-Dichloroethene | NA | NA | ND | **15** | **6.5** | **10** | **10** | ND | ND | **12** | **15.7** | **8.7** | <1.0 | **5.6** | **8.3** | **19** | < 1 | **3.5** | **100** |
| 1,2-Dichloroethene, Total | **44** | **19** | ND | **295** | **157** | **210** | **180** | **160** | **440** | **472** | **685** | **703** | **746** | **496** | **408** | **479** | **483** | **380** | (170) |
| 1,2-Dichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | ND | NA | NA | NA | NA | NA | ND | ND | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 J | **1.43** |
| Toluene | ND | ND | ND | ND | **1.5** | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | ND | ND | ND | **4.1** | **17** | **3.8** | **4.3** | **8** | ND | **6.2** | **10.5** | **4.0** | **4.4** | **4.7** | **20** | **1.8** | **1.2** | **1.1** | **2.54** |
| 1,2,4-Trimethylbenzene | ND | ND | NA | ND | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | **4** | **3** | **20** | **18** | **12** | **14** | **18** | **64** | **190** | **160** | **112** | **120** | **138** | **2.2** | **5.1** | **78** | **104** | **130** | **0.0283** |
| Xylenes, Total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | **48** | **22** | **20** | **336** | **192** | **236** | **209** | **232** | **635** | **644** | **816** | **833** | **894** | **508** | **437** | **564** | **593** | **515** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | ND | ND | ND | **0.001** | ND | ND | ND | ND | ND | ND | ND | ND | <0.100 | <0.0100 | < 0.01 | < 0.01 | < 0.1 | < 0.1 | -- |
| Barium, Dissolved | **0.418** | **0.285** | **0.17** | **0.11** | **0.05** | ND | ND | **0.042** | **0.082** | **0.059** | **0.085** | **0.122** | **0.106** | **0.0830** | **0.103** | **0.0793** | **0.0780** | **0.0850** | -- |
| Cadmium, Dissolved | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.030 | <0.00100 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.040 | <0.0100 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | ND | **0.04** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | -- |
| Lead, Dissolved | ND | ND | ND | ND | **0.0028** | ND | ND | **0.015** | ND | ND | ND | ND | <0.080 | <0.00500 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | ND | ND | ND | ND | **0.03** | ND | ND | ND | ND | **0.006** | ND | ND | <0.010 | <0.0500 | < 0.05 | < 0.05 | < 0.01 | < 0.01 | -- |
| Zinc, Dissolved | **0.026** | **0.0145** | **0.122** | ND | ND | ND | **0.021** | ND | **0.025** | ND | ND | **0.052** | <0.050 | <0.0200 | < 0.02 | < 0.02 | < 0.05 | < 0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT / Date Sampled | MONITORING WELL MW-13S (Southeast Area) | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8/1/88 | 11/1/01 | 4/23/02 | 10/24/02 | 10/17/03 | 10/22/04 | 10/14/05 | 10/19/06 | 10/17/07 | 10/17/08 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | | | | |
| Acetone | ND | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | ND | NA | NA | NA | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | ND | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **973** |
| 1,2-Dichloroethane | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | NA | **350** | **200** | **214** | **128** | **87** | **75** | **51** | **66** | **36** | **70** |
| trans-1,2-Dichloroethene | NA | **12** | **6.4** | **6.1** | **3.3** | **1.9** | **2.4** | <1 | <1 | **1.6** | **100** |
| 1,2-Dichloroethene, Total | **28** | **362** | **206** | **220** | **131** | **89** | **77** | **51** | **66** | **37** | (170) |
| 1,2-Dichloropropane | ND | **17** | **8.7** | **13** | **7.1** | <1.0 | **10** | **5.6** | **5.1** | **5.1** | **1.25** |
| Ethylbenzene | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | ND | **152** | **140** | **181** | **99.3** | **120** | **270** | **37** | **125** | **150** | **2.54** |
| 1,2,4-Trimethylbenzene | ND | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | ND | **9.4** | **12** | **8.4** | **17.6** | **13** | **2.9** | **13** | **8.9** | **3.1** | **0.0283** |
| Xylenes, Total | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | **28** | **540** | **367** | **423** | **255** | **222** | **360** | **107** | **205** | **195** | -- |
| **Metals (mg/L)** | | | | | | | | | | | |
| Arsenic, Dissolved | **0.0036** | ND | ND | ND | <0.100 | <0.0100 | < 0.01 | < 0.01 | < 100 | < 100 | -- |
| Barium, Dissolved | **0.0705** | **0.19** | **0.12** | **0.218** (J) | **0.177** | **0.106** | **0.197** | **0.137** | **0.159** | **0.2** | -- |
| Cadmium, Dissolved | ND | ND | ND | ND | <0.030 | <0.00100 | < 0.001 | < 0.001 | < 30 | < 30 | -- |
| Chromium, Dissolved total | ND | ND | ND | ND | <0.040 | <0.0100 | < 0.01 | < 0.01 | < 40 | < 40 | -- |
| Cyanide, Total | **0.048** | NA | NA | NA | NA | NA | NA | NA | NA | NA | -- |
| Lead, Dissolved | ND | ND | **0.16** | ND | <0.080 | <0.00500 | < 0.005 | < 0.005 | < 80 | < 80 | -- |
| Nickel, Dissolved | **0.0167** | ND | ND | ND | <0.010 | <0.0500 | < 0.05 | **0.0104** | < 10 | < 10 | -- |
| Zinc, Dissolved | **0.0542** | ND | ND | **0.054** (J) | <0.050 | <0.0200 | < 0.02 | < 0.02 | < 50 | < 50 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II

-- = No PRG assigned.
< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT / Date Sampled | MONITORING WELL MW-13D (Southeast Area) 1/28/2002[1] | PRG (µg/L) |
|---|---|---|
| **VOCs (µg/L)** | | |
| Acetone | ND | **3,650** |
| Benzene | ND | **0.617** |
| Bromomethane | ND | -- |
| 2-Butanone (MEK) | ND | -- |
| n-Butylbenzene | ND | -- |
| Carbon Disulfide | ND | **768** |
| Chloroethane | ND | -- |
| Chloroform | ND | **0.274** |
| Dibromomethane | ND | -- |
| 1,1-Dichloroethane | ND | **973** |
| 1,2-Dichloroethane | ND | -- |
| 1,1-Dichloroethene | ND | **0.0167** |
| cis-1,2-Dichloroethene | ND | **70** |
| trans-1,2-Dichloroethene | ND | **100** |
| 1,2-Dichloroethene, Total | ND | (170) |
| 1,2-Dichloropropane | ND | **1.25** |
| Ethylbenzene | ND | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | **487** |
| Tetrachloroethene | ND | **1.43** |
| Toluene | ND | **1,000** |
| 1,1,1-Trichloroethane | ND | **200** |
| 1,1,2-Trichloroethane | ND | **0.314** |
| Trichloroethene | ND | **2.54** |
| 1,2,4-Trimethylbenzene | ND | -- |
| Vinyl Chloride | ND | **0.0283** |
| Xylenes, Total | ND | **828** |
| **TOTAL VOCs** | ND | -- |
| **Metals (mg/L)** | | |
| Arsenic, Dissolved | <0.005 | -- |
| Barium, Dissolved | **0.10** | -- |
| Cadmium, Dissolved | <0.03 | -- |
| Chromium, Dissolved total | <0.04 | -- |
| Cyanide, Total | NA | -- |
| Lead, Dissolved | <0.08 | -- |
| Nickel, Dissolved | <0.02 | -- |
| Zinc, Dissolved | <0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
[1] Data suspect due to well integrity.

-- = No PRG assigned.
< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
ND = Not detected greater than the method detection limit.
NA = Not analyzed.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| | MONITORING WELL MW-14S (Aboveground Storage Tank Area) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CONSTITUENT** **Date Sampled** | **8/1/88** | **7/23/92** | **11/7/95** | **8/27/96** | **6/11/97** | **11/18/97** | **4/21/98** | **10/15/98** | **4/12/99** | **10/14/99** | **5/4/00** | **10/2/00** | **4/19/01** | **10/30/01** | **4/23/02** | **10/23/02** | **4/16/03** | **10/15/03** | **4/20/04** | **10/19/04** | **4/19/05** | **10/13/05** | **4/26/06** | **10/18/06** | **4/17/07** | **10/17/07** | **4/14/08** | **10/14/08** | **4/22/09** | **(µg/L)** |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | ND | ND | NA | NA | NA | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <20.0 | <20.0 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | NA | <2.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | ND | ND | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | ND | NA | ND | ND | ND | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | <1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | ND | ND | NA | NA | NA | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | ND | ND | **5.4** | **22** | **6.6** | **6.6** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **5.8** | <5.0 | <2.0 (J) | <2.0 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | **16** | <2 | -- |
| Chloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | ND | NA | ND | ND | ND | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | **270** | **86** | **320** | **260** | **150** | **160** | **74** | **63** | **19** | **21** | **12** | **13** | **5.7** | **7.4** | **8.4** | **10.2** | **8.6** | **9.1** | **4.9** | **13** | **6.8** | **12** | **2.5** | **3.8** | **7.9** | **11** | **11** | **22** | **11** | **973** |
| 1,2-Dichloroethane | ND | ND | **1.1** | **1.3** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | NA | NA | **45** | **20** | **3.9** | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1** | **2** | **1** | **70** |
| trans-1,2-Dichloroethene | NA | NA | ND | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | **< 1** | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **100** |
| 1,2-Dichloroethene, Total | **650** | **71** | **45** | **20** | **3.9** | **2.3** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **2** | **1** | (170) |
| 1,2-Dichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | NA | NA | NA | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | ND | ND | ND | **1.2** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | ND | **5** | **10** | **9.1** | **4.9** | **2.6** | ND | ND | **5.2** | ND | ND | ND | **14** | **15.1** | **4.7** | **2.0** | **9.5** | **3.5** | **4.3** | **10** | **10** | **6.8** | **1.5** | < 1 | **2.2** | **5.6** | **2.7** | < 1 | **3.5** | **200** |
| 1,1,2-Trichloroethane | **6** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | ND | ND | **5.5** | **10** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | **3.0** | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | **1.9** | *< 1* | *< 1* | *< 1* | **2.54** |
| 1,2,4-Trimethylbenzene | ND | NA | ND | ND | ND | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | NA | NA | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | **140** | **47** | **15** | **5.4** | **1.1** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **4.1** | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **3.4** | <1.0 | **0.0283** |
| Xylenes, Total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | **1.3** | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | **1,066** | **209** | **402.0** | **329.0** | **166.5** | **171.5** | **74** | **63** | **24.2** | **21** | **12** | **13** | **19.7** | **22.5** | **13.1** | **16.3** | **23.9** | **12.6** | **13.5** | **23** | **16.8** | **18.8** | **4.0** | **3.8** | **10.1** | **18.9** | **14.1** | **43.4** | **15.7** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | **0.0054** | **0.0077** | **0.014** | **0.004** | ND | ND | ND | ND | ND | **0.0079** | ND | **0.021** | ND | ND | ND | ND | <0.10 | <0.100 | **0.0221** | **0.0136** | **0.0135** | **0.0203** | <0.100 | **0.0102** | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | -- |
| Barium, Dissolved | **0.0891** | **0.062** | **0.05** | **0.05** | **0.066** | **0.069** | **0.066** | **0.084** | **0.056** | **0.1** | **0.095** | **0.11** | **0.07** | **0.065** | **0.089** | **0.13** | **0.123** | **0.088** | **0.117** | **0.121** | **0.109** | **0.133** | **0.103** | **0.0998** | **0.14** | **0.099** | **0.075** | **0.054** | **0.046** | -- |
| Cadmium, Dissolved | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.030 | <0.030 | <0.005 | <0.00100 | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | < 0.03 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.040 | <0.040 | <0.005 | <0.0100 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | < 0.04 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | **0.035** | **0.006** | ND | ND | ND | ND | **0.0078** | ND | **0.017** | ND | ND | **0.009** | ND | **0.014** | ND | ND | **0.006** | <0.005 | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | **0.22** | <0.005 | **0.0066** | **<0.005** | <0.005 | -- |
| Lead, Dissolved | ND | ND | ND | **0.0065** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.17 | ND | <0.080 | <0.080 | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | < 0.08 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | ND | ND | ND | 0.02 | **0.027** | **0.026** | **0.022** | ND | ND | ND | ND | **0.009** | **0.016** | **0.01** | **0.011** | **0.012** | <0.010 | <0.010 | **0.0102** | **<0.0500** | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | -- |
| Zinc, Dissolved | **0.0035** | **0.021** | ND | ND | **0.026** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.050 | <0.050 | **0.0280** | **<0.0200** | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
(J) = estimated.

-- = No PRG assigned.
< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT | Date Sampled | MONITORING WELL MW-15S (Aboveground Storage Tank Area) | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8/6/92 | 11/29/95 | 6/12/97 | 10/14/99 | 10/2/00 | 10/30/01 | 10/23/02 | 10/15/03 | 10/19/04 | 10/13/05 | 10/18/06 | 10/17/07 | 10/16/08 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | |
| Acetone | | ND | NA | NA | ND | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | | ND | NA | NA | NA | NA | NA | NA | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | | NA | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | | ND | NA | NA | ND | ND | ND | ND | <1.0 | <20 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | | ND | ND | ND | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | | NA | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | | **6** | **5.8** | **4.9** | ND | ND | **1.5** | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | | **10** | **13** | **41** | NA | ND | **33** | **5.9** | **13** | **2.9** | **5.8** | **2.6** | < 1 | < 1 | **70** |
| trans-1,2-Dichloroethene | | ND | ND | **2.5** | NA | ND | **2.3** | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **100** |
| 1,2-Dichloroethene, Total | | **10** | **13** | **44** | ND | ND | **35** | **5.9** | **13** | **2.9** | **5.8** | **2.6** | < 1 | < 1 | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | | ND | NA | NA | ND | ND | ND | ND | <12.5 | <20 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | | ND | **1.1** | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | | ND | ND | **65** | **5.8** | **11** | **145** | **14** | **93** | **13** | **8.5** | **34** | **7.6** | **14** | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | ND | ND | ND | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | | ND | **28** | **2.3** | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | | **16** | **48** | **116** | **6** | **11** | **182** | **20** | **106** | **16** | **14** | **37** | **8** | **14** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | | **0.0196** | ND | ND | **0.0059** | ND | ND | ND | <0.100 | <0.0100 | **0.0135** | <0.0100 | <0.10 | <0.10 | -- |
| Barium, Dissolved | | **0.219** | **0.14** | **0.053** | **0.086** | **0.097** | **0.09** | **0.106** | **0.079** | **0.103** | **0.0939** | **0.0803** | **0.12** | **0.05** | -- |
| Cadmium, Dissolved | | **0.015** | ND | ND | ND | ND | ND | ND | <0.030 | <0.00100 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | | ND | **0.011** | ND | ND | ND | ND | ND | <0.040 | <0.0100 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | | ND | ND | ND | ND | ND | ND | ND | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | -- |
| Lead, Dissolved | | ND | ND | **0.0038** | ND | ND | ND | ND | <0.080 | <0.00500 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | | ND | ND | ND | ND | **0.007** | ND | ND | **0.011** | <0.0500 | < 0.05 | **0.0108** | < 0.01 | **0.01** | -- |
| Zinc, Dissolved | | **0.047** | ND | **0.055** | ND | ND | ND | ND | <0.050 | **0.0210** | < 0.02 | **0.0273** | < 0.05 | < 0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT | Date Sampled | MONITORING WELL MW-16S (Aboveground Storage Tank Area) | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8/6/92 | 11/7/95 | 11/6/96 | 6/11/97 | 10/15/98 | 10/14/99 | 10/2/00 | 11/1/01 | 10/23/02 | 10/15/03 | 10/19/04 | 10/13/05 | 10/18/06 | 10/17/07 | 10/16/08 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | |
| Acetone | | ND | NA | NA | NA | NA | ND | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | | ND | NA | NA | NA | NA | NA | NA | NA | NA | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | | NA | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | | ND | NA | NA | NA | NA | ND | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | | ND | ND | NA | ND | ND | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | **2.6** | < 2 | < 2 | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | | NA | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | | **55** | **85** | **26** | **58** | **37** | **38** | ND | **6.1** | **30** | **63** | **26** | **21** | **35** | **26** | **21** | **973** |
| 1,2-Dichloroethane | | ND | **1.4** | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | | NA | **190** | **50** | **75** | NA | **93** | **93** | **18.5** | **87.4** | **147** | **73** | **93** | **110** | **77** | **57** | **70** |
| trans-1,2-Dichloroethene | | NA | ND | **1.3** | **5.3** | NA | NA | ND | ND | **2.5** | **11.0** | **2.2** | **1.1** | **5.0** | < 1 | **2.7** | **100** |
| 1,2-Dichloroethene, Total | | **41** | **190** | **51** | **80** | **130** | **93** | **93** | **19** | **90** | **158** | **75** | **94** | **115** | **77** | **59** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | | ND | NA | NA | NA | NA | ND | ND | ND | ND | <12.5 | 20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | | **8** | **2.7** | **1** | **2.9** | ND | **6.9** | ND | **1.4** | **10** | **56** | **17** | **6.7** | **47** | **35** | **21** | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | | ND | **6.9** | ND | ND | **47** | ND | ND | **1.0** | ND | **2.2** | <1.0 | **4.5** | < 1 | < 1 | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | | **100** | **41** | **19** | **16** | **37** | **15** | ND | ND | **15.6** | *<1.0* | **8.6** | **9.5** | **4.1** | **2.3** | **5.2** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | | **204** | **327** | **97** | **157** | **251** | **153** | **93** | **27** | **146** | **280** | **147** | **136** | **204** | **139** | **107** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | | **0.0025** | **0.003** | ND | ND | ND | ND | **0.021** | ND | ND | <0.100 | <0.0100 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | -- |
| Barium, Dissolved | | **0.05** | **0.06** | **0.065** | ND | **0.054** | **0.059** | **0.11** | **0.034** | **0.146** | **0.081** | **0.0755** | **0.102** | **0.0813** | **0.098** | **0.037** | -- |
| Cadmium, Dissolved | | ND | ND | ND | **0.00024** | ND | ND | ND | ND | ND | <0.030 | <0.00100 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.040 | <0.0100 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | | ND | ND | ND | **0.011** | ND | ND | **0.009** | ND | ND | **0.021** | <0.00500 | < 0.005 | **0.00386** | < 0.005 | < 0.005 | -- |
| Lead, Dissolved | | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.080 | <0.00500 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | | ND | ND | ND | ND | ND | ND | **0.009** | ND | ND | <0.010 | <0.0500 | < 0.05 | < 0.05 | < 0.01 | < 0.01 | -- |
| Zinc, Dissolved | | **0.038** | ND | ND | **0.028** | ND | ND | ND | ND | **0.06** | <0.050 | <0.0200 | **0.0242** | <0.0200 | <0.05 | <0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT / Date Sampled | MONITORING WELL MW-18S (Aboveground Storage Tank Area) 8/1/1992[1] | 11/1/01 | PRG (µg/L) |
|---|---|---|---|
| **VOCs (µg/L)** | | | |
| Acetone | ND | ND | **3,650** |
| Benzene | ND | ND | **0.617** |
| Bromomethane | ND | ND | -- |
| 2-Butanone (MEK) | NA | NA | -- |
| n-Butylbenzene | ND | ND | -- |
| Carbon Disulfide | ND | ND | **768** |
| Chloroethane | ND | ND | -- |
| Chloroform | ND | ND | **0.274** |
| Dibromomethane | ND | ND | -- |
| 1,1-Dichloroethane | ND | ND | **973** |
| 1,2-Dichloroethane | ND | ND | -- |
| 1,1-Dichloroethene | ND | ND | **0.0167** |
| cis-1,2-Dichloroethene | ND | ND | **70** |
| trans-1,2-Dichloroethene | ND | ND | **100** |
| 1,2-Dichloroethene, Total | ND | ND | (170) |
| 1,2-Dichloropropane | ND | ND | **1.25** |
| Ethylbenzene | ND | ND | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | **487** |
| Tetrachloroethene | ND | ND | **1.43** |
| Toluene | ND | ND | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | **200** |
| 1,1,2-Trichloroethane | ND | ND | **0.314** |
| Trichloroethene | ND | ND | **2.54** |
| 1,2,4-Trimethylbenzene | ND | ND | -- |
| Vinyl Chloride | ND | **1.6** | **0.0283** |
| Xylenes, Total | ND | ND | **828** |
| **TOTAL VOCs** | ND | **1.6** | -- |
| **Metals (mg/L)** | | | |
| Arsenic, Dissolved | ND | ND | -- |
| Barium, Dissolved | **0.177** | **0.084** | -- |
| Cadmium, Dissolved | ND | ND | -- |
| Chromium, Dissolved total | ND | ND | -- |
| Cyanide, Total | NA | NA | -- |
| Lead, Dissolved | ND | ND | -- |
| Nickel, Dissolved | ND | ND | -- |
| Zinc, Dissolved | **5.56** | **0.2** | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
[1] August 1992 data from Technical Memorandum (Warzyn, November 1992).
-- = No PRG assigned.

**Bold** = Analyte detected greater than the laboratory reporting limit.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| | MONITORING WELL MW-83AS (Southeast Area) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CONSTITUENT** **Date Sampled** | **3/1988[1]** | **8/1988[1]** | **7/23/1992** | **11/08/1995** | **8/27/1996** | **6/13/1997** | **11/18/1997** | **4/21/1998** | **10/15/1998** | **4/12/1999** | **10/13/1999** | **5/04/2000** | **10/02/2000** | **4/19/2001** | **10/31/2001** | **4/23/2002** | **10/24/2002** | **4/16/2003** | **10/15/2003** | **4/20/2004** | **10/20/2004** | **4/19/2005** | **10/12/2005** | **4/26/2006** | **10/18/2006** | **4/17/07** | **10/17/07** | **4/14/08** | **10/14/08** | **4/20/09** | **(µg/L)** |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | ND | ND | ND | NA | NA | NA | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <20.0 | <20.0 | <20 | <20 | < 20 | < 20 | < 20 | **27** | < 20 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | NA | <2.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | ND | ND | ND | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | ND | ND | NA | ND | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | ND | ND | ND | NA | NA | NA | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | ND | ND | ND | ND | ND | **5.1** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | <5.0 | <2.0 (J) | <2.0 | **2.3** | **2.1** | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | ND | ND | NA | ND | ND | ND | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | ND | ND | ND | **48** | **72** | **51** | **56** | ND | **42** | **39** | **43** | **38** | **26** | ND | **31** | **29.1** | **33.3** | **18.1** | **23.7** | **21** | **23** | **24** | **19** | **14** | **17** | **14** | **16** | **16** | **13** | **10** | **973** |
| 1,2-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | **4.1** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | **1.5** | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | ND | ND | NA | **15,000** | **15,000** | **11,000** | NA | **5,200** | **1,300** | **4,000** | **3,400** | **2,200** | **1,500** | **750** | **1,730** | **1,190** | **1,190** | **698** | **839** | **700** | **800** | **800** | **570** | **360** | **430** | **435** | **406** | **331** | **240** | **247** | **70** |
| trans-1,2-Dichloroethene | ND | ND | NA | **68** | **110** | **56** | NA | ND | **32** | **21** | **17** | **14** | **5.9** | ND | **21** | **12.6** | **2.3** | **2.5** | <1.0 | **1.6** | **1.5** | **2.2** | **1.3** | < 1 | **2.6** | < 1 | < 1 | < 1 | < 1 | < 1 | **100** |
| 1,2-Dichloroethene, Total | ND | ND | **12,000** | **15,068** | **15,110** | **11,056** | **8,700** | **5,200** | **1,332** | **4,021** | **3,417** | **2,214** | **1,506** | **750** | **1,751** | **1,203** | **1,192** | **701** | **839** | **702** | **802** | **802** | **571** | **360** | **433** | **435** | **406** | **331** | **240** | **247** | (170) |
| 1,2-Dichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | ND | NA | NA | NA | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 J | < 1 J | **1.43** |
| Toluene | ND | **0.7** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **0.314** |
| Trichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | **1.0** | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | ND | ND | NA | ND | ND | ND | NA | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | NA | NA | < 5 | < 5 | < 5 | < 5 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | **110** | **140** | **1,200** | **1,700** | **1,600** | **1,400** | **1,400** | **900** | **610** | **990** | **830** | **550** | **380** | **220** | **399** | **387** | **447** | **338** | **486** | **370** | **640** | **670** | **520** | **660** | **540** | **900** | **620** | **437** | **619** | **626** | **0.0283** |
| Xylenes, Total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | **110** | **141** | **13,200** | **16,816** | **16,782** | **12,516** | **10,156** | **6,100** | **1,984** | **5,050** | **4,290** | **2,802** | **1,912** | **970** | **2,181** | **1,619** | **1,673** | **1,057** | **1,349** | **1,094** | **1,465** | **1,500** | **1,112** | **1,034** | **1,017** | **1,349** | **1,042** | **784** | **872** | **883** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | ND | ND | ND | **0.003** | ND | **0.0022** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.10 | <0.100 | <0.0100 | <0.0100 | **0.0123** | < 0.01 | < 0.01 | < 0.01 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | -- |
| Barium, Dissolved | **0.186** | **0.117** | **0.111** | **0.18** | **0.09** | ND | ND | **0.048** | **0.055** | **0.088** | **0.09** | **0.094** | **0.068** | **0.063** | **0.17** | **0.068** | **0.16** | **0.125** | **0.078** | **0.091** | **0.109** | **0.116** | **0.112** | **0.104** | **0.102** | **0.096** | **0.078** | **0.095** | **0.068** | **0.072** | -- |
| Cadmium, Dissolved | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.030 | <0.030 | <0.005 | <0.00100 | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | < 0.03 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.040 | <0.040 | <0.005 | <0.0100 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | < 0.04 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | ND | **0.022** | **0.006** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.005 | **0.0089** | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | **0.032** | < 0.005 | **0.005** | < 0.005 | < 0.005 | -- |
| Lead, Dissolved | ND | ND | ND | ND | **0.011** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **0.18** | ND | <0.080 | <0.080 | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | < 0.08 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **0.002** | ND | ND | ND | ND | <0.010 | <0.010 | <0.0100 | <0.0500 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | -- |
| Zinc, Dissolved | ND | **0.0054** | ND | ND | ND | **0.041** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | **0.063** | <0.050 | <0.050 | <0.0200 | <0.0200 | **0.0314** | < 0.02 | < 0.02 | < 0.02 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
[1] Possible mislabeling of sample occurred in 1988.
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
(J) = estimated.

-- = No PRG assigned.
< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT / Date Sampled | MONITORING WELL MW-83AD (Southeast Area) | | | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3/1/88 | 8/1/88 | 7/31/92 | 11/8/95 | 11/6/96 | 6/13/97 | 10/15/98 | 10/13/99 | 10/2/00 | 10/31/01 | 10/24/02 | 10/15/03 | 10/20/04 | 10/12/05 | 10/18/06 | 10/17/07 | 10/16/08 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | | |
| Acetone | ND | ND | ND | NA | NA | NA | NA | NA | NA | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | ND | ND | ND | NA | NA | NA | NA | NA | NA | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | ND | ND | NA | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | ND | ND | ND | NA | NA | NA | NA | ND | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | ND | ND | ND | ND | NA | ND | ND | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | ND | ND | NA | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | ND | ND | **0.6** | ND | 1.5 | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **973** |
| 1,2-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | ND | NA | NA | **140** | **88** | **60** | **38** | **33** | **8.9** | **9.3** | **3.5** | **2.4** | **2.2** | **2** | **5.3** | **11** | **23** | **70** |
| trans-1,2-Dichloroethene | ND | NA | NA | ND | ND | ND | ND | ND | NA | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **100** |
| 1,2-Dichloroethene, Total | ND | **7.2** | **10** | **140** | **88** | **60** | **38** | **33** | **8.9** | **9.3** | **3.5** | **2.4** | **2.2** | **2** | **5.3** | **11** | **23** | (170) |
| 1,2-Dichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | ND | NA | NA | NA | NA | ND | ND | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | ND | **0.9** | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | **13** | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | ND | ND | NA | ND | NA | NA | NA | ND | ND | ND | ND | *<1.0* | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | **4** | **38** | **3** | **110** | **73** | **54** | **8.8** | **35** | **16** | **3.9** | **5.8** | **3.4** | *<1.0* | **1.2** | **8.7** | **6.6** | **19** | **0.0283** |
| Xylenes, Total | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | **4** | **46** | **14** | **250** | **163** | **114** | **47** | **81** | **25** | **13** | **9.3** | **5.8** | **2.2** | **3.2** | **14** | **18** | **42** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | NA | NA | ND | **0.004** | ND | ND | ND | ND | ND | ND | ND | <0.100 | <0.0100 | **0.0161** | <0.01 | < 0.1 | < 0.1 | -- |
| Barium, Dissolved | NA | NA | **0.022** | **0.25** | **0.24** | **0.27** | **0.17** | **0.19** | **0.17** | **0.16** | **0.288** | **0.217** | **0.149** | **0.213** | **0.209** | **0.17** | **0.15** | -- |
| Cadmium, Dissolved | NA | NA | **0.005** | ND | ND | ND | ND | ND | ND | ND | ND | <0.030 | <0.00100 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | NA | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.040 | <0.0100 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | NA | NA | **0.07** | ND | ND | **0.014** | ND | ND | ND | ND | ND | <0.005 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | -- |
| Lead, Dissolved | NA | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.080 | <0.00500 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | NA | NA | ND | ND | ND | ND | ND | ND | **0.004** | ND | ND | <0.010 | <0.0500 | < 0.05 | < 0.05 | < 0.01 | < 0.01 | -- |
| Zinc, Dissolved | NA | NA | ND | **0.01** | ND | **0.02** | **0.022** | **0.02** | ND | **0.069** | **0.057** | <0.050 | **0.0287** | < 0.02 | < 0.02 | < 0.05 | < 0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| | MONITORING WELL MW-83B (Northeast Area) | | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CONSTITUENT** **Date Sampled** | **3/1988** | **7/31/92** | **6/7/96** | **11/6/96** | **6/12/97** | **10/15/98** | **10/2/00** | **10/31/01** | **10/23/02** | **10/15/03** | **10/20/04** | **10/12/05** | **10/18/06** | **10/17/07** | **10/16/08** | **(µg/L)** |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | |
| Acetone | **270** | ND | ND | NA | NA | ND | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | **23** | ND | ND | NA | NA | NA | NA | NA | NA | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | ND | NA | ND | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | ND | NA | ND | NA | NA | ND | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | ND | ND | ND | NA | ND | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | ND | NA | ND | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **973** |
| 1,2-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **70** |
| trans-1,2-Dichloroethene | ND | NA | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **100** |
| 1,2-Dichloroethene, Total | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | (170) |
| 1,2-Dichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | ND | NA | NA | ND | ND | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | ND | NA | ND | NA | NA | ND | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0283** |
| Xylenes, Total | ND | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | **293** | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- |
| **Metals (mg/L)** | | | | | | | | | | | | | | | | |
| Arsenic, Dissolved | ND | ND | **0.003** | **0.0031** | **0.0027** | ND | **0.0054** | ND | ND | <0.100 | <0.0100 | < 0.01 | < 0.01 | < 0.1 | < 0.1 | -- |
| Barium, Dissolved | ND | ND | **0.16** | **0.22** | **0.19** | **0.16** | **0.26** | **0.18** | **0.227** | **0.257** | **0.225** | **0.203** | **0.195** | **0.23** | **0.17** | -- |
| Cadmium, Dissolved | ND | **0.005** | ND | ND | ND | ND | ND | ND | ND | <0.030 | <0.00100 | < 0.001 | < 0.001 | < 0.03 | < 0.03 | -- |
| Chromium, Dissolved total | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.040 | <0.0100 | < 0.01 | < 0.01 | < 0.04 | < 0.04 | -- |
| Cyanide, Total | ND | **0.019** | ND | ND | ND | ND | ND | ND | ND | **0.0059** | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | -- |
| Lead, Dissolved | ND | ND | ND | ND | ND | ND | ND | ND | ND | <0.080 | <0.00500 | < 0.005 | < 0.005 | < 0.08 | < 0.08 | -- |
| Nickel, Dissolved | ND | ND | **0.02** | **0.021** | ND | ND | ND | ND | ND | <0.010 | <0.0500 | < 0.05 | < 0.05 | < 0.01 | < 0.01 | -- |
| Zinc, Dissolved | ND | ND | **0.1** | **0.081** | **0.029** | ND | ND | ND | ND | <0.050 | **0.0252** | **0.027** | <0.0200 | <0.05 | <0.05 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II

-- = No PRG assigned.
< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT | Date Sampled | MONITORING WELL MW-83DS (Formerly GW-83E; Southeast Area) | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8/1/88 | 11/1/01 | 4/23/02 | 10/24/02 | 10/17/03 | 10/22/04 | 10/14/05 | 10/19/06 | 10/17/07 | 10/17/08 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | | | | | |
| Acetone | | ND | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | | ND | NA | NA | NA | **14.4** | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | | ND | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | | ND | **1.1** | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | | ND | **191** | **350** | **320** | **239** | **190** | **110** | **79** | **66** | **47** | **70** |
| trans-1,2-Dichloroethene | | ND | **1.1** | ND | ND | **1.1** | <1.0 | < 1 | < 1 | < 1 | < 1 | **100** |
| 1,2-Dichloroethene, Total | | ND | **192** | **350** | **320** | **240** | **190** | **110** | **79** | **66** | **47** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | **1.0** | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | | ND | ND | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | | ND | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | | ND | **16** | **120** | **188** | **80** | **76** | **54** | **31** | **44** | **36** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |
| **TOTAL VOCs** | | ND | **209** | **470** | **509** | **334** | **266** | **164** | **110** | **110** | **82** | -- |
| **Metals (mg/L)** | | | | | | | | | | | | |
| Arsenic, Dissolved | | **0.003** | ND | ND | ND | <0.100 | <0.0100 | < 0.01 | < 0.01 | < 100 | < 100 | -- |
| Barium, Dissolved | | **0.211** | **0.077** | **0.12** | **0.153** | **0.106** | **0.0947** | **0.139** | **0.139** | **0.0972** | **0.12** | -- |
| Cadmium, Dissolved | | ND | ND | ND | ND | <0.030 | <0.00100 | < 0.001 | < 0.001 | < 30 | < 30 | -- |
| Chromium, Dissolved total | | ND | ND | ND | ND | <0.040 | <0.0100 | < 0.01 | < 0.01 | < 40 | < 40 | -- |
| Cyanide, Total | | ND | NA | NA | NA | NA | NA | NA | NA | NA | NA | -- |
| Lead, Dissolved | | ND | ND | **0.16** | ND | <0.080 | <0.00500 | < 0.005 | < 0.005 | < 80 | < 80 | -- |
| Nickel, Dissolved | | ND | ND | ND | ND | <0.010 | <0.0500 | < 0.05 | < 0.05 | < 10 | < 10 | -- |
| Zinc, Dissolved | | ND | **0.062** | ND | ND | <0.050 | <0.0200 | < 0.02 | **0.0258** | < 50 | < 50 | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.
**Bold** = Analyte detected greater than the laboratory reporting limit.
*Italics* = Reporting limit greater than the corresponding PRG.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
Shaded = Analyte detected greater than the corresponding PRG.

**Table D-2**
**Monitoring Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT / Date Sampled | MONITORING WELL MW-83DD (Formerly GW-83D; Southeast Area) 8/1988 | 11/6/01 | PRG (µg/L) |
|---|---|---|---|
| **VOCs (µg/L)** | | | |
| Acetone | ND | ND | **3,650** |
| Benzene | ND | ND | **0.617** |
| Bromomethane | ND | ND | -- |
| 2-Butanone (MEK) | ND | NA | -- |
| n-Butylbenzene | ND | ND | -- |
| Carbon Disulfide | ND | ND | **768** |
| Chloroethane | ND | ND | -- |
| Chloroform | ND | ND | **0.274** |
| Dibromomethane | ND | ND | -- |
| 1,1-Dichloroethane | ND | ND | **973** |
| 1,2-Dichloroethane | ND | ND | -- |
| 1,1-Dichloroethene | ND | ND | **0.0167** |
| cis-1,2-Dichloroethene | ND | ND | **70** |
| trans-1,2-Dichloroethene | ND | ND | **100** |
| 1,2-Dichloroethene, Total | ND | ND | (170) |
| 1,2-Dichloropropane | ND | ND | **1.25** |
| Ethylbenzene | ND | ND | **700** |
| 4-Methyl-2-pentanone (MIBK) | ND | ND | **487** |
| Tetrachloroethene | ND | ND | **1.43** |
| Toluene | ND | ND | **1,000** |
| 1,1,1-Trichloroethane | ND | ND | **200** |
| 1,1,2-Trichloroethane | ND | ND | **0.314** |
| Trichloroethene | ND | ND | **2.54** |
| 1,2,4-Trimethylbenzene | ND | ND | -- |
| Vinyl Chloride | ND | ND | **0.0283** |
| Xylenes, Total | ND | ND | **828** |
| **TOTAL VOCs** | ND | ND | -- |
| **Metals (mg/L)** | | | |
| Arsenic, Dissolved | **0.057** | ND | -- |
| Barium, Dissolved | **0.009** | **0.05** | -- |
| Cadmium, Dissolved | ND | ND | -- |
| Chromium, Dissolved total | ND | ND | -- |
| Cyanide, Total | **0.022** | NA | -- |
| Lead, Dissolved | **0.0023** | ND | -- |
| Nickel, Dissolved | ND | ND | -- |
| Zinc, Dissolved | **0.004** | ND | -- |

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
Metals reported in milligrams per liter (mg/L).

**Bold** = Analyte detected greater than the laboratory reporting limit.
NA = Not analyzed.
ND = Not detected greater than the method detection limit.
-- = No PRG assigned.

**Table D-3**
**Columbia City Municipal Water Supply Well Results - Volatile Organic Compounds and Polychlorinated Biphenyls**
**Wayne Reclamation & Recycling**

| Date Sampled: | 10/14/1998 | | 12/9/1999 | | 10/3/2000 | | 10/31/2001 | | 10/23/2002 | | 10/16/2003 | | 10/22/2004 | | 10/18/2005 | | 1/13/2006 | 10/19/2006 | | 11/15/2007 | | 10/15/2008 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CONSTITUENT** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | | | | | | | | |
| Benzene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Bromodichloromethane | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Bromoform | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Bromomethane | <10 | <10 | <10 | <10 | <10 | <10 | <1.0 | <1.0 | <5.0 | <5.0 | <5.0 | <5.0 | <2.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| 2-Butanone (MEK) | <50 | <50 | <50 | <50 | <50 | <50 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 |
| Carbon Disulfide | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 |
| Carbon Tetrachloride | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Chlorobenzene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Chlorodibromomethane | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | <10 | <10 | <10 | <10 | <10 | <10 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <2.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Chloroform | <5.0 | <5.0 | <20 | <20 | <20 | <20 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Chloromethane | <10 | <10 | <10 | <10 | <10 | <10 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <2.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| 1,1-Dichloroethane | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| 1,2-Dichloroethane | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| 1,1-Dichlororethene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| cis-1,2-Dichloroethene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | **1.4*** | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| trans-1,2-Dichloroethene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| 1,2-Dichloropropane | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| cis-1,3-Dichloropropene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| trans-1,3-Dichloropropene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Ethylbenzene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| 2-Hexanone | <50 | <50 | <50 | <50 | <50 | <50 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 |
| Methylene Chloride | <10 | <10 | <10 | <10 | <10 | <10 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 |
| 4-Methyl-2-pentanone (MIBK) | <50 | <50 | <50 | <50 | <50 | <50 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <12.5 | <20 | <20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 |
| Styrene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| 1,1,2,2-Tetrachloroethane | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Tetrachloroethene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Toluene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| 1,1,1-Trichloroethane | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| 1,1,2-Trichloroethane | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Trichloroethene | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Vinyl Chloride | <2 | <2 | <5.0 | <5.0 | <2.0 | <2.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Xylenes, Total | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| **PCBs (µg/L)** | | | | | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | <1 | <1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | <1 | <1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | <1 | <1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | <1 | <1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | <1 | <1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | <1 | <1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | <1 | <1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Notes:**
Volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs) reported in micrograms per liter (µg/L).
PW = Public well.
< = Not detected above the reporting limit provided.
NA = Not analyzed.

**Table D-4**
**Columbia City Municipal Water Supply Well Results - Metals and Inorganics**
**Wayne Reclamation & Recycling**

| Date Sampled: | 10/14/1998 | | 12/9/1999 | | 10/3/2000 | | 10/31/2001 | | 10/23/2002 | | 10/16/2003 | | 10/22/2004 | | 10/18/2005 | | 10/19/2006 | | 11/15/2007 | | 10/15/2008 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CONSTITUENT** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** | **PW-7** | **PW-8** |
| **Total Metals (mg/L)** | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.050 | <0.050 | <0.050 | <0.050 | <0.100 | <0.100 | <0.200 | <0.200 | <0.200 | <0.200 | <0.200 | <0.200 | <0.200 | <0.200 | <0.200 | <0.200 |
| Antimony | <0.005 | <0.005 | <0.005 | <0.005 | <0.026 | <0.026 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | <0.100 | <0.100 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | **6.1** | <0.006 |
| Arsenic | **0.0083** | **0.0071** | **0.0091** | **0.0056** | <0.028 | <0.028 | **0.0087** | **0.0062** | **0.0087** | **0.0066** | <0.100 | <0.100 | <0.010 | <0.010 | <0.010 | 0.0106 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Barium | **0.15** | **0.13** | **0.12** | **0.11** | **0.15** | **0.13** | **0.161** | **0.138** | **0.150** | **0.132** | **0.155** | **0.135** | **0.144** | **0.138** | **0.164** | **0.143** | **0.165** | **0.133** | **0.157** | **0.13** | **0.194** | **0.147** |
| Beryllium | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | <0.005 | <0.005 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 |
| Cadmium | <0.005 | <0.005 | <0.010 | <0.010 | <0.005 | <0.005 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | <0.030 | <0.030 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Calcium | **86** | **83** | **70** | **67** | **87** | **80** | **80.2** | **75.8** | **89.8** (J) | **92.9** | **95.0** | **84.5** | **79** | **80.4** | **95.4** | **89.4** | **94.1** | **82** | **89** | **79.3** | **90.4** | **82.4** |
| Chromium | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.0020 | <0.0020 | <0.0020 | <0.0020 | <0.040 | <0.040 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Cobalt | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.020 | <0.020 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Copper | <0.010 | <0.010 | <0.010 | <0.010 | <0.005 | <0.005 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.020 | <0.020 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Iron | **2** | **1.6** | **1.6** | **1.4** | **1.8** | **1.5** | **1.82** | **1.5** | **1.85** | **1.66** | **2.15** | **1.67** | **1.79** | **1.6** | **2.02** | **1.64** | **2.1** | **1.59** | **1.97** | **1.56** | **1.21** | **1.62** |
| Lead | <0.005 | <0.005 | <0.005 | <0.005 | <0.018 | <0.018 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | <0.080 | <0.080 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 |
| Magnesium | **35** | **36** | **28** | **29** | **34** | **34** | **32.1** | **32.8** | **33.7** (J) | **36.7** | **38.1** | **36.0** | **30.9** | **34.1** | **36.5** | **36** | **36.2** | **33.3** | **35.3** | **33.6** | **36** | **35.2** |
| Manganese | **0.16** | **0.14** | **0.11** | **0.12** | **0.12** | **0.13** | **0.109** | **0.114** | **0.112** | **0.119** | **0.137** | **0.143** | **0.111** | **0.134** | **0.123** | **0.135** | **0.13** | **0.133** | **0.128** | **0.134** | **0.08** | **0.137** |
| Mercury | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Molybdenum | **0.023** | **0.031** | **0.025** | **0.031** | <0.020 | **0.021** | <0.020 | **0.021** | NA | NA | **0.036** | **0.043** | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | <0.020 | <0.020 | <0.020 | <0.020 | <0.002 | <0.0068 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Potassium | **1.4** | **1.5** | <5.0 | <5.0 | <5.0 | <5.0 | **1.6** | **1.8** | **1.8** | **2.4** | **1.90** | **2.00** | **1.59** | **1.87** | **1.93** | **2.11** | **1.9** | **1.93** | **1.87** | **1.9** | **2.12** | **2.15** |
| Selenium | <0.005 | <0.005 | <0.005 | <0.005 | <0.036 | <0.005 | <0.20 | <0.20 | <0.0050 | <0.0050 | <0.100 | <0.100 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Silver | <0.020 | <0.020 | <0.020 | <0.020 | <0.005 | <0.005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.040 | <0.040 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Sodium | **13** | **17** | **11** | **13** | **14** | **17** | **14** | **15.8** | **12.8** | **17.7** | **16.1** | **18.4** | **12.8** | **17** | **15.2** | **18.3** | **15.1** | **17.4** | **13.6** | **17.1** | **15.9** | **18.4** |
| Thallium | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.0100 | <0.0100 | <0.0010 | <0.0010 | <0.010 | <0.010 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | **0.0044** | <0.002 |
| Vanadium | <0.02 | <0.02 | <0.020 | <0.020 | <0.02 | <0.02 | <0.050 | <0.050 | <0.0050 | <0.0050 | <0.050 | <0.050 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Zinc | **0.024** | <0.020 | <0.020 | <0.020 | <0.020 | **0.04** | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| **Inorganics/Wet Chemistry (mg/L)** | | | | | | | | | | | | | | | | | | | | | | |
| Ammonia Nitrogen | **0.38** | **0.41** | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biological Oxygen Demand | <5 | <5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chemical Oxygen Demand | <10 | <10 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate Nitrogen | <0.02 | <0.02 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite Nitrogen | **0.021** | **0.022** | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | <5 | <5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Surfactants (MBAs) | **0.10** | <0.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Cyanide | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Total Kjeldahl Nitrogen | **0.64** | **0.73** | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phenols | <0.010 | <0.010 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus | <0.05 | <0.05 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Suspended Solids | <5 | <5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Notes:**

Total metals and inorganic/wet chemistry parameters reported in milligrams per liter (mg/L).
PW = Public well.
< = Not detected above the reporting limit provided.
**Bold** = Analyte detected above the laboratory reporting limit.
NA = Not analyzed.

**Table D-5**
**Recovery Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT | Date Sampled: | 8/27/1996 | 11/6/1996 | 6/11/1997 | 11/18/1997 | 4/21/1998 | 11/1/2001 | 10/25/2002 | 12/22/2003 | 10/22/2004 | 10/11/2005 | 10/20/2006 | 10/17/2007 | 10/17/2008 | PRG (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | RECOVERY WELL RW-1 (Aboveground Storage Tank Area) | | | | | | | | | | | | | |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | |
| Acetone | | NA | NA | NA | NA | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | ND | <1.0 | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | | NA | NA | NA | NA | NA | NA | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | | ND | NA | NA | NA | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | | NA | NA | NA | NA | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | | ND | **2.4** | **2.2** | **3.7** | ND | ND | ND | <5.0 | **2.4** | < 2 | < 2 | < 2 | **11.3** | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | ND | <1.0 | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | | ND | NA | NA | NA | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | | **170** | **180** | **110** | **190** | **140** | **103** | **11** | **74** | **100** | **26** | **53** | **28** | **34** | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | | ND | ND | ND | ND | ND | ND | ND | <1.0 | *<1.0* | *< 1* | *< 1* | **1.3** | *<1* | **0.0167** |
| cis-1,2-Dichloroethene | | **240** | **180** | **190** | **230** | **200** | **119** | **1,100** | **85** | **84** | **22** | **42** | **524** | **54** | **70** |
| trans-1,2-Dichloroethene | | ND | **1.4** | **1.4** | **2.9** | ND | **1.3** | **13** | <1.0 | <1.0 | < 1 | < 1 | **8.5** | **1.9** | **100** |
| 1,2-Dichloroethene, Total | | **240** | **181** | **191** | **233** | **200** | **120** | **1,113** | **85** | **84** | **22** | **42** | **533** | **55** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | | NA | NA | NA | NA | ND | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | | **22** | **23** | **20** | **31** | **19** | **13** | **13** | **15** | **17** | **7** | **9** | **12** | < 1 | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | <1.0 | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | | ND | ND | ND | ND | ND | **2.4** | **240** | **9.2** | **4.3** | **13** | **2.6** | **87** | **25** | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | NA | NA | NA | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | | **170** | ND | **100** | **140** | **80** | **55** | **60** | **40** | **38** | **9.1** | **16** | **74** | **14** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
-- = No PRG assigned.
< = Not detected above the reporting limit provided.
No data was collected during the October 1998 sampling event.
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II

ND = Not detected above the method detection limit.
NA = Not analyzed.
**Bold** = Analyte detected above laboratory reporting limit.
*Italics* = Reporting limit above the corresponding PRG.
Shaded = Analyte detected above the corresponding PRG.

# Table D-5
# Recovery Well Analytical Results
# Wayne Reclamation & Recycling

| CONSTITUENT | Date Sampled: | RECOVERY WELL RW-2 (Aboveground Storage Tank Area) | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|
| | | 8/27/1996 | 11/6/1996 | 6/11/1997 | 11/18/1997 | 4/21/1998 | 11/1/2001 | 10/25/2002 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | | |
| Acetone | | NA | NA | NA | NA | ND | ND | ND | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | ND | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | ND | -- |
| 2-Butanone (MEK) | | NA | NA | NA | NA | NA | NA | ND | -- |
| n-Butylbenzene | | ND | NA | NA | NA | ND | ND | ND | -- |
| Carbon Disulfide | | NA | NA | NA | NA | ND | ND | ND | **768** |
| Chloroethane | | ND | **2.6** | **2.2** | ND | ND | ND | ND | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | ND | **0.274** |
| Dibromomethane | | ND | NA | NA | NA | ND | ND | ND | -- |
| 1,1-Dichloroethane | | **8.1** | **160** | **110** | **21** | **52** | **18.2** | **19** | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | ND | -- |
| 1,1-Dichloroethene | | ND | ND | ND | ND | ND | ND | ND | **0.0167** |
| cis-1,2-Dichloroethene | | **6.6** | **150** | **180** | **53** | **78** | **45** | **55** | **70** |
| trans-1,2-Dichloroethene | | ND | **1.6** | **1.4** | ND | ND | **1.7** | ND | **100** |
| 1,2-Dichloroethene, Total | | **6.6** | **151.6** | **181.4** | **53** | **78** | **46.7** | **55** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | ND | ND | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | ND | **700** |
| 4-Methyl-2-pentanone (MIBK) | | NA | NA | NA | NA | ND | ND | ND | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | ND | ND | ND | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | ND | **1,000** |
| 1,1,1-Trichloroethane | | ND | **23.0** | **20.0** | ND | **6.1** | **4.4** | ND | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | **0.314** |
| Trichloroethene | | ND | ND | ND | ND | ND | **1.2** | ND | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | NA | NA | NA | ND | ND | ND | -- |
| Vinyl Chloride | | **7.7** | **150** | **97** | **19** | **34** | **5.3** | **10** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | ND | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L)
ND = Not detected above the method detection limit
NA = Not analyzed.
No data was collected during the October 1998 sampling event
October 2002 data was validated to Level IV; no flags were required for the data in this table collected on that date

**Bold** = Analyte detected above laboratory reporting limit
Shaded = Analyte detected above the corresponding PRG
-- = No PRG assigned.

**Table D-5**
**Recovery Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT | Date Sampled: | 8/27/1996 | 11/6/1996 | 6/12/1997 | 11/18/1997 | 4/21/1998 | 8/18/1999 | 10/19/1999 | 11/1/2001 | 12/22/2003 | 10/22/2004 | 10/11/2005 | 10/20/2006 | 10/17/2007 | 10/17/2008 | PRG (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | RECOVERY WELL RW-3 (Aboveground Storage Tank Area) | | | | | | | | | | | | | | |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | |
| Acetone | | NA | NA | NA | NA | ND | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | | NA | NA | NA | NA | NA | ND | NA | NA | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | | NA | NA | NA | NA | ND | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | | ND | NA | ND | ND | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | | ND | NA | NA | NA | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | | ND | **3.1** | **2.7** | **4.9** | ND | ND | ND | **9.4** | **3.6** | **3.2** | **3.7** | **2.8** | **2.7** | **3** | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | | ND | ND | ND | **1.9** | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | | **390** | **330** | **270** | **690** | **340** | **150** | **200** | **349** | **183** | **170** | **260** | **88** | **288** | **140** | **70** |
| trans-1,2-Dichloroethene | | **10** | **5.9** | **6.9** | **15** | **11** | ND | **5.1** | **8.6** | **7.1** | **5.0** | **6.4** | **4.6** | **8.6** | **4.5** | **100** |
| 1,2-Dichloroethene, Total | | **400** | **336** | **277** | **705** | **351** | **150** | **205** | **358** | **190** | **175** | **266** | **93** | **297** | **145** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | | NA | NA | NA | NA | ND | ND | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | ND | **1.7** | ND | ND | ND | **4.4** | **4.9** | **5.3** | **10** | **9.2** | **10.1** | < 1 | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | | **150** | **130** | **120** | **240** | **330** | **96** | **140** | **99** | **106** | **92** | **88** | **45** | **96** | **66** | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | NA | NA | NA | ND | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | | **43** | **40** | **28** | **50** | **3.5** | **11** | **15** | **30** | **31** | **9.7** | **12** | **4.2** | **8.3** | **8.4** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L
-- = No PRG assigned.
< = Not detected above the reporting limit provided.
No data was collected during the October 1998 sampling event
2003 and subsequent data were validated to Level II

ND = Not detected above the method detection limit.
NA = Not analyzed.
**Bold** = Analyte detected above laboratory reporting limit
*Italics* = Reporting limit above the corresponding PRG
Shaded = Analyte detected above the corresponding PRG

**Table D-5**
**Recovery Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT | Date Sampled: | 8/27/1996 | 11/6/1996 | 6/12/1997 | 11/18/1997 | 4/21/1998 | 11/2/2001 | 4/23/2002 | 12/22/2003 | 10/22/2004 | 10/11/2005 | 10/20/2006 | 10/17/2007 | 10/17/2008 | PRG (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | RECOVERY WELL RW-4 (Monitoring Wells MW-4S and MW-7S Area) | | | | | | | | | | | | | |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | |
| Acetone | | NA | NA | NA | NA | ND | ND | ND | <20.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| 2-Butanone (MEK) | | NA | NA | NA | NA | NA | NA | NA | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | -- |
| n-Butylbenzene | | ND | NA | NA | NA | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| Carbon Disulfide | | NA | NA | NA | NA | ND | ND | ND | <1.0 | <20.0 | < 20 | < 20 | < 20 | < 20 | **768** |
| Chloroethane | | ND | NA | ND | ND | ND | ND | ND | <5.0 | <2.0 | < 2 | < 2 | < 2 | < 2 | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | | ND | NA | NA | NA | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | | ND | **2.9** | **1.5** | **2.6** | ND | **13.3** | **1.2** | **1.5** | **2.7** | **1.7** | **1.7** | < 1 | < 1 | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | | ND | ND | ND | ND | ND | 2.3 | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.0167** |
| cis-1,2-Dichloroethene | | **430** | **450** | **290** | **390** | **180** | **1,580** | **147** | **165** | **330** | **200** | **180** | **164** | **178** | **70** |
| trans-1,2-Dichloroethene | | **27** | **26** | **18** | **24** | **12** | **23** | **16** | **14** | **25** | **16** | **16** | **15** | **16** | **100** |
| 1,2-Dichloroethene, Total | | **457** | **476** | **308** | **414** | **192** | **1,603** | **163** | **179** | **355** | **216** | **196** | **179** | **194** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | | NA | NA | NA | NA | ND | ND | ND | <12.5 | <20.0 | < 20 | < 20 | < 20 | < 20 | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | *<1.0* | *<1.0* | *< 1* | *< 1* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | | ND | ND | ND | ND | ND | **258** | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | NA | NA | NA | ND | ND | ND | <1.0 | NA | < 5 | < 5 | < 5 | < 5 | -- |
| Vinyl Chloride | | ND | ND | ND | ND | ND | **142** | ND | *<1.0* | **2.9** | *< 1* | *< 1* | *< 1* | **2** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | ND | <1.0 | <1.0 | < 1 | < 1 | < 1 | < 1 | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
-- = No PRG assigned.
< = Not detected above the reporting limit provided.
No data was collected during the October 1998 sampling event.
2003 and subsequent data were validated to Level II

ND = Not detected above the method detection limit.
NA = Not analyzed.
**Bold** = Analyte detected above laboratory reporting limit.
*Italics* = Reporting limit above the corresponding PRG.
Shaded = Analyte detected above the corresponding PRG.

**Table D-5**
**Recovery Well Analytical Results**
**Wayne Reclamation & Recycling**

| CONSTITUENT | Date Sampled: | RECOVERY WELL RW-5 (Southeast of the Landfill) | | | | | | | | | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8/27/1996 | 11/6/1996 | 6/12/1997 | 11/18/1997 | 4/21/1998 | 11/2/2001 | 4/23/2002 | 10/25/2002 | 12/22/2003 | 10/22/2004 | 10/11/2005 | 10/20/2006 | 10/17/2007 | 10/17/2008 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | | | | | | | | | |
| Acetone | | NA | NA | NA | NA | ND | ND | ND | ND | <100 | <20.0 | < 100 | < 100 | < 20 | < 20 | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | **4.0** | **3.8** | **5.6** | *<5.0* | **3.6** | *< 5* | **2.5** | **1** | *< 1* | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | ND | ND | NA | <2.0 | < 10 | < 10 | < 1 | < 1 | -- |
| 2-Butanone (MEK) | | NA | NA | NA | NA | NA | NA | NA | NA | <62 | <20.0 | < 100 | < 100 | < 20 | < 20 | -- |
| n-Butylbenzene | | ND | NA | NA | NA | ND | ND | ND | ND | <5.0 | <1.0 | < 5 | < 5 | < 1 | < 1 | -- |
| Carbon Disulfide | | NA | NA | NA | NA | ND | ND | ND | ND | <5.0 | <20.0 | < 100 | < 100 | < 20 | < 20 | **768** |
| Chloroethane | | ND | NA | ND | ND | ND | ND | ND | ND | <25 | <2.0 | < 10 | < 10 | < 2 | < 2 | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | ND | ND | *<5.0* | *<1.0* | *< 5* | *< 5* | *< 1* | *< 1* | **0.274** |
| Dibromomethane | | ND | NA | NA | NA | ND | ND | ND | ND | <5.0 | <1.0 | < 5 | < 5 | < 1 | < 1 | -- |
| 1,1-Dichloroethane | | ND | ND | **1.1** | **4.0** | ND | **7.1** | **4.7** | **5.7** | <5.0 | **4.7** | < 5 | **3.1** | **1.3** | **3** | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | <1.0 | < 5 | < 5 | < 1 | < 1 | -- |
| 1,1-Dichloroethene | | ND | ND | ND | ND | ND | **2.9** | **2.2** | **5.2** | *<5.0* | **2.8** | *< 5* | **1.8** | **3.1** | **1.5** | **0.0167** |
| cis-1,2-Dichloroethene | | **330** | **330** | **910** | **1,900** | **4,000** | **5,310** | **3,520** | **5,500** | **2,810** | **3,600** | **2,200** | **2,000** | **2,180** | **1,600 J** | **70** |
| trans-1,2-Dichloroethene | | **20** | **26** | **53** | **140** | **260** | **211** | **143** | **96** | **102** | **63** | **21** | **48** | **44** | **11** | **100** |
| 1,2-Dichloroethene, Total | | **350** | **356** | **963** | **2,040** | **4,260** | **5,521** | **3,663** | **5,596** | **2,912** | **3,663** | **2,221** | **2,048** | **2,224** | **1,600** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | ND | ND | ND | *<5.0* | <1.0 | *< 5* | *< 5* | < 1 | < 1 | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | <1.0 | < 5 | < 5 | < 1 | < 1 | **700** |
| 4-Methyl-2-pentanone (MIBK) | | NA | NA | NA | NA | ND | ND | ND | ND | <62 | <20 | < 100 | < 100 | < 20 | < 20 | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | ND | ND | ND | ND | *<5.0* | <1.0 | *< 5* | *< 5* | < 1 | < 1 | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | <1.0 | < 5 | < 5 | < 1 | < 1 | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | ND | ND | ND | **4.0** | **3.1** | ND | <5.0 | **1.2** | < 5 | **1.4** | < 1 | < 1 | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | ND | ND | *<5.0* | *<1.0* | *< 5* | *< 5* | *< 1* | *< 1* | **0.314** |
| Trichloroethene | | ND | **1.8** | ND | **15** | **130** | **348** | **219** | **55** | **175** | **50 (J)** | **17** | **140** | **54** | **14** | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | NA | NA | NA | ND | ND | ND | ND | <5.0 | NA | < 25 | < 25 | < 5 | < 5 | -- |
| Vinyl Chloride | | **100** | **200** | **520** | **1,600** | **1,100** | **393** | **436** | **600** | **335** | **520** | **360** | **200** | **415** | **357 J** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | ND | ND | <5.0 | <1.0 | < 5 | < 5 | < 2 | < 2 | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).
-- = No PRG assigned.
< = Not detected above the reporting limit provided.
October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.
2003 and subsequent data were validated to Level II
(J) = estimated.

No data was collected during the October 1998 sampling event.
ND = Not detected above the method detection limit.
NA = Not analyzed.
**Bold** = Analyte detected above laboratory reporting limit.
*Italics* = Reporting limit above the corresponding PRG.
Shaded = Analyte detected above the corresponding PRG.

# Table D-5
## Recovery Well Analytical Results
## Wayne Reclamation & Recycling

| CONSTITUENT | Date Sampled: | RECOVERY WELL RW-6 (Southeast Area) | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|
| | | 8/27/1996 | 11/6/1996 | 6/12/1997 | 11/18/97 | 4/21/1998 | 11/2/2001 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | |
| Acetone | | NA | NA | NA | NA | ND | ND | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | -- |
| 2-Butanone (MEK) | | NA | NA | NA | NA | NA | NA | -- |
| n-Butylbenzene | | ND | NA | NA | NA | ND | ND | -- |
| Carbon Disulfide | | NA | NA | NA | NA | ND | ND | **768** |
| Chloroethane | | ND | NA | **7.5** | ND | ND | ND | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | **0.274** |
| Dibromomethane | | ND | NA | NA | NA | ND | ND | -- |
| 1,1-Dichloroethane | | ND | ND | **21** | ND | ND | ND | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | -- |
| 1,1-Dichloroethene | | ND | ND | **3.6** | ND | ND | ND | **0.0167** |
| cis-1,2-Dichloroethene | | ND | ND | **4,500** | **1.0** | **5.7** | **43** | **70** |
| trans-1,2-Dichloroethene | | ND | ND | **53** | ND | ND | ND | **100** |
| 1,2-Dichloroethene, Total | | ND | ND | **4,553** | **1.0** | **5.7** | **43** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | ND | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | **700** |
| 4-Methyl-2-pentanone (MIBK) | | NA | NA | NA | NA | ND | ND | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | ND | ND | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | **3.1** | ND | ND | ND | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | **0.314** |
| Trichloroethene | | ND | ND | **240** | ND | ND | ND | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | NA | NA | NA | ND | ND | -- |
| Vinyl Chloride | | ND | ND | **780** | **1.1** | ND | **112** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L)

ND = Not detected above the method detection limit

NA = Not analyzed.

No data was collected during the October 1998 sampling event

**Bold** = Analyte detected above laboratory reporting limit

Shaded = Analyte detected above the corresponding PRG

-- = No PRG assigned.

# Table D-5
## Recovery Well Analytical Results
## Wayne Reclamation & Recycling

| CONSTITUENT | Date Sampled: | RECOVERY WELL RW-7 (Southeast Area) | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|
| | | 8/27/1996 | 11/6/1996 | 6/12/1997 | 11/18/1997 | 4/21/1998 | 11/2/2001 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | |
| Acetone | | NA | NA | NA | NA | ND | ND | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | -- |
| 2-Butanone (MEK) | | NA | NA | NA | NA | NA | NA | -- |
| n-Butylbenzene | | ND | NA | NA | NA | ND | ND | -- |
| Carbon Disulfide | | NA | NA | NA | NA | ND | ND | **768** |
| Chloroethane | | ND | NA | ND | ND | ND | ND | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | **0.274** |
| Dibromomethane | | ND | NA | NA | NA | ND | ND | -- |
| 1,1-Dichloroethane | | ND | ND | ND | ND | ND | **1.7** | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | -- |
| 1,1-Dichloroethene | | ND | ND | ND | ND | ND | **1.1** | **0.0167** |
| cis-1,2-Dichloroethene | | **2.4** | **910** | **100** | **520** | ND | **653** | **70** |
| trans-1,2-Dichloroethene | | ND | **43** | **2.2** | **12** | ND | **7.1** | **100** |
| 1,2-Dichloroethene, Total | | **2.4** | **953** | **102** | **532** | ND | **660** | (170) |
| 1,2-Dichloropropane | | ND | **7.4** | ND | **2.4** | ND | ND | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | **700** |
| 4-Methyl-2-pentanone (MIBK) | | NA | NA | NA | NA | ND | ND | **487** |
| Tetrachloroethene | | ND | **1.0** | ND | ND | ND | ND | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | ND | ND | ND | ND | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | **0.314** |
| Trichloroethene | | **1.7** | **290** | **26** | **140** | **43** | **101** | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | NA | NA | NA | ND | ND | -- |
| Vinyl Chloride | | ND | ND | ND | **7.9** | **3.3** | **174** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L)

ND = Not detected above the method detection limit

NA = Not analyzed.

No data was collected during the October 1998 sampling event

**Bold** = Analyte detected above laboratory reporting limit

Shaded = Analyte detected above the corresponding PRG

-- = No PRG assigned.

# Table D-5
## Recovery Well Analytical Results
## Wayne Reclamation & Recycling

| CONSTITUENT | Date Sampled: | RECOVERY WELL RW-8 (Southeast Area) 8/27/1996 | 11/6/1996 | 6/12/1997 | 11/18/1997 | 4/21/1998 | 11/2/2001 | PRG (µg/L) |
|---|---|---|---|---|---|---|---|---|
| **VOCs (µg/L)** | | | | | | | | |
| Acetone | | NA | NA | NA | NA | ND | ND | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | -- |
| 2-Butanone (MEK) | | NA | NA | NA | NA | NA | NA | -- |
| n-Butylbenzene | | ND | NA | NA | NA | ND | ND | -- |
| Carbon Disulfide | | NA | NA | NA | NA | ND | ND | **768** |
| Chloroethane | | ND | NA | **3.6** | **2.1** | ND | ND | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | **0.274** |
| Dibromomethane | | ND | NA | NA | NA | ND | ND | -- |
| 1,1-Dichloroethane | | ND | **11** | **19** | **29** | ND | **110** | **973** |
| 1,2-Dichloroethane | | ND | **1,400** | ND | ND | ND | ND | -- |
| 1,1-Dichloroethene | | ND | **3.1** | **5.6** | **5.8** | ND | **30.6** | **0.0167** |
| cis-1,2-Dichloroethene | | **3,000** | **1,434** | **2,800** | **4,700** | **5,500** | **18,500** | **70** |
| trans-1,2-Dichloroethene | | **66** | ND | **42** | **44** | ND | **144** | **100** |
| 1,2-Dichloroethene, Total | | **3,066** | **1,434** | **2,842** | **4,744** | **5,500** | **18,644** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | ND | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | **700** |
| 4-Methyl-2-pentanone (MIBK) | | NA | NA | NA | NA | ND | ND | **487** |
| Tetrachloroethene | | ND | ND | ND | ND | ND | ND | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | ND | ND | ND | ND | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | **0.314** |
| Trichloroethene | | **140** | **98** | **160** | **180** | **270** | **5,250** | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | NA | NA | NA | ND | ND | -- |
| Vinyl Chloride | | **650** | **130** | **310** | **160** | ND | **802** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L)

ND = Not detected above the method detection limit

NA = Not analyzed.

No data was collected during the October 1998 sampling event

**Bold** = Analyte detected above laboratory reporting limit

Shaded = Analyte detected above the corresponding PRG

-- = No PRG assigned.

# Table 9
## Recovery Well Analytical Results
## Wayne Reclamation & Recycling

| CONSTITUENT | Date Sampled: | RECOVERY WELL RW-9 (Southeast Area) | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|
| | | 8/27/1996 | 11/6/1996 | 6/12/1997 | 11/18/1997 | 4/21/1998 | 11/2/2001 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | |
| Acetone | | NA | NA | NA | NA | ND | ND | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | ND | **0.617** |
| Bromomethane | | ND | ND | ND | ND | ND | ND | -- |
| 2-Butanone (MEK) | | NA | NA | NA | NA | NA | NA | -- |
| n-Butylbenzene | | ND | NA | NA | NA | ND | ND | -- |
| Carbon Disulfide | | NA | NA | NA | NA | ND | ND | **768** |
| Chloroethane | | ND | NA | **3.3** | ND | ND | ND | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | **0.274** |
| Dibromomethane | | ND | NA | NA | NA | ND | ND | -- |
| 1,1-Dichloroethane | | **1.3** | **3.3** | **1.2** | **1.9** | ND | **3.0** | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | -- |
| 1,1-Dichloroethene | | ND | **3.1** | **5.7** | **4.4** | ND | **6.3** | **0.0167** |
| cis-1,2-Dichloroethene | | **340** | **2,100** | **2,700** | **3,000** | **5,300** | **3,880** | **70** |
| trans-1,2-Dichloroethene | | **3** | **19** | **32** | **17** | **61** | **32.6** | **100** |
| 1,2-Dichloroethene, Total | | **343** | **2,119** | **2,732** | **3,017** | **5,361** | **3,913** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | ND | ND | **1.8** | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | **700** |
| 4-Methyl-2-pentanone (MIBK) | | NA | NA | NA | NA | ND | ND | **487** |
| Tetrachloroethene | | ND | ND | **3.1** | ND | ND | ND | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | ND | ND | ND | ND | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | **0.314** |
| Trichloroethene | | **23** | **230** | **480** | **300** | **510** | **565** | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | NA | NA | NA | ND | ND | -- |
| Vinyl Chloride | | **5.1** | **220** | **410** | **400** | ND | **306** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L)

ND = Not detected above the method detection limit

NA = Not analyzed.

No data was collected during the October 1998 sampling event

**Bold** = Analyte detected above laboratory reporting limit

Shaded = Analyte detected above the corresponding PRG

-- = No PRG assigned.

# Table D-5
## Recovery Well Analytical Results
## Wayne Reclamation & Recycling

| CONSTITUENT | Date Sampled: | RECOVERY WELL RW-10 (Southeast Area) | | | | | | PRG |
|---|---|---|---|---|---|---|---|---|
| | | 8/27/1996 | 11/6/1996 | 6/12/1997 | 11/18/1997 | 4/21/1998 | 11/2/2001 | (µg/L) |
| **VOCs (µg/L)** | | | | | | | | |
| Acetone | | NA | NA | NA | NA | ND | ND | **3,650** |
| Benzene | | ND | ND | ND | ND | ND | **7** | **0.617** |
| Bromomethane | | **2** | ND | ND | ND | ND | ND | -- |
| 2-Butanone (MEK) | | NA | NA | NA | NA | NA | NA | -- |
| n-Butylbenzene | | ND | NA | NA | NA | ND | ND | -- |
| Carbon Disulfide | | NA | NA | NA | NA | ND | ND | **768** |
| Chloroethane | | **10** | NA | NA | **17** | ND | **17** | -- |
| Chloroform | | ND | ND | ND | ND | ND | ND | **0.274** |
| Dibromomethane | | ND | NA | NA | NA | ND | ND | -- |
| 1,1-Dichloroethane | | **68** | **8** | **55** | **71** | **74** | **82** | **973** |
| 1,2-Dichloroethane | | ND | ND | ND | ND | ND | ND | -- |
| 1,1-Dichloroethene | | **5** | ND | **7** | **8** | ND | **7** | **0.0167** |
| cis-1,2-Dichloroethene | | **6,100** | **1,100** | **8,600** | **48,000** | **11,000** | **11,000** | **70** |
| trans-1,2-Dichloroethene | | **89** | **28** | **58** | **77** | **84** | **89** | **100** |
| 1,2-Dichloroethene, Total | | **6,189** | **1,128** | **8,658** | **48,077** | **11,084** | **11,089** | (170) |
| 1,2-Dichloropropane | | ND | ND | ND | **1** | ND | **2** | **1.25** |
| Ethylbenzene | | ND | ND | ND | ND | ND | ND | **700** |
| 4-Methyl-2-pentanone (MIBK) | | NA | NA | NA | NA | ND | ND | **487** |
| Tetrachloroethene | | **1** | ND | **1** | ND | ND | ND | **1.43** |
| Toluene | | ND | ND | ND | ND | ND | ND | **1,000** |
| 1,1,1-Trichloroethane | | ND | ND | ND | ND | ND | ND | **200** |
| 1,1,2-Trichloroethane | | ND | ND | ND | ND | ND | ND | **0.314** |
| Trichloroethene | | **420** | **53** | **500** | **440** | **640** | **308** | **2.54** |
| 1,2,4-Trimethylbenzene | | NA | NA | NA | NA | ND | ND | -- |
| Vinyl Chloride | | **1,400** | **290** | **1,900** | **1,200** | **1,400** | **548** | **0.0283** |
| Xylenes, Total | | ND | ND | ND | ND | ND | ND | **828** |

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L)

ND = Not detected above the method detection limit

NA = Not analyzed.

No data was collected during the October 1998 sampling event

**Bold** = Analyte detected above laboratory reporting limit

Shaded = Analyte detected above the corresponding PRG

-- = No PRG assigned.

**Table D-6**
**Volatile Organic Compound Removal Rates - Soil Vapor Extraction and Air Stripper Systems**
**Wayne Reclamation & Recycling**

| DATE | CONSTITUENT | SE Area SVE System [1] | | | AST Area - SVE Branch Line G [2] | | | AST Area - SVE Branch Line H [3] | | | Air Stripper [4] | | | Sum of VOCs Removed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Air Flow Rate[5] (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Groundwater Flow Rate (gpm) | IN minus EFF Conc. (µg/L) | Removal Rate (lbs/day) | (lbs/day) |
| April 1998 | Trichloroethene | 1,350 | 540 | 0.35 | 140 | 57 | 0.00 | 160 | 100 | 0.01 | 30 | 140 | 0.05 | 0.41 |
| April 1998 | cis-1,2-DCE | 1,350 | 1,000 | 0.53 | 140 | 110 | 0.01 | 160 | 200 | 0.01 | 30 | 1,190 | 0.43 | 0.98 |
| April 1998 | Vinyl Chloride | 1,350 | 0 | 0.00 | 140 | 7 | 0.00 | 160 | 0 | 0.00 | 30 | 240 | 0.09 | 0.09 |
| | **Total** | | | 0.88 | | | 0.01 | | | 0.02 | | | 0.57 | **1.48** |
| October 1998 | Trichloroethene | 2,575 | 2,900 | 3.60 | 140 | 48 | 0.00 | 160 | 300 | 0.02 | 56 | 83 | 0.06 | 3.69 |
| October 1998 | cis-1,2-DCE | 2,575 | 3,500 | 3.54 | 140 | 50 | 0.00 | 160 | 250 | 0.02 | 56 | 254 | 0.17 | 3.73 |
| October 1998 | Vinyl Chloride | 2,575 | 0 | 0.00 | 140 | 0 | 0.00 | 160 | 0 | 0.00 | 56 | 110 | 0.07 | 0.07 |
| | **Total** | | | 7.14 | | | 0.01 | | | 0.04 | | | 0.30 | **7.49** |
| April 1999 | Trichloroethene | 2,730 | 94 | 0.12 | 98 | 8 | 0.00 | 112 | 21 | 0.00 | 71 | 254 | 0.22 | 0.34 |
| April 1999 | cis-1,2-DCE | 2,730 | 210 | 0.23 | 98 | 21 | 0.00 | 112 | 47 | 0.00 | 71 | 1,560 | 1.33 | 1.56 |
| April 1999 | Vinyl Chloride | 2,730 | 15 | 0.01 | 98 | 2 | 0.00 | 112 | 2 | 0.00 | 71 | 210 | 0.18 | 0.19 |
| | **Total** | | | 0.36 | | | 0.00 | | | 0.00 | | | 1.73 | **2.09** |
| Nov/Dec 1999 | Trichloroethene | 2,590 | 540 | 0.68 | 187 | 9 | 0.00 | 213 | 23 | 0.00 | 47 | 120 | 0.07 | 0.75 |
| Nov/Dec 1999 | cis-1,2-DCE | 2,590 | 1,300 | 1.32 | 187 | 24 | 0.00 | 213 | 89 | 0.01 | 47 | 888 | 0.50 | 1.83 |
| Nov/Dec 1999 | Vinyl Chloride | 2,590 | 29 | 0.02 | 187 | 4 | 0.00 | 213 | 0 | 0.00 | 47 | 120 | 0.07 | 0.09 |
| | **Total** | | | 2.01 | | | 0.00 | | | 0.01 | | | 0.64 | **2.66** |

**Notes:**

[1] Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SE) Area soil vapor extraction (SVE) line with air sparging off.

[2] VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) Area Branch Line G.

[3] VOC removal rate based on air flow rate and VOC concentrations measured in AST Area Branch Line H.

[4] VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.

[5] SE Area air flow rate based on sum of the six branch line field measurements.

IN = Influent; EFF = effluent; Conc. = concentration; scfm = standard cubic feet per minute; ppb = parts per billion; µg/L = micrograms per liter; lbs = pounds; gpm = gallons per minute; DCE = dichloroethene.

**Table D-6**
**Volatile Organic Compound Removal Rates - Soil Vapor Extraction and Air Stripper Systems**
**Wayne Reclamation & Recycling**

| | | SE Area SVE System [1] | | | AST Area - SVE Branch Line G [2] | | | AST Area - SVE Branch Line H [3] | | | Air Stripper [4] | | | Sum of VOCs Removed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | CONSTITUENT | Air Flow Rate[5] (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Groundwater Flow Rate (gpm) | IN minus EFF Conc. (µg/L) | Removal Rate (lbs/day) | (lbs/day) |
| April 2000 | Trichloroethene | 1,500 | 710 | 0.51 | 187 | 590 | 0.05 | 213 | 50 | 0.01 | 51 | 250 | 0.15 | 0.73 |
| April 2000 | cis-1,2-DCE | 1,500 | 1,400 | 0.82 | 187 | 330 | 0.02 | 213 | 150 | 0.01 | 51 | 1,450 | 0.89 | 1.75 |
| April 2000 | Vinyl Chloride | 1,500 | 0 | 0.00 | 187 | 0 | 0.00 | 213 | 0 | 0.00 | 51 | 170 | 0.10 | 0.10 |
| | **Total** | | | 1.34 | | | 0.08 | | | 0.02 | | | 1.15 | **2.58** |
| October 2000 | Trichloroethene | 1,500 | 750 | 0.54 | 187 | 710 | 0.06 | 213 | 78 | 0.01 | 55 | 120 | 0.08 | 0.69 |
| October 2000 | cis-1,2-DCE | 1,500 | 1,300 | 0.77 | 187 | 300 | 0.02 | 213 | 190 | 0.02 | 55 | 1,580 | 1.04 | 1.85 |
| October 2000 | Vinyl Chloride | 1,500 | 0 | 0.00 | 187 | 0 | 0.00 | 213 | 0 | 0.00 | 55 | 170 | 0.11 | 0.11 |
| | **Total** | | | 1.31 | | | 0.09 | | | 0.02 | | | 1.24 | **2.65** |
| April 2001 | Trichloroethene | 1,600 | 140 | 0.11 | 105 | 57 | 0.00 | 120 | 48 | 0.00 | 65 | 190 | 0.15 | 0.26 |
| April 2001 | cis-1,2-DCE | 1,600 | 150 | 0.09 | 105 | 21 | 0.00 | 120 | 70 | 0.00 | 65 | 1,230 | 0.96 | 1.06 |
| April 2001 | Vinyl Chloride | 1,600 | 0 | 0.00 | 105 | 0 | 0.00 | 120 | 0 | 0.00 | 65 | 146 | 0.11 | 0.11 |
| | **Total** | | | 0.20 | | | 0.00 | | | 0.01 | | | 1.22 | **1.44** |
| Oct/Nov 2001 | Trichloroethene | 1,600 | 410 | 0.32 | 225 | 150 | 0.02 | 225 | 0 | 0.00 | 90 | 241 | 0.26 | 0.59 |
| Oct/Nov 2001 | cis-1,2-DCE | 1,600 | 1,500 | 0.94 | 225 | 130 | 0.01 | 225 | 0 | 0.00 | 90 | 1,447 | 1.56 | 2.52 |
| Oct/Nov 2001 | Vinyl Chloride | 1,600 | 0 | 0.00 | 225 | 3 | 0.00 | 225 | 0 | 0.00 | 90 | 121 | 0.13 | 0.13 |
| | **Total** | | | 1.26 | | | 0.03 | | | 0.00 | | | 1.96 | **3.24** |

**Notes:**

[1] Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SE) Area soil vapor extraction (SVE) line with air sparging off.

[2] VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) Area Branch Line G.

[3] VOC removal rate based on air flow rate and VOC concentrations measured in AST Area Branch Line H.

[4] VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.

[5] SE Area air flow rate based on sum of the six branch line field measurements.

IN = Influent; EFF = effluent; Conc. = concentration; scfm = standard cubic feet per minute; ppb = parts per billion; µg/L = micrograms per liter; lbs = pounds; gpm = gallons per minute; DCE = dichloroethene.

**Table D-6**
**Volatile Organic Compound Removal Rates - Soil Vapor Extraction and Air Stripper Systems**
**Wayne Reclamation & Recycling**

| | | SE Area SVE System [1] | | | AST Area - SVE Branch Line G [2] | | | AST Area - SVE Branch Line H [3] | | | Air Stripper [4] | | | Sum of VOCs Removed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | CONSTITUENT | Air Flow Rate[5] (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Groundwater Flow Rate (gpm) | IN minus EFF Conc. (µg/L) | Removal Rate (lbs/day) | (lbs/day) |
| April 2002 | Trichloroethene | 2,600 | 330 | 0.41 | 245 | 22 | 0.00 | 245 | 48 | 0.01 | 65 | 74 | 0.06 | 0.48 |
| April 2002 | cis-1,2-DCE | 2,600 | 370 | 0.38 | 245 | 27 | 0.00 | 245 | 60 | 0.01 | 65 | 692 | 0.54 | 0.93 |
| April 2002 | Vinyl Chloride | 2,600 | 18 | 0.01 | 245 | 0.92 | 0.00 | 245 | 2.1 | 0.00 | 65 | 160 | 0.12 | 0.14 |
| | **Total** | | | 0.80 | | | 0.01 | | | 0.01 | | | 0.72 | **1.54** |
| October 2002 | Trichloroethene | 1,200 | 430 | 0.25 | 280 | 180 | 0.02 | (susp) | 0 | 0.00 | 44 | 300 | 0.16 | 0.43 |
| October 2002 | cis-1,2-DCE | 1,200 | 790 | 0.37 | 280 | 0 | 0.00 | (susp) | 0 | 0.00 | 44 | 1,359 | 0.72 | 1.09 |
| October 2002 | Vinyl Chloride | 1,200 | 0 | 0.00 | 280 | 0 | 0.00 | (susp) | 0 | 0.00 | 44 | 220 | 0.12 | 0.12 |
| | **Total** | | | 0.62 | | | 0.02 | | | 0.00 | | | 0.99 | **1.64** |
| April 2003 | Trichloroethene | 1,300 | 270 | 0.17 | 640 | 280 | 0.09 | (susp) | 0 | 0.00 | 50 | 268 | 0.16 | 0.42 |
| April 2003 | cis-1,2-DCE | 1,300 | 470 | 0.24 | 640 | 190 | 0.05 | (susp) | 0 | 0.00 | 50 | 1,405 | 0.84 | 1.13 |
| April 2003 | Vinyl Chloride | 1,300 | 0 | 0.00 | 640 | 0 | 0.00 | (susp) | 0 | 0.00 | 50 | 134 | 0.08 | 0.08 |
| | **Total** | | | 0.41 | | | 0.13 | | | 0.00 | | | 1.09 | **1.63** |
| October 2003 | Trichloroethene | 2,100 | 240 | 0.24 | 420 | 260 | 0.05 | (susp) | 0 | 0.00 | 44 | 180 | 0.10 | 0.39 |
| October 2003 | cis-1,2-DCE | 2,100 | 340 | 0.28 | 420 | 0 | 0.00 | (susp) | 0 | 0.00 | 44 | 1,694 | 0.90 | 1.18 |
| October 2003 | Vinyl Chloride | 2,100 | 0 | 0.00 | 420 | 0 | 0.00 | (susp) | 0 | 0.00 | 44 | 140.7 | 0.07 | 0.07 |
| | **Total** | | | 0.52 | | | 0.05 | | | 0.00 | | | 1.07 | **1.64** |

**Notes:**

[1] Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SE) Area soil vapor extraction (SVE) line with air sparging off.

[2] VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) Area Branch Line G.

[3] VOC removal rate based on air flow rate and VOC concentrations measured in AST Area Branch Line H.

[4] VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.

[5] SE Area air flow rate based on sum of the six branch line field measurements.

IN = Influent; EFF = effluent; Conc. = concentration; scfm = standard cubic feet per minute; ppb = parts per billion; µg/L = micrograms per liter; lbs = pounds; gpm = gallons per minute; DCE = dichloroethene.

(susp) = The operation of Branch Line H was suspended in October 2002.

**Table D-6**
**Volatile Organic Compound Removal Rates - Soil Vapor Extraction and Air Stripper Systems**
**Wayne Reclamation & Recycling**

| | | SE Area SVE System [1] | | | AST Area - SVE Branch Line G [2] | | | AST Area - SVE Branch Line H [3] | | | Air Stripper [4] | | | Sum of VOCs Removed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | CONSTITUENT | Air Flow Rate[5] (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Groundwater Flow Rate (gpm) | IN minus EFF Conc. (µg/L) | Removal Rate (lbs/day) | (lbs/day) |
| April 2004 | Trichloroethene | 1,000 | 0 | 0.00 | 470 | 360 | 0.08 | (susp) | 0 | 0.00 | 67 | 149 | 0.12 | 0.20 |
| April 2004 | cis-1,2-DCE | 1,000 | 160 | 0.06 | 470 | 160 | 0.03 | (susp) | 0 | 0.00 | 67 | 690 | 0.56 | 0.65 |
| April 2004 | Vinyl Chloride | 1,000 | 0 | 0.00 | 470 | 0 | 0.00 | (susp) | 0 | 0.00 | 67 | 147.9 | 0.12 | 0.12 |
| | **Total** | | | 0.06 | | | 0.11 | | | 0.00 | | | 0.79 | **0.97** |
| October 2004 | Trichloroethene | 900 | 180 | 0.07 | 470 | 350 | 0.08 | (susp) | 0 | 0.00 | 48 | 336 | 0.19 | 0.34 |
| October 2004 | cis-1,2-DCE | 900 | 330 | 0.09 | 470 | 170 | 0.02 | (susp) | 0 | 0.00 | 48 | 772 | 0.45 | 0.56 |
| October 2004 | Vinyl Chloride | 900 | 0 | 0.00 | 470 | 18.4 | 0.00 | (susp) | 0 | 0.00 | 48 | 260 | 0.15 | 0.15 |
| | **Total** | | | 0.16 | | | 0.11 | | | 0.00 | | | 0.79 | **1.05** |
| April 2005 | Trichloroethene | 860 | 323 | 0.11 | 280 | 105 | 0.01 | (susp) | 0 | 0.00 | 74 | 251 | 0.22 | 0.35 |
| April 2005 | cis-1,2-DCE | 860 | 742 | 0.19 | 280 | 64.6 | 0.01 | (susp) | 0 | 0.00 | 74 | 1,670 | 1.48 | 1.68 |
| April 2005 | Vinyl Chloride | 860 | 0 | 0.00 | 280 | 0 | 0.00 | (susp) | 0 | 0.00 | 74 | 210 | 0.19 | 0.19 |
| | **Total** | | | 0.31 | | | 0.02 | | | 0.00 | | | 1.89 | **2.22** |
| October 2005 | Trichloroethene | 560 | 230 | 0.05 | 218 | 260 | 0.03 | (susp) | 0 | 0.00 | 113 | 205 | 0.28 | 0.36 |
| October 2005 | cis-1,2-DCE | 560 | 400 | 0.07 | 218 | 290 | 0.02 | (susp) | 0 | 0.00 | 113 | 1,711 | 2.32 | 2.41 |
| October 2005 | Vinyl Chloride | 560 | 0 | 0.00 | 218 | 0 | 0.00 | (susp) | 0 | 0.00 | 113 | 168.7 | 0.23 | 0.23 |
| | **Total** | | | 0.12 | | | 0.05 | | | 0.00 | | | 2.83 | **3.00** |

**Notes:**

[1] Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SE) Area soil vapor extraction (SVE) line with air sparging off.

[2] VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) Area Branch Line G.

[3] VOC removal rate based on air flow rate and VOC concentrations measured in AST Area Branch Line H.

[4] VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.

[5] SE Area air flow rate based on sum of the six branch line field measurements.

IN = Influent; EFF = effluent; Conc. = concentration; scfm = standard cubic feet per minute; ppb = parts per billion; µg/L = micrograms per liter; lbs = pounds; gpm = gallons per minute; DCE = dichloroethene.

(susp) = The operation of Branch Line H was suspended in October 2002.

The soil vapor extraction (SVE) and air sparge (AS) systems were temporarily shut down on November 13, 2005 for assessment of the vadose zone and was restarted in April 2006.

**Table D-6**
**Volatile Organic Compound Removal Rates - Soil Vapor Extraction and Air Stripper Systems**
**Wayne Reclamation & Recycling**

| | | SE Area SVE System [1] | | | AST Area - SVE Branch Line G [2] | | | AST Area - SVE Branch Line H [3] | | | Air Stripper [4] | | | Sum of VOCs Removed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | CONSTITUENT | Air Flow Rate[5] (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Groundwater Flow Rate (gpm) | IN minus EFF Conc. (µg/L) | Removal Rate (lbs/day) | (lbs/day) |
| April 2006 | Trichloroethene | 1,020 | 309 | 0.13 | 213 | 197 | 0.02 | (susp) | 0 | 0.00 | 93 | 157 | 0.18 | 0.33 |
| April 2006 | cis-1,2-DCE | 1,020 | 458 | 0.14 | 213 | 805 | 0.05 | (susp) | 0 | 0.00 | 93 | 928 | 1.04 | 1.23 |
| April 2006 | Vinyl Chloride | 1,020 | 0 | 0.00 | 213 | 0 | 0.00 | (susp) | 0 | 0.00 | 93 | 110 | 0.12 | 0.12 |
| | **Total** | | | 0.27 | | | 0.07 | | | 0.00 | | | 1.34 | **1.68** |
| October 2006 | Trichloroethene | 873 | 376 | 0.14 | 312 | 380 | 0.06 | (susp) | 0 | 0.00 | 77 | 335 | 0.31 | 0.50 |
| October 2006 | cis-1,2-DCE | 873 | 570 | 0.15 | 312 | 222 | 0.02 | (susp) | 0 | 0.00 | 77 | 1,718 | 1.59 | 1.76 |
| October 2006 | Vinyl Chloride | 873 | 0 | 0.00 | 312 | 0 | 0.00 | (susp) | 0 | 0.00 | 77 | 140 | 0.13 | 0.13 |
| | **Total** | | | 0.29 | | | 0.08 | | | 0.00 | | | 2.03 | **2.39** |
| April 2007 | Trichloroethene | (susp) | 0 | 0.00 | 750 | 28 | 0.01 | (susp) | 0 | 0.00 | 85 | 129 | 0.13 | 0.14 |
| April 2007 | cis-1,2-DCE | (susp) | 0 | 0.00 | 750 | 11 | 0.00 | (susp) | 0 | 0.00 | 85 | 894 | 0.91 | 0.92 |
| April 2007 | Vinyl Chloride | (susp) | 0 | 0.00 | 750 | 0 | 0.00 | (susp) | 0 | 0.00 | 85 | 123 | 0.13 | 0.13 |
| | **Total** | | | 0.00 | | | 0.01 | | | 0.00 | | | 1.17 | **1.18** |
| October 2007 | Trichloroethene | (susp) | 0 | 0.00 | 690 | 52 | 0.02 | (susp) | 0 | 0.00 | 55 | 84 | 0.06 | 0.07 |
| October 2007 | cis-1,2-DCE | (susp) | 0 | 0.00 | 690 | 33 | 0.01 | (susp) | 0 | 0.00 | 55 | 537 | 0.35 | 0.36 |
| October 2007 | Vinyl Chloride | (susp) | 0 | 0.00 | 690 | 0 | 0.00 | (susp) | 0 | 0.00 | 55 | 117 | 0.08 | 0.08 |
| | **Total** | | | 0.00 | | | 0.02 | | | 0.00 | | | 0.49 | **0.51** |

**Notes:**

[1] Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SE) Area soil vapor extraction (SVE) line with air sparging off.

[2] VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) Area Branch Line G.

[3] VOC removal rate based on air flow rate and VOC concentrations measured in AST Area Branch Line H.

[4] VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.

[5] SE Area air flow rate based on sum of the six branch line field measurements.

IN = Influent; EFF = effluent; Conc. = concentration; scfm = standard cubic feet per minute; ppb = parts per billion; µg/L = micrograms per liter; lbs = pounds; gpm = gallons per minute; DCE = dichloroethene.

(susp) = The operation of Branch Line H was suspended in October 2002.

The soil vapor extraction (SVE) and air sparge (AS) systems were temporarily shut down on November 13, 2005 for assessment of the vadose zone and was restarted in April 2006.

The AS system was suspended in November 2006.

**Table D-6**
**Volatile Organic Compound Removal Rates - Soil Vapor Extraction and Air Stripper Systems**
**Wayne Reclamation & Recycling**

| | | SE Area SVE System [1] | | | AST Area - SVE Branch Line G [2] | | | AST Area - SVE Branch Line H [3] | | | Air Stripper [4] | | | Sum of VOCs Removed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | CONSTITUENT | Air Flow Rate[5] (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Air Flow Rate (scfm) | Conc. (ppb) | Removal Rate (lbs/day) | Groundwater Flow Rate (gpm) | IN minus EFF Conc. (µg/L) | Removal Rate (lbs/day) | (lbs/day) |
| April 2008 | Trichloroethene | (susp) | 0 | 0.00 | 700 | 0 | 0.00 | (susp) | 0 | 0.00 | 32 | 45 | 0.02 | 0.02 |
| April 2008 | cis-1,2-DCE | (susp) | 0 | 0.00 | 700 | 0 | 0.00 | (susp) | 0 | 0.00 | 32 | 354 | 0.14 | 0.14 |
| April 2008 | Vinyl Chloride | (susp) | 0 | 0.00 | 700 | 0 | 0.00 | (susp) | 0 | 0.00 | 32 | 98 | 0.04 | 0.04 |
| | **Total** | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.19 | **0.19** |
| October 2008 | Trichloroethene | (susp) | 0 | 0.00 | 718 | 559 | 0.19 | (susp) | 0 | 0.00 | 57 | 214 | 0.15 | 0.34 |
| October 2008 | cis-1,2-DCE | (susp) | 0 | 0.00 | 718 | 362 | 0.13 | (susp) | 0 | 0.00 | 57 | 1,126 | 0.77 | 0.90 |
| October 2008 | Vinyl Chloride | (susp) | 0 | 0.00 | 718 | 0 | 0.00 | (susp) | 0 | 0.00 | 57 | 185 | 0.13 | 0.13 |
| | **Total** | | | 0.00 | | | 0.32 | | | 0.00 | | | 1.04 | **1.36** |
| April 2009 | Trichloroethene | (susp) | 0 | 0.00 | 750 | 9.5 | 0.00 | (susp) | 0 | 0.00 | 57 | 82 | 0.06 | 0.06 |
| April 2009 | cis-1,2-DCE | (susp) | 0 | 0.00 | 750 | 13 | 0.00 | (susp) | 0 | 0.00 | 57 | 356 | 0.24 | 0.25 |
| April 2009 | Vinyl Chloride | (susp) | 0 | 0.00 | 750 | 0 | 0.00 | (susp) | 0 | 0.00 | 57 | 74 | 0.05 | 0.05 |
| | **Total** | | | 0.00 | | | 0.01 | | | 0.00 | | | 0.35 | **0.36** |

**Notes:**

[1] Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SE) Area soil vapor extraction (SVE) line with air sparging off.
[2] VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) Area Branch Line G.
[3] VOC removal rate based on air flow rate and VOC concentrations measured in AST Area Branch Line H.
[4] VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.
[5] SE Area air flow rate based on sum of the six branch line field measurements.
IN = Influent; EFF = effluent; Conc. = concentration; scfm = standard cubic feet per minute; ppb = parts per billion; µg/L = micrograms per liter; lbs = pounds; gpm = gallons per minute; DCE = dichloroethene.
(susp) = The operation of Branch Line H was suspended in October 2002.
The AS system was suspended in November 2006.
The average flow rate is used for the October 2008 AST - SVE Branch Line calculation.

**Table D-7**
**Summary of Groundwater Treatment System Effluent Sampling - Metals, Inorganics, and Polychlorinated Biphenyls**
**Wayne Reclamation Recycling**

| CONSTITUENT Date Sampled: | 11/18/1997 | 12/18/1997 | 1/30/1998 | 10/13/1998 | 10/13/1999 | 10/6/2000 | 10/31/2001 | 10/24/2002 | 10/16/2003 | 10/21/2004 | 10/13/2005 | 10/19/2006 | 10/18/2007 | 10/14/2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals (mg/L)** | | | | | | | | | | | | | | |
| Arsenic | **0.015** | **0.0044** | **0.005** | <0.005 | <0.005 | <0.028 | <0.0050 | <0.0050 | **0.0130** | <0.0100 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Beryllium | <0.0050 | <0.0050 | <0.0050 | <0.003 | <0.003 | <0.003 | <0.0010 | <0.0010 | <0.0010 | <0.00400 | < 0.004 | < 0.004 | < 0.004 | < 0.004 |
| Cadmium | <0.0050 | <0.0050 | <0.0050 | <0.005 | <0.010 | <0.005 | <0.0010 | <0.0010 | <0.0010 | <0.00500 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Chromium | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.0020 | <0.0020 | <0.0020 | <0.0100 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Copper | **0.032** | <0.020 | **1.9** | <0.010 | <0.005 | <0.005 | <0.0050 | <0.0050 | **0.0170** | <0.0200 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Lead | <0.10 | <0.10 | <0.10 | <0.005 | <0.005 | <0.005 | <0.0010 | <0.0010 | <0.0010 | <0.0100 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Mercury | <0.00020 | <0.00020 | <0.00020 | <0.0005 | <0.0005 | <0.0005 | <0.0002 | <0.0002 | <0.0002 | <0.00200 | < 0.002 | < 0.002 | < 0.002 | < 0.002 |
| Molybdenum | <0.20 | <0.20 | <0.20 | <0.020 | <0.020 | <0.020 | **0.0061** | **0.0084** | **0.0064** | <0.0500 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nickel | <0.050 | <0.020 | <0.020 | <0.020 | <0.020 | <0.005 | **0.0091** | **0.0078** | **0.0110** | <0.0500 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Potassium | **12.0** | **12.0** | **9.5** | **11.0** | **9.0** | **9.0** | **8.6** | **10.7** | **10.8** | **10.4** | **9.14** | **11.6** | **8.3** | **9.3** |
| Selenium | <0.0020 | <0.0020 | <0.0020 | <0.005 | <0.005 | <0.036 | <0.0050 | <0.0050 | <0.0050 | <0.0100 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Silver | <0.010 | <0.010 | <0.010 | <0.020 | <0.001 | <0.005 | <0.0005 | <0.0005 | <0.0005 | <0.0500 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Zinc | **0.054** | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.050 | <0.050 | **0.226** | <0.0500 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| **Inorganics/Wet Chemistry (mg/L)** | | | | | | | | | | | | | | |
| Ammonia Nitrogen | **0.72** | **0.15** | **0.28** | **1.00** | **0.80** | **1.10** | **1.20** | **1.8** | **2.6** | **1.45** | **1.17** | **1.91** | **0.62** | **1.50** |
| Biological Oxygen Demand | <2.0 | <2.0 | <2.0 | <5 | **6** | **8** | <5 | **9.4** | <5 | <5 | **12** | **<5** | NA | NA |
| Chemical Oxygen Demand | **23** | **18** | **21** | <10 | <10 | **16** | **72** | **24** | **17** | <10.0 | **26.9** | **26.3** | **22.2** | **16.5** |
| Nitrate/Nitrite Nitrogen | **0.32** | **0.33** | **0.44** | **0.036** | **0.04** | **0.033** | **0.23** | **0.033** | **0.20** | <0.500 | < 0.5 | < 0.5 | **0.10** | < 0.1 |
| Oil & Grease | <5 | <5 | <5 | <5 | **6** | **6** | <5 | <5 | <5 | <5 | < 5 | < 5 | <5 | <5 |
| pH | **8.3** | **8.27** | **7.65** | NA | **7.2** | **7.2** | NA | **8.06** | **7.87** | **8.14** | **8.14** | **8.23** | **8.26** | **8.26** |
| Surfactants (MBAs) | Negative | Negative | Negative | **Positive** | **Positive** | Negative | **0.13** | **0.16** | <0.10 | **0.701** | < 0.2 | < 0.2 | <0.2 | <0.2 |
| Total Cyanide | <0.005 | <0.005 | <0.0050 | <0.005 | <0.005 | <0.020 | <0.005 | <0.005 | <0.005 (J) | <0.00500 | < 0.005 | < 0.005 | <0.005 | <0.005 |
| Total Kjeldahl Nitrogen | **47** | **1.21** | **0.98** | **1.6** | **1.09** | **1.5** | **1.6** | **2.1** | **2.7** | **2.08** | < 2 | **2.67** | **1.3** | **2.5 J** |
| Total Phenols | <0.01 | <0.01 | **0.17** | <0.010 | <0.010 | <0.005 | 0.0093 | 0.0084 | <0.010 | <0.100 | < 0.05 | < 0.05 | <0.02 | **0.03** |
| Total Phosphorus | **0.93** | **0.75** | **0.96** | <0.05 | **0.48** | <0.15 | <0.15 | <0.15 | <0.05 | <0.0500 | < 0.05 | < 0.05 | <0.05 | <0.05 J |
| Total Solids | **1,100** | **820** | **850** | **830** | **790** | **820** | **850** | **800** | **960** | **940** | **734** | **828** | **688** | **628** |
| Total Suspended Solids | **11** | **14** | **19** | **27** | <5 | **5** | **9** | <5 | **6** | **34.5** | < 5 | **7.3** | **5** | **6** |
| **PCBs (µg/L)** | | | | | | | | | | | | | | |
| Aroclor 1016 | <0.2 | <0.2 | <0.2 | <1.0 | <0.7 | <1.0 | <0.21 | <0.21 | <0.20 | <0.51 | < 0.5 | < 0.5 | < 0.5 | < 0.55 |
| Aroclor 1221 | <0.2 | <0.2 | <0.2 | <1.0 | <0.7 | <1.0 | <0.21 | <0.21 | <0.20 | <0.51 | < 0.5 | < 0.5 | < 0.5 | < 0.55 |
| Aroclor 1232 | <0.4 | <0.4 | <0.4 | <1.0 | <0.7 | <1.0 | <0.21 | <0.21 | <0.20 | <0.51 | < 0.5 | < 0.5 | < 0.5 | < 0.55 |
| Aroclor 1242 | <0.2 | <0.2 | <0.2 | <1.0 | <0.7 | <1.0 | <0.21 | <0.21 | <0.20 | <0.51 | < 0.5 | < 0.5 | < 0.5 | < 0.55 |
| Aroclor 1248 | <0.2 | <0.2 | <0.2 | <1.0 | <0.7 | <1.0 | <0.21 | <0.21 | <0.20 | <0.51 | < 0.5 | < 0.5 | < 0.5 | < 0.55 |
| Aroclor 1254 | <0.2 | <0.2 | <0.2 | <1.0 | <0.7 | <1.0 | <0.21 | <0.21 | <0.20 | <0.51 | < 0.5 | < 0.5 | < 0.5 | < 0.55 |
| Aroclor 1260 | <0.2 | <0.2 | <0.2 | <1.0 | <0.7 | <1.0 | <0.21 | <0.21 | <0.20 | <0.51 | < 0.5 | < 0.5 | < 0.5 | < 0.55 |

**Notes:**

Total metals and inorganic/wet chemistry parameters reported in milligrams per liter (mg/L).
Polychlorinated biphenyls (PCBs) are reported in micrograms per liter (µg/L).
**Bold** = Analyte detected above laboratory reporting limit.
< = Not detected above the reporting limit provided.
NA = Not analyzed.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 4/23/1999 | | 5/17/1999 | | 6/24/1999 | |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **IN** | **EFF** | **IN** | **EFF** | **IN** | **EFF** |
| 1,1-Dichloroethane | **26** | **25** | **29** | **13** | **45** | **9** |
| 1,1-Dichloroethene | <14 | <13 | <18 | <12 | <17 | **6** |
| cis-1,2-Dichloroethene | **1,600** | **1,500** | **2,200** | **1,000** | **2,300** | **390** |
| trans-1,2-Dichloroethene | **50** | **58** | **52** | **36** | **140** | **35** |
| Tetrachloroethene | <14 | **17** | **110** | **52** | **46** | **6** |
| Toluene | **20** | <13 | <18 | <12 | <17 | **3** |
| 1,1,1-Trichloroethane | **36** | **36** | **83** | **25** | **43** | **8** |
| Trichloroethene | **220** | **300** | **570** | **240** | **860** | **120** |
| Vinyl Chloride | **360** | **280** | **220** | **120** | **240** | **35** |
| **Cumulative Risk (1)** | **7.52E-07** | **5.93E-07** | **4.98E-07** | **2.67E-07** | **1.08E-07** | **1.53E-08** |

| Date Sampled | 7/13/1999 | 8/6/1999 | 9/1/1999 | 10/14/1999 | 11/23/1999 | 12/13/1999 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | **45** | **45** | **60** | **61** | **32** | **32** |
| 1,1-Dichloroethene | <7.8 | <9.2 | **4** | <9.2 | <14 | <12 |
| cis-1,2-Dichloroethene | **2,200** | <9.2 | **1,600** | **3,300** | **1,400** | **1,500** |
| trans-1,2-Dichloroethene | **100** | **140** | **120** | **260** | **76** | **95** |
| Tetrachloroethene | **51** | **27** | **25** | **63** | **16** | **38** |
| Toluene | <7.8 | <9.2 | <2.3 | <9.2 | <14 | <12 |
| 1,1,1-Trichloroethane | **180** | **44** | **200** | **99** | **97** | **66** |
| Trichloroethene | **440** | **810** | **390** | **1,700** | **390** | **520** |
| Vinyl Chloride | **340** | **270** | **220** | **180** | **200** | **200** |
| **Cumulative Risk (1)** | **1.10E-07** | **1.09E-07** | **7.53E-08** | **1.41E-07** | **6.93E-08** | **7.96E-08** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

IN = Influent; EFF = effluent sample; < = not detected above the reporting limit provided.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/3/2000 | 2/7/2000 | 3/15/2000 | 4/25/2000 | 5/24/2000 | 6/6/2000 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | **29** | **17** | **25** | **31** | **30** | **27** |
| 1,1-Dichloroethene | <18 | <8.3 | <9.0 | <3.1 | <12 | **2** |
| cis-1,2-Dichloroethene | **1,100** | **740** | **1,200** | **2,300** | **1,000** | **1,800** |
| trans-1,2-Dichloroethene | **68** | **55** | **46** | **83** | **71** | **85** |
| Tetrachloroethene | **57** | <8.3 | **88** | <21 | **110** | **30** |
| Toluene | <18 | <8.3 | <9.0 | <3.1 | <12 | <2.0 |
| 1,1,1-Trichloroethane | **110** | **29** | **89** | **47** | **150** | **110** |
| Trichloroethene | **440** | **220** | **400** | **300** | **440** | **380** |
| Vinyl Chloride | **94** | **91** | **61** | **260** | **130** | **190** |
| **Cumulative Risk (1)** | **5.38E-08** | **3.39E-08** | **4.88E-08** | **7.92E-08** | **7.03E-08** | **6.86E-08** |

| Date Sampled | 7/25/2000 | 8/4/2000 | 9/5/2000 | 10/6/2000 | 11/7/2000 | 12/21/2000 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | **21** | **30** | **34** | **49** | **36** | **30** |
| 1,1-Dichloroethene | <9.7 | <12 | <12 | <18 | <10 | <9.3 |
| cis-1,2-Dichloroethene | **1,400** | **2,200** | **2,100** | **2,200** | **1,900** | **1,900** |
| trans-1,2-Dichloroethene | **39** | **100** | **140** | **160** | **97** | **100** |
| Tetrachloroethene | **31** | **56** | **22** | **52** | **110** | **38** |
| Toluene | <9.7 | <12 | <12 | <18 | <10 | <9.3 |
| 1,1,1-Trichloroethane | **80** | **59** | **80** | **93** | **73** | **50** |
| Trichloroethene | **290** | **840** | **540** | **920** | **840** | **760** |
| Vinyl Chloride | **190** | **230** | **210** | **130** | **170** | **190** |
| **Cumulative Risk (1)** | **6.40E-08** | **1.06E-07** | **8.04E-08** | **8.66E-08** | **1.01E-07** | **8.99E-08** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/30/2001 | 2/26/2001 | 3/21/2001 | 4/23/2001 | 5/21/2001 | 6/13/2001 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | **30** | <140 | **18** | <140 | <150 | <150 |
| 1,1-Dichloroethene | <9.2 | <140 | **2.1** | <140 | <150 | <150 |
| cis-1,2-Dichloroethene | **2,000** | **1,700** | **1,300** | **1,000** | **630** | **1,400** |
| trans-1,2-Dichloroethene | **49** | NA | NA | NA | NA | NA |
| Tetrachloroethene | **38** | <140 | **34** | <140 | <150 | <150 |
| Toluene | <9.2 | <140 | **4.0** | <140 | <150 | <150 |
| 1,1,1-Trichloroethane | **53** | <140 | **26** | <140 | <150 | <150 |
| Trichloroethene | **630** | **260** | **340** | **160** | <150 | **430** |
| Vinyl Chloride | **270** | **180** | **190** | **160** | <150 | **210** |
| **Cumulative Risk (1)** | **1.02E-07** | **7.71E-08** | **6.71E-08** | **6.72E-08** | **6.59E-08** | **9.46E-08** |

| Date Sampled | 7/23/2001 | 8/23/2001 | 9/17/2001 | 10/31/2001 | 11/18/2001 | 12/28/2001 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | <140 | <140 | <140 | <140 | <100 | <130 |
| 1,1-Dichloroethene | <140 | <140 | <140 | <140 | <100 | <130 |
| cis-1,2-Dichloroethene | **1,100** | **600** | **680** | **1,500** | **2,200** | **1,700** |
| trans-1,2-Dichloroethene | NA | NA | NA | <140 | <100 | NA |
| Tetrachloroethene | <140 | <140 | <140 | <140 | <100 | <130 |
| Toluene | <140 | <140 | <140 | <140 | <100 | <130 |
| 1,1,1-Trichloroethane | <140 | <140 | <140 | <140 | <100 | <130 |
| Trichloroethene | **140** | **280** | **280** | **410** | **460** | **300** |
| Vinyl Chloride | <140 | <140 | <140 | **260** | **210** | **210** |
| **Cumulative Risk (1)** | **6.16E-08** | **6.89E-08** | **6.89E-08** | **1.04E-07** | **8.84E-08** | **8.46E-08** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/18/2002 | 2/7/2002 | 3/21/2002 | 4/23/2002 | 5/23/2002 | 6/18/2002 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | <130 | <130 | <140 | **3.5** | <140 | <140 |
| 1,1-Dichloroethene | <130 | <130 | <140 | <0.69 | <140 | <140 |
| cis-1,2-Dichloroethene | **1,600** | **2,800** | **900** | **37** | **800** | **1,200** |
| trans-1,2-Dichloroethene | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | <130 | <130 | <140 | **7.8** | <140 | <140 |
| Toluene | <130 | <130 | <140 | <0.69 | <140 | <140 |
| 1,1,1-Trichloroethane | <130 | <130 | <140 | **42** | <140 | <140 |
| Trichloroethene | **280** | **530** | **180** | **29** | **160** | **290** |
| Vinyl Chloride | **280** | **500** | **160** | **1.0** | **150** | **220** |
| **Cumulative Risk (1)** | **9.98E-08** | **1.64E-07** | **6.83E-08** | **2.97E-09** | **6.49E-08** | **8.80E-08** |

| Date Sampled | 7/19/2002 | 8/14/2002 | 9/20/2002 | 10/24/2002 | 11/21/2002 | 12/13/2002 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | <140 | <140 | <100 | <130 | <140 | <140 |
| 1,1-Dichloroethene | <140 | <140 | <100 | <130 | <140 | <140 |
| cis-1,2-Dichloroethene | **230** | **920** | **1,500** | **1,500** | **1,200** | **1,100** |
| trans-1,2-Dichloroethene | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | <140 | <140 | <100 | <130 | <140 | <140 |
| Toluene | <140 | <140 | <100 | <130 | <140 | <140 |
| 1,1,1-Trichloroethane | <140 | <140 | <100 | <130 | <140 | <140 |
| Trichloroethene | <140 | **200** | **520** | **1,000** | **720** | **410** |
| Vinyl Chloride | <140 | **220** | <100 | <130 | <140 | <140 |
| **Cumulative Risk (1)** | **6.16E-08** | **8.32E-08** | **6.61E-08** | **9.21E-08** | **9.21E-08** | **7.58E-08** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/23/2003 | 2/10/2003 | 3/19/2003 | 4/15/2003 | 5/19/2003 | 6/6/2003 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | <140 | <140 | <130 | <140 | <130 | <140 |
| 1,1-Dichloroethene | <140 | <140 | <130 | <140 | <130 | <140 |
| cis-1,2-Dichloroethene | **920** | **520** | **760** | **1,400** | **750** | **1,000** |
| trans-1,2-Dichloroethene | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | <140 | <140 | <130 | <140 | <130 | <140 |
| Toluene | <140 | <140 | <130 | <140 | <130 | <140 |
| 1,1,1-Trichloroethane | <140 | <140 | <130 | <140 | <130 | <140 |
| Trichloroethene | **420** | **320** | **320** | **380** | **280** | **390** |
| Vinyl Chloride | <140 | <140 | <130 | <140 | <130 | <140 |
| **Cumulative Risk (1)** | **7.63E-08** | **7.10E-08** | **6.71E-08** | **7.42E-08** | **6.50E-08** | **7.47E-08** |

| Date Sampled | 7/14/2003 | 8/21/2003 | 9/15/2003 | 10/16/2003 | 11/7/2003 | 12/22/2003 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | <140 | <140 | **2.3** | < 130 | < 130 | < 130 |
| 1,1-Dichloroethene | <140 | <140 | <0.66 | < 130 | < 130 | < 130 |
| cis-1,2-Dichloroethene | **740** | **800** | **270** | **750** | **380** | **1,100** |
| trans-1,2-Dichloroethene | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | <140 | <140 | **7.4** | < 130 | < 130 | < 130 |
| Toluene | <140 | <140 | <0.66 | < 130 | < 130 | < 130 |
| 1,1,1-Trichloroethane | <140 | <140 | **5.4** | < 130 | < 130 | < 130 |
| Trichloroethene | **290** | **330** | **240** | **230** | **230** | **220** |
| Vinyl Chloride | <140 | <140 | **11** | < 130 | < 130 | **190** |
| **Cumulative Risk (1)** | **6.94E-08** | **7.15E-08** | **1.63E-08** | **6.24E-08** | **6.24E-08** | **7.58E-08** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/29/2004 | 2/20/2004 | 3/16/2004 | 4/19/2004 | 5/18/2004 | 6/23/2004 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | <130 | <120 | <140 | **18** | <150 | **23** |
| 1,1-Dichloroethene | <130 | <120 | <140 | **3.1** | <150 | **5.0** |
| cis-1,2-Dichloroethene | **350** | **1,200** | **540** | **2,300** | **510** | **1,800** |
| trans-1,2-Dichloroethene | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | <130 | <120 | <140 | **7.1** | <150 | **12** |
| Toluene | <130 | <120 | <140 | **2.1** | <150 | **5.8** |
| 1,1,1-Trichloroethane | <130 | <120 | <140 | **4.8** | <150 | **4.3** |
| Trichloroethene | <130 | **300** | <140 | **480** | <150 | **260** |
| Vinyl Chloride | **150** | **220** | <140 | **350** | <150 | **300** |
| **Cumulative Risk (1)** | **6.18E-08** | **8.54E-08** | **6.16E-08** | **1.07E-07** | **6.59E-08** | **8.50E-08** |

| Date Sampled | 7/30/2004 | 8/31/2004 | 9/22/2004 | 10/19/2004 | 11/22/2004 | 12/17/2004 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | <140 | <130 | <140 | <150 | <140 | <140 |
| 1,1-Dichloroethene | <140 | <130 | <140 | <150 | <140 | <140 |
| cis-1,2-Dichloroethene | **1,300** | **1,000** | **620** | **820 (UB)** | **1,000** | **1,300** |
| trans-1,2-Dichloroethene | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | <140 | <130 | <140 | <150 | <140 | <140 |
| Toluene | <140 | <130 | <140 | <150 | <140 | <140 |
| 1,1,1-Trichloroethane | <140 | <130 | <140 | <150 | <140 | <140 |
| Trichloroethene | **250** | **180** | <140 | **180** | **210** | **780** |
| Vinyl Chloride | **260** | **140** | <140 | **180 (UB)** | **170** | <140 |
| **Cumulative Risk (1)** | **9.51E-08** | **6.21E-08** | **6.16E-08** | **7.45E-08** | **7.22E-08** | **9.52E-08** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/26/2005 | 2/18/2005 | 3/16/2005 | 4/19/2005 | 5/13/2005 | 6/03/2005 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | <140 | <140 | <140 | **53.2** | **15.9** | **22** |
| 1,1-Dichloroethene | <140 | <140 | <140 | <13.2 | **3** | **3** |
| cis-1,2-Dichloroethene | **700** | **750** | **620** | **4,330** | <0.71 | **1,970** |
| trans-1,2-Dichloroethene | NA | NA | <140 | <14.1 | NA | <113 |
| Tetrachloroethene | <140 | <140 | <140 | **46.8** | **15** | **21.6** |
| Toluene | <140 | <140 | <140 | <13.2 | <0.71 | **1.5** |
| 1,1,1-Trichloroethane | <140 | <140 | <140 | **15.6** | <0.64 | **18.2** |
| Trichloroethene | <140 | <140 | <140 | **718** | **35** | **522** |
| Vinyl Chloride | <140 | <140 | **180** | <13.8 | <0.74 | **274** |
| **Cumulative Risk (1)** | **6.16E-08** | **6.16E-08** | **7.08E-08** | **4.82E-08** | **4.35E-09** | **9.42E-08** |

| Date Sampled | 7/15/2005 | 8/26/2005 | 9/29/2005 | 10/17/2005 | 11/03/2005 | 12/01/2005 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | < 140 | < 140 | **56** | < 140 | < 0.69 | **22.5** |
| 1,1-Dichloroethene | < 140 | < 140 | < 13.8 | < 140 | < 0.69 | < 14.8 |
| cis-1,2-Dichloroethene | **920** | **2,400** | **7,160 J** | **1,300** | < 0.69 | NA |
| trans-1,2-Dichloroethene | < 140 | < 140 | **185** | < 140 | < 0.69 | **19.4** |
| Tetrachloroethene | < 140 | < 140 | < 13.8 | < 140 | < 0.69 | < 14.8 |
| Toluene | < 140 | < 140 | < 13.8 | < 140 | < 0.69 | < 14.8 |
| 1,1,1-Trichloroethane | < 140 | < 140 | **16** | < 140 | < 0.69 | < 14.8 |
| Trichloroethene | **250** | **710** | < 13.8 | **300** | < 0.69 | **224** |
| Vinyl Chloride | < 140 | **530** | < 13.8 | < 140 | < 0.69 | **344** |
| **Cumulative Risk (1)** | **3.22E-07** | **1.15E-06** | **3.12E-08** | **3.25E-07** | **1.56E-09** | **7.20E-07** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/09/2006 | 2/10/2006 | 3/15/2006 | 4/26/2006 | 5/23/2006 | 6/15/2006 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | **26** | **21** | **22** | <13.8 | **23** | <13.8 |
| 1,1-Dichloroethene | <14.3 | **5** | <13.8 | <13.8 | <11.8 | <13.8 |
| cis-1,2-Dichloroethene | **2,330** | **1,930** | **2,650** | **818** | **1,800** | **1160** |
| trans-1,2-Dichloroethene | **23** | **20** | **18** | **38** | **123** | **49** |
| Tetrachloroethene | <14.3 | <3.4 | <13.8 | **35** | <11.8 | **22.4** |
| Toluene | <14.3 | <3.4 | <13.8 | <18.0 | <11.8 | <13.8 |
| 1,1,1-Trichloroethane | <14.3 | <3.4 | <13.8 | <18.0 | <11.8 | **28** |
| Trichloroethene | **315** | **283** | **270** | **279** | **421** | **313** |
| Vinyl Chloride | **423** | **310** | **215** | **147** | **317** | **168** |
| **Cumulative Risk (1)** | **1.17E-07** | **8.72E-08** | **6.61E-08** | **5.41E-08** | **9.74E-08** | **5.88E-08** |

| Date Sampled | 7/18/2006 | 8/10/2006 | 9/26/2006 | 10/20/2006 | 11/27/2006 | 12/11/2006 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | **31** | <13.8 | **34** | **39** | **21** | **14** |
| 1,1-Dichloroethene | <14.3 | <13.8 | <14.3 | <19.8 | <14.3 | <13.8 |
| cis-1,2-Dichloroethene | **1,550 J** | <13.8 | **1,720 J** | **2,050 J** | **1,420 J** | **927 J** |
| trans-1,2-Dichloroethene | **59** | <13.8 | **93** | **146** | **49** | **17** |
| Tetrachloroethene | **52** | <13.8 | <14.3 | **94** | **17** | <13.8 |
| Toluene | <14.3 | **36** | <14.3 | <19.8 | <14.3 | <13.8 |
| 1,1,1-Trichloroethane | **15** | <13.8 | <14.3 | **31** | <14.3 | <13.8 |
| Trichloroethene | **378** | <13.8 | **427** | **888 J** | **242** | **191** |
| Vinyl Chloride | **319** | <13.8 | <14.3 | **220** | **230** | **199** |
| **Cumulative Risk (1)** | **1.02E-07** | **6.07E-09** | **2.80E-08** | **1.12E-07** | **6.85E-08** | **5.83E-08** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/04/2007 | 2/02/2007 | 3/13/2007 | 4/17/2007 | 5/07/2007 | 6/06/2007 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | **23** | <14.3 | **15** | **17** | **36** | **30** |
| 1,1-Dichloroethene | <14.3 | <14.3 | <13.8 | <13.8 | <14.3 | <14.3 |
| cis-1,2-Dichloroethene | **1,010** | **891** | **1,150** | **1,330** | **1,980** | **1,010** |
| trans-1,2-Dichloroethene | **20** | <14.3 | **16** | **26** | **34** | **28** |
| Tetrachloroethene | <14.3 | <14.3 | <13.8 | <13.8 | <14.3 | <14.3 |
| Toluene | <14.3 | <14.3 | <13.8 | <13.8 | <14.3 | <14.3 |
| 1,1,1-Trichloroethane | <14.3 | <14.3 | <13.8 | <13.8 | <14.3 | <14.3 |
| Trichloroethene | **162** | **141** | **196** | **217** | **419** | **464** |
| Vinyl Chloride | **197** | **246** | **285** | **334** | **602** | **487** |
| **Cumulative Risk (1)** | **5.63E-08** | **6.66E-08** | **7.84E-08** | **9.09E-08** | **1.64E-07** | **1.39E-07** |

| Date Sampled | 7/16/2007 | 8/06/2007 | 9/06/2007 | 10/18/2007 | 11/05/2007 | 12/12/2007 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | **35** | **42** | **35** | <14.8 | <14.3 | <13.8 |
| 1,1-Dichloroethene | <14.3 | <14.3 | <13.8 | <14.8 | <14.3 | <13.8 |
| cis-1,2-Dichloroethene | **2,710** | **2,020** | **2,200** | **694** | **815** | **866** |
| trans-1,2-Dichloroethene | **35** | **38** | **33** | <14.8 | **16** | **14** |
| Tetrachloroethene | **20** | **23** | **16** | **18** | <14.3 | <13.8 |
| Toluene | <14.3 | <14.3 | <13.8 | <14.8 | <14.3 | <13.8 |
| 1,1,1-Trichloroethane | <14.3 | <14.3 | <13.8 | <14.8 | <14.3 | <13.8 |
| Trichloroethene | **642** | **641** | **512** | **277** | **217** | **191** |
| Vinyl Chloride | **533** | **411** | **454** | **174** | **203** | **176** |
| **Cumulative Risk (1)** | **1.60E-07** | **1.32E-07** | **1.35E-07** | **5.76E-08** | **6.06E-08** | **5.30E-08** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

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Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/04/2008 | 2/12/2008 | 3/13/2008 | 4/14/2008 | 5/05/2008 | 6/03/2008 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | <13.8 | <13.8 | **16** | <14.3 | **21** | **19** |
| 1,1-Dichloroethene | <13.8 | <13.8 | <13.4 | <14.3 | <13.8 | <14.3 |
| cis-1,2-Dichloroethene | **1,090** | **979** | **1,210** | **463** | **1,370** | **1,460** |
| trans-1,2-Dichloroethene | <13.8 | **20** | **17** | <14.3 | **22** | **23** |
| Tetrachloroethene | <13.8 | <13.8 | <13.4 | <14.3 | <13.8 | <14.3 |
| Toluene | <13.8 | <13.8 | <13.4 | <14.3 | <13.8 | <14.3 |
| 1,1,1-Trichloroethane | <13.8 | <13.8 | <13.4 | <14.3 | <13.8 | <14.3 |
| Trichloroethene | **226** | **233** | **304** | **45** | **323** | **328** |
| Vinyl Chloride | **206** | <13.8 | **216** | **145** | <13.8 | **272** |
| **Cumulative Risk (1)** | **6.17E-08** | **1.76E-08** | **6.81E-08** | **3.82E-08** | **2.23E-08** | **8.24E-08** |

| Date Sampled | 7/09/2008 | 8/11/2008 | 9/20/2008 | 10/17/2008 | 11/24/2008 | 12/10/2008 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | <229 | **25** | **26** | **28** | <221 | **32** |
| 1,1-Dichloroethene | <229 | <14.3 | <14.3 | <14.3 | <221 | <13.4 |
| cis-1,2-Dichloroethene | **2,810** | **1,490** | **1,910** | **5,010** | **3,680** | **1,700** |
| trans-1,2-Dichloroethene | <229 | **23** | **24** | **28** | <221 | **29** |
| Tetrachloroethene | <229 | **18** | <14.3 | <14.3 | <221 | **182** |
| Toluene | <229 | <14.3 | <14.3 | <14.3 | <221 | <13.4 |
| 1,1,1-Trichloroethane | <229 | <14.3 | <14.3 | <14.3 | <221 | <13.4 |
| Trichloroethene | **679** | **372** | **321** | **330** | **828** | **335** |
| Vinyl Chloride | **763** | **389** | **404** | **497** | **759** | **401** |
| **Cumulative Risk (1)** | **2.48E-07** | **1.12E-07** | **1.13E-07** | **1.35E-07** | **2.54E-07** | **1.39E-07** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

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Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

# Table D-8
# Summary of Treatment System Air Sampling
# Wayne Reclamation & Recycling

| Date Sampled | 1/23/2009 | 2/09/2009 | 3/30/2009 | 4/20/2009 | 5/13/2009 | 6/10/2009 |
|---|---|---|---|---|---|---|
| **CONSTITUENT (ppb[v/v])** | **EFFLUENT SAMPLE** | | | | | |
| 1,1-Dichloroethane | **22** | <14.3 | **21** | <13.4 | **12** | <14.3 |
| 1,1-Dichloroethene | <13.4 | <14.3 | <13.8 | <13.4 | <13.8 | <14.3 |
| cis-1,2-Dichloroethene | **2,340** | **1,060** | **1,350** | **868** | **1,230** | **898** |
| trans-1,2-Dichloroethene | **23** | <14.3 | **22** | **16** | **16** | <14.3 |
| Tetrachloroethene | <13.4 | <14.3 | <13.8 | <13.4 | <13.8 | <14.3 |
| Toluene | <13.4 | <14.3 | <13.8 | <13.4 | <13.8 | <14.3 |
| 1,1,1-Trichloroethane | <13.4 | <14.3 | <13.8 | <13.4 | <13.8 | <14.3 |
| Trichloroethene | **367** | **185** | **288** | **155** | **192** | **201** |
| Vinyl Chloride | **390** | **298** | **295** | **223** | **230** | **221** |
| **Cumulative Risk (1)** | **1.12E-07** | **8.09E-08** | **8.56E-08** | **6.18E-08** | **6.55E-08** | **6.39E-08** |

**Notes:**

(1) Cumulative Risk calculation is indicated on Table 14.

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Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PCE *Carcinogen* | TCE *Carcinogen* | 1,1-DCE *Non-Carcinogen* | cis-1,2-DCE *Non-Carcinogen* | trans-1,2-DCE *Non-Carcinogen* | VC *Carcinogen* | 1,1,1-TCA *Non-Carcinogen* | 1,1-DCA *Carcinogen* | Toluene *Non-Carcinogen* | |
| **IN** | (ppb[v/v]) | 46 | 860 | 17 | 2300 | 140 | 240 | 43 | 45 | 17 | |
| **6/24/1999** | (g/s) | 0.0003 | 0.0048 | 0.0001 | 0.0129 | 0.0008 | 0.0013 | 0.0002 | 0.0003 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.023 | 0.000 | 0.060 | 0.004 | 0.006 | 0.001 | 0.001 | 0.000 | |
| | ECR | 7.14E-09 | 4.52E-08 | | | | 5.55E-08 | | 1.93E-11 | | 1.08E-07 |
| **EFF** | (ppb[v/v]) | 6 | 120 | 6 | 390 | 35 | 35 | 8 | 9 | 3 | |
| **6/24/1999** | (g/s) | 0.0000 | 0.0007 | 0.0000 | 0.0022 | 0.0002 | 0.0002 | 0.0000 | 0.0001 | 0.0000 | |
| | Max.Conc. | 0.000 | 0.003 | 0.000 | 0.010 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | |
| | ECR | 9.31E-10 | 6.31E-09 | | | | 8.10E-09 | | 3.86E-12 | | 1.53E-08 |
| **EFF** | (ppb[v/v]) | 51 | 440 | 8 | 2200 | 100 | 340 | 180 | 45 | 8 | |
| **7/13/1999** | (g/s) | 0.0003 | 0.0025 | 0.0000 | 0.0123 | 0.0006 | 0.0019 | 0.0010 | 0.0003 | 0.0000 | |
| | Max.Conc. | 0.001 | 0.012 | 0.000 | 0.058 | 0.003 | 0.009 | 0.005 | 0.001 | 0.000 | |
| | ECR | 7.91E-09 | 2.31E-08 | | | | 7.87E-08 | | 1.93E-11 | | 1.10E-07 |
| **EFF** | (ppb[v/v]) | 27 | 810 | 45 | 9 | 140 | 270 | 44 | 45 | 9 | |
| **8/6/1999** | (g/s) | 0.0002 | 0.0045 | 0.0003 | 0.0001 | 0.0008 | 0.0015 | 0.0002 | 0.0003 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.021 | 0.001 | 0.000 | 0.004 | 0.007 | 0.001 | 0.001 | 0.000 | |
| | ECR | 4.19E-09 | 4.26E-08 | | | | 6.25E-08 | | 1.93E-11 | | 1.09E-07 |
| **EFF** | (ppb[v/v]) | 25 | 390 | 4 | 1600 | 120 | 220 | 200 | 60 | 2 | |
| **9/1/1999** | (g/s) | 0.0001 | 0.0022 | 0.0000 | 0.0090 | 0.0007 | 0.0012 | 0.0011 | 0.0003 | 0.0000 | |
| | Max.Conc. | 0.001 | 0.010 | 0.000 | 0.042 | 0.003 | 0.006 | 0.005 | 0.002 | 0.000 | |
| | ECR | 3.88E-09 | 2.05E-08 | | | | 5.09E-08 | | 2.57E-11 | | 7.53E-08 |
| **EFF** | (ppb[v/v]) | 63 | 1700 | 9 | 3300 | 260 | 180 | 99 | 61 | 9 | |
| **10/14/1999** | (g/s) | 0.0004 | 0.0095 | 0.0001 | 0.0185 | 0.0015 | 0.0010 | 0.0006 | 0.0003 | 0.0001 | |
| | Max.Conc. | 0.002 | 0.045 | 0.000 | 0.087 | 0.007 | 0.005 | 0.003 | 0.002 | 0.000 | |
| | ECR | 9.78E-09 | 8.94E-08 | | | | 4.17E-08 | | 2.62E-11 | | 1.41E-07 |
| **EFF** | (ppb[v/v]) | 16 | 390 | 14 | 1400 | 76 | 200 | 97 | 32 | 14 | |
| **11/22/1999** | (g/s) | 0.0001 | 0.0022 | 0.0001 | 0.0078 | 0.0004 | 0.0011 | 0.0005 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.010 | 0.000 | 0.037 | 0.002 | 0.005 | 0.003 | 0.001 | 0.000 | |
| | ECR | 2.48E-09 | 2.05E-08 | | | | 4.63E-08 | | 1.37E-11 | | 6.93E-08 |
| **EFF** | (ppb[v/v]) | 38 | 520 | 14 | 1500 | 95 | 200 | 66 | 32 | 14 | |
| **12/13/1999** | (g/s) | 0.0002 | 0.0029 | 0.0001 | 0.0084 | 0.0005 | 0.0011 | 0.0004 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.014 | 0.000 | 0.039 | 0.002 | 0.005 | 0.002 | 0.001 | 0.000 | |
| | ECR | 5.90E-09 | 2.74E-08 | | | | 4.63E-08 | | 1.37E-11 | | 7.96E-08 |
| **EFF** | (ppb[v/v]) | 57 | 440 | 18 | 1100 | 68 | 94 | 110 | 29 | 18 | |
| **1/3/2000** | (g/s) | 0.0003 | 0.0025 | 0.0001 | 0.0062 | 0.0004 | 0.0005 | 0.0006 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.012 | 0.000 | 0.029 | 0.002 | 0.002 | 0.003 | 0.001 | 0.000 | |
| | ECR | 8.84E-09 | 2.31E-08 | | | | 2.18E-08 | | 1.24E-11 | | 5.38E-08 |
| **EFF** | (ppb[v/v]) | 8 | 220 | 8 | 740 | 55 | 91 | 29 | 17 | 8 | |
| **2/7/2000** | (g/s) | 0.0000 | 0.0012 | 0.0000 | 0.0041 | 0.0003 | 0.0005 | 0.0002 | 0.0001 | 0.0000 | |
| | Max.Conc. | 0.000 | 0.006 | 0.000 | 0.019 | 0.001 | 0.002 | 0.001 | 0.000 | 0.000 | |
| | ECR | 1.29E-09 | 1.16E-08 | | | | 2.11E-08 | | 7.29E-12 | | 3.39E-08 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **PCE** *Carcinogen* | **TCE** *Carcinogen* | **1,1-DCE** *Non-Carcinogen* | **cis-1,2-DCE** *Non-Carcinogen* | **trans-1,2-DCE** *Non-Carcinogen* | **VC** *Carcinogen* | **1,1,1-TCA** *Non-Carcinogen* | **1,1-DCA** *Carcinogen* | **Toluene** *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 88 | 400 | 9 | 1200 | 46 | 61 | 89 | 25 | 9 | |
| **3/15/2000** | (g/s) | 0.0005 | 0.0022 | 0.0001 | 0.0067 | 0.0003 | 0.0003 | 0.0005 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.002 | 0.011 | 0.000 | 0.032 | 0.001 | 0.002 | 0.002 | 0.001 | 0.000 | |
| | ECR | 1.37E-08 | 2.10E-08 | | | | 1.41E-08 | | 1.07E-11 | | 4.88E-08 |
| **EFF** | (ppb[v/v]) | 21 | 300 | 3 | 2300 | 83 | 260 | 47 | 31 | 3 | |
| **4/25/2000** | (g/s) | 0.0001 | 0.0017 | 0.0000 | 0.0129 | 0.0005 | 0.0015 | 0.0003 | 0.0002 | 0.0000 | |
| | Max.Conc. | 0.001 | 0.008 | 0.000 | 0.060 | 0.002 | 0.007 | 0.001 | 0.001 | 0.000 | |
| | ECR | 3.26E-09 | 1.58E-08 | | | | 6.02E-08 | | 1.33E-11 | | 7.92E-08 |
| **EFF** | (ppb[v/v]) | 110 | 440 | 12 | 1000 | 71 | 130 | 150 | 30 | 12 | |
| **5/24/2000** | (g/s) | 0.0006 | 0.0025 | 0.0001 | 0.0056 | 0.0004 | 0.0007 | 0.0008 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.003 | 0.012 | 0.000 | 0.026 | 0.002 | 0.003 | 0.004 | 0.001 | 0.000 | |
| | ECR | 1.71E-08 | 2.31E-08 | | | | 3.01E-08 | | 1.29E-11 | | 7.03E-08 |
| **EFF** | (ppb[v/v]) | 30 | 380 | 2 | 1800 | 85 | 190 | 110 | 27 | 2 | |
| **6/6/2000** | (g/s) | 0.0002 | 0.0021 | 0.0000 | 0.0101 | 0.0005 | 0.0011 | 0.0006 | 0.0002 | 0.0000 | |
| | Max.Conc. | 0.001 | 0.010 | 0.000 | 0.047 | 0.002 | 0.005 | 0.003 | 0.001 | 0.000 | |
| | ECR | 4.66E-09 | 2.00E-08 | | | | 4.40E-08 | | 1.16E-11 | | 6.86E-08 |
| **EFF** | (ppb[v/v]) | 31 | 290 | 10 | 1400 | 39 | 190 | 80 | 21 | 10 | |
| **7/25/2000** | (g/s) | 0.0002 | 0.0016 | 0.0001 | 0.0078 | 0.0002 | 0.0011 | 0.0004 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.008 | 0.000 | 0.037 | 0.001 | 0.005 | 0.002 | 0.001 | 0.000 | |
| | ECR | 4.81E-09 | 1.53E-08 | | | | 4.40E-08 | | 9.00E-12 | | 6.40E-08 |
| **EFF** | (ppb[v/v]) | 56 | 840 | 12 | 2200 | 100 | 230 | 59 | 30 | 12 | |
| **8/4/2000** | (g/s) | 0.0003 | 0.0047 | 0.0001 | 0.0123 | 0.0006 | 0.0013 | 0.0003 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.022 | 0.000 | 0.058 | 0.003 | 0.006 | 0.002 | 0.001 | 0.000 | |
| | ECR | 8.69E-09 | 4.42E-08 | | | | 5.32E-08 | | 1.29E-11 | | 1.06E-07 |
| **EFF** | (ppb[v/v]) | 22 | 540 | 12 | 2100 | 140 | 210 | 80 | 34 | 12 | |
| **9/5/2000** | (g/s) | 0.0001 | 0.0030 | 0.0001 | 0.0118 | 0.0008 | 0.0012 | 0.0004 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.014 | 0.000 | 0.055 | 0.004 | 0.006 | 0.002 | 0.001 | 0.000 | |
| | ECR | 3.41E-09 | 2.84E-08 | | | | 4.86E-08 | | 1.46E-11 | | 8.04E-08 |
| **EFF** | (ppb[v/v]) | 52 | 920 | 18 | 2200 | 160 | 130 | 93 | 49 | 18 | |
| **10/6/2000** | (g/s) | 0.0003 | 0.0052 | 0.0001 | 0.0123 | 0.0009 | 0.0007 | 0.0005 | 0.0003 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.024 | 0.000 | 0.058 | 0.004 | 0.003 | 0.002 | 0.001 | 0.000 | |
| | ECR | 8.07E-09 | 4.84E-08 | | | | 3.01E-08 | | 2.10E-11 | | 8.66E-08 |
| **EFF** | (ppb[v/v]) | 110 | 840 | 10 | 1900 | 97 | 170 | 73 | 36 | 10 | |
| **11/7/2000** | (g/s) | 0.0006 | 0.0047 | 0.0001 | 0.0106 | 0.0005 | 0.0010 | 0.0004 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.003 | 0.022 | 0.000 | 0.050 | 0.003 | 0.004 | 0.002 | 0.001 | 0.000 | |
| | ECR | 1.71E-08 | 4.42E-08 | | | | 3.93E-08 | | 1.54E-11 | | 1.01E-07 |
| **EFF** | (ppb[v/v]) | 38 | 760 | 9 | 1900 | 100 | 190 | 50 | 30 | 9 | |
| **12/21/2000** | (g/s) | 0.0002 | 0.0043 | 0.0001 | 0.0106 | 0.0006 | 0.0011 | 0.0003 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.020 | 0.000 | 0.050 | 0.003 | 0.005 | 0.001 | 0.001 | 0.000 | |
| | ECR | 5.90E-09 | 4.00E-08 | | | | 4.40E-08 | | 1.29E-11 | | 8.99E-08 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PCE *Carcinogen* | TCE *Carcinogen* | 1,1-DCE *Non-Carcinogen* | cis-1,2-DCE *Non-Carcinogen* | trans-1,2-DCE *Non-Carcinogen* | VC *Carcinogen* | 1,1,1-TCA *Non-Carcinogen* | 1,1-DCA *Carcinogen* | Toluene *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 38 | 630 | 9 | 2000 | 49 | 270 | 53 | 30 | 9 | |
| **1/30/2001** | (g/s) | 0.0002 | 0.0035 | 0.0001 | 0.0112 | 0.0003 | 0.0015 | 0.0003 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.017 | 0.000 | 0.053 | 0.001 | 0.007 | 0.001 | 0.001 | 0.000 | |
| | ECR | 5.90E-09 | 3.31E-08 | | | | 6.25E-08 | | 1.29E-11 | | 1.02E-07 |
| **EFF** | (ppb[v/v]) | 140 | 260 | 140 | 1700 | 1 | 180 | 140 | 140 | 140 | |
| **2/26/2001** | (g/s) | 0.0008 | 0.0015 | 0.0008 | 0.0095 | 0.0000 | 0.0010 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.007 | 0.004 | 0.045 | 0.000 | 0.005 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.37E-08 | | | | 4.17E-08 | | 6.00E-11 | | 7.71E-08 |
| **EFF** | (ppb[v/v]) | 34 | 340 | 2 | 1300 | 1 | 190 | 26 | 18 | 4 | |
| **3/21/2001** | (g/s) | 0.0002 | 0.0019 | 0.0000 | 0.0073 | 0.0000 | 0.0011 | 0.0001 | 0.0001 | 0.0000 | |
| | Max.Conc. | 0.001 | 0.009 | 0.000 | 0.034 | 0.000 | 0.005 | 0.001 | 0.000 | 0.000 | |
| | ECR | 5.28E-09 | 1.79E-08 | | | | 4.40E-08 | | 7.72E-12 | | 6.71E-08 |
| **EFF** | (ppb[v/v]) | 140 | 160 | 140 | 1000 | 1 | 160 | 140 | 140 | 140 | |
| **4/23/2001** | (g/s) | 0.0008 | 0.0009 | 0.0008 | 0.0056 | 0.0000 | 0.0009 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.026 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 8.42E-09 | | | | 3.70E-08 | | 6.00E-11 | | 6.72E-08 |
| **EFF** | (ppb[v/v]) | 150 | 150 | 150 | 630 | 1 | 150 | 150 | 150 | 150 | |
| **5/21/2001** | (g/s) | 0.0008 | 0.0008 | 0.0008 | 0.0035 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.017 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.33E-08 | 7.89E-09 | | | | 3.47E-08 | | 6.43E-11 | | 6.59E-08 |
| **EFF** | (ppb[v/v]) | 150 | 430 | 150 | 1400 | 1 | 210 | 150 | 150 | 150 | |
| **6/13/2001** | (g/s) | 0.0008 | 0.0024 | 0.0008 | 0.0078 | 0.0000 | 0.0012 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.011 | 0.004 | 0.037 | 0.000 | 0.006 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.33E-08 | 2.26E-08 | | | | 4.86E-08 | | 6.43E-11 | | 9.46E-08 |
| **EFF** | (ppb[v/v]) | 140 | 140 | 140 | 1100 | 1 | 140 | 140 | 140 | 140 | |
| **7/23/2001** | (g/s) | 0.0008 | 0.0008 | 0.0008 | 0.0062 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.029 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 7.36E-09 | | | | 3.24E-08 | | 6.00E-11 | | 6.16E-08 |
| **EFF** | (ppb[v/v]) | 140 | 280 | 140 | 600 | 1 | 140 | 140 | 140 | 140 | |
| **8/23/2001** | (g/s) | 0.0008 | 0.0016 | 0.0008 | 0.0034 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.007 | 0.004 | 0.016 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.47E-08 | | | | 3.24E-08 | | 6.00E-11 | | 6.89E-08 |
| **EFF** | (ppb[v/v]) | 140 | 280 | 140 | 680 | 1 | 140 | 140 | 140 | 140 | |
| **9/17/2001** | (g/s) | 0.0008 | 0.0016 | 0.0008 | 0.0038 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.007 | 0.004 | 0.018 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.47E-08 | | | | 3.24E-08 | | 6.00E-11 | | 6.89E-08 |
| **EFF** | (ppb[v/v]) | 140 | 410 | 140 | 1500 | 140 | 260 | 140 | 140 | 140 | |
| **10/31/2001** | (g/s) | 0.0008 | 0.0023 | 0.0008 | 0.0084 | 0.0008 | 0.0015 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.011 | 0.004 | 0.039 | 0.004 | 0.007 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 2.16E-08 | | | | 6.02E-08 | | 6.00E-11 | | 1.04E-07 |
| **EFF** | (ppb[v/v]) | 100 | 460 | 100 | 2200 | 100 | 210 | 100 | 100 | 100 | |
| **11/18/2001** | (g/s) | 0.0006 | 0.0026 | 0.0006 | 0.0123 | 0.0006 | 0.0012 | 0.0006 | 0.0006 | 0.0006 | |
| | Max.Conc. | 0.003 | 0.012 | 0.003 | 0.058 | 0.003 | 0.006 | 0.003 | 0.003 | 0.003 | |
| | ECR | 1.55E-08 | 2.42E-08 | | | | 4.86E-08 | | 4.29E-11 | | 8.84E-08 |
| **EFF** | (ppb[v/v]) | 130 | 300 | 130 | 1700 | 1 | 210 | 130 | 130 | 130 | |
| **12/28/2001** | (g/s) | 0.0007 | 0.0017 | 0.0007 | 0.0095 | 0.0000 | 0.0012 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.008 | 0.003 | 0.045 | 0.000 | 0.006 | 0.003 | 0.003 | 0.003 | |
| | ECR | 2.02E-08 | 1.58E-08 | | | | 4.86E-08 | | 5.57E-11 | | 8.46E-08 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PCE *Carcinogen* | TCE *Carcinogen* | 1,1-DCE *Non-Carcinogen* | cis-1,2-DCE *Non-Carcinogen* | trans-1,2-DCE *Non-Carcinogen* | VC *Carcinogen* | 1,1,1-TCA *Non-Carcinogen* | 1,1-DCA *Carcinogen* | Toluene *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 130 | 280 | 130 | 1600 | 1 | 280 | 130 | 130 | 130 | |
| **1/18/2002** | (g/s) | 0.0007 | 0.0016 | 0.0007 | 0.0090 | 0.0000 | 0.0016 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.007 | 0.003 | 0.042 | 0.000 | 0.007 | 0.003 | 0.003 | 0.003 | |
| | ECR | 2.02E-08 | 1.47E-08 | | | | 6.48E-08 | | 5.57E-11 | | 9.98E-08 |
| **EFF** | (ppb[v/v]) | 130 | 530 | 130 | 2800 | 1 | 500 | 130 | 130 | 130 | |
| **2/7/2002** | (g/s) | 0.0007 | 0.0030 | 0.0007 | 0.0157 | 0.0000 | 0.0028 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.014 | 0.003 | 0.074 | 0.000 | 0.013 | 0.003 | 0.003 | 0.003 | |
| | ECR | 2.02E-08 | 2.79E-08 | | | | 1.16E-07 | | 5.57E-11 | | 1.64E-07 |
| **EFF** | (ppb[v/v]) | 140 | 180 | 140 | 900 | 1 | 160 | 140 | 140 | 140 | |
| **3/21/2002** | (g/s) | 0.0008 | 0.0010 | 0.0008 | 0.0050 | 0.0000 | 0.0009 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.005 | 0.004 | 0.024 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 9.47E-09 | | | | 3.70E-08 | | 6.00E-11 | | 6.83E-08 |
| **EFF** | (ppb[v/v]) | 8 | 29 | 1 | 37 | 1 | 1 | 42 | 4 | 1 | |
| **4/23/2002** | (g/s) | 0.0000 | 0.0002 | 0.0000 | 0.0002 | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0000 | |
| | Max.Conc. | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | |
| | ECR | 1.21E-09 | 1.53E-09 | | | | 2.31E-10 | | 1.50E-12 | | 2.97E-09 |
| **EFF** | (ppb[v/v]) | 140 | 160 | 140 | 800 | 1 | 150 | 140 | 140 | 140 | |
| **5/23/2002** | (g/s) | 0.0008 | 0.0009 | 0.0008 | 0.0045 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.021 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 8.42E-09 | | | | 3.47E-08 | | 6.00E-11 | | 6.49E-08 |
| **EFF** | (ppb[v/v]) | 140 | 290 | 140 | 1200 | 1 | 220 | 140 | 140 | 140 | |
| **6/18/2002** | (g/s) | 0.0008 | 0.0016 | 0.0008 | 0.0067 | 0.0000 | 0.0012 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.008 | 0.004 | 0.032 | 0.000 | 0.006 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.53E-08 | | | | 5.09E-08 | | 6.00E-11 | | 8.80E-08 |
| **EFF** | (ppb[v/v]) | 140 | 140 | 140 | 230 | 1 | 140 | 140 | 140 | 140 | |
| **7/19/2002** | (g/s) | 0.0008 | 0.0008 | 0.0008 | 0.0013 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.006 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 7.36E-09 | | | | 3.24E-08 | | 6.00E-11 | | 6.16E-08 |
| **EFF** | (ppb[v/v]) | 140 | 200 | 140 | 920 | 1 | 220 | 140 | 140 | 140 | |
| **8/14/2002** | (g/s) | 0.0008 | 0.0011 | 0.0008 | 0.0052 | 0.0000 | 0.0012 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.005 | 0.004 | 0.024 | 0.000 | 0.006 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.05E-08 | | | | 5.09E-08 | | 6.00E-11 | | 8.32E-08 |
| **EFF** | (ppb[v/v]) | 100 | 520 | 100 | 1500 | 1 | 100 | 100 | 100 | 100 | |
| **9/20/2002** | (g/s) | 0.0006 | 0.0029 | 0.0006 | 0.0084 | 0.0000 | 0.0006 | 0.0006 | 0.0006 | 0.0006 | |
| | Max.Conc. | 0.003 | 0.014 | 0.003 | 0.039 | 0.000 | 0.003 | 0.003 | 0.003 | 0.003 | |
| | ECR | 1.55E-08 | 2.74E-08 | | | | 2.31E-08 | | 4.29E-11 | | 6.61E-08 |
| **EFF** | (ppb[v/v]) | 140 | 720 | 140 | 1300 | 1 | 140 | 140 | 140 | 140 | |
| **10/24/2002** | (g/s) | 0.0008 | 0.0040 | 0.0008 | 0.0073 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.019 | 0.004 | 0.034 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 3.79E-08 | | | | 3.24E-08 | | 6.00E-11 | | 9.21E-08 |
| **EFF** | (ppb[v/v]) | 140 | 720 | 140 | 1200 | 1 | 140 | 140 | 140 | 140 | |
| **11/21/2002** | (g/s) | 0.0008 | 0.0040 | 0.0008 | 0.0067 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.019 | 0.004 | 0.032 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 3.79E-08 | | | | 3.24E-08 | | 6.00E-11 | | 9.21E-08 |
| **EFF** | (ppb[v/v]) | 140 | 410 | 140 | 1100 | 1 | 140 | 140 | 140 | 140 | |
| **12/13/2002** | (g/s) | 0.0008 | 0.0023 | 0.0008 | 0.0062 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.011 | 0.004 | 0.029 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 2.16E-08 | | | | 3.24E-08 | | 6.00E-11 | | 7.58E-08 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PCE *Carcinogen* | TCE *Carcinogen* | 1,1-DCE *Non-Carcinogen* | cis-1,2-DCE *Non-Carcinogen* | trans-1,2-DCE *Non-Carcinogen* | VC *Carcinogen* | 1,1,1-TCA *Non-Carcinogen* | 1,1-DCA *Carcinogen* | Toluene *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 140 | 420 | 140 | 920 | 1 | 140 | 140 | 140 | 140 | |
| **1/23/2003** | (g/s) | 0.0008 | 0.0024 | 0.0008 | 0.0052 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.011 | 0.004 | 0.024 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 2.21E-08 | | | | 3.24E-08 | | 6.00E-11 | | 7.63E-08 |
| **EFF** | (ppb[v/v]) | 140 | 320 | 140 | 520 | 1 | 140 | 140 | 140 | 140 | |
| **2/10/2003** | (g/s) | 0.0008 | 0.0018 | 0.0008 | 0.0029 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.008 | 0.004 | 0.014 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.68E-08 | | | | 3.24E-08 | | 6.00E-11 | | 7.10E-08 |
| **EFF** | (ppb[v/v]) | 130 | 320 | 130 | 760 | 1 | 130 | 130 | 130 | 130 | |
| **3/19/2003** | (g/s) | 0.0007 | 0.0018 | 0.0007 | 0.0043 | 0.0000 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.008 | 0.003 | 0.020 | 0.000 | 0.003 | 0.003 | 0.003 | 0.003 | |
| | ECR | 2.02E-08 | 1.68E-08 | | | | 3.01E-08 | | 5.57E-11 | | 6.71E-08 |
| **EFF** | (ppb[v/v]) | 140 | 380 | 140 | 1400 | 1 | 140 | 140 | 140 | 140 | |
| **4/15/2003** | (g/s) | 0.0008 | 0.0021 | 0.0008 | 0.0078 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.010 | 0.004 | 0.037 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 2.00E-08 | | | | 3.24E-08 | | 6.00E-11 | | 7.42E-08 |
| **EFF** | (ppb[v/v]) | 130 | 280 | 130 | 750 | 1 | 130 | 130 | 130 | 130 | |
| **5/19/2003** | (g/s) | 0.0007 | 0.0016 | 0.0007 | 0.0042 | 0.0000 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.007 | 0.003 | 0.020 | 0.000 | 0.003 | 0.003 | 0.003 | 0.003 | |
| | ECR | 2.02E-08 | 1.47E-08 | | | | 3.01E-08 | | 5.57E-11 | | 6.50E-08 |
| **EFF** | (ppb[v/v]) | 140 | 390 | 140 | 1000 | 1 | 140 | 140 | 140 | 140 | |
| **6/6/2003** | (g/s) | 0.0008 | 0.0022 | 0.0008 | 0.0056 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.010 | 0.004 | 0.026 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 2.05E-08 | | | | 3.24E-08 | | 6.00E-11 | | 7.47E-08 |
| **EFF** | (ppb[v/v]) | 140 | 290 | 140 | 740 | 1 | 140 | 140 | 140 | 140 | |
| **7/14/2003** | (g/s) | 0.0008 | 0.0016 | 0.0008 | 0.0041 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.008 | 0.004 | 0.019 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.53E-08 | | | | 3.24E-08 | | 6.00E-11 | | 6.94E-08 |
| **EFF** | (ppb[v/v]) | 140 | 330 | 140 | 800 | 1 | 140 | 140 | 140 | 140 | |
| **8/21/2003** | (g/s) | 0.0008 | 0.0018 | 0.0008 | 0.0045 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.009 | 0.004 | 0.021 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.74E-08 | | | | 3.24E-08 | | 6.00E-11 | | 7.15E-08 |
| **EFF** | (ppb[v/v]) | 7.4 | 240 | 0.66 | 270 | 1 | 11 | 5.4 | 2.3 | 0.66 | |
| **9/15/2003** | (g/s) | 0.0000 | 0.0013 | 0.0000 | 0.0015 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | |
| | Max.Conc. | 0.000 | 0.006 | 0.000 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |
| | ECR | 1.15E-09 | 1.26E-08 | | | | 2.55E-09 | | 9.86E-13 | | 1.63E-08 |
| **EFF** | (ppb[v/v]) | 130 | 230 | 130 | 750 | 1 | 130 | 130 | 130 | 130 | |
| **10/16/2003** | (g/s) | 0.0007 | 0.0013 | 0.0007 | 0.0042 | 0.0000 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.006 | 0.003 | 0.020 | 0.000 | 0.003 | 0.003 | 0.003 | 0.003 | |
| | ECR | 2.02E-08 | 1.21E-08 | | | | 3.01E-08 | | 5.57E-11 | | 6.24E-08 |
| **EFF** | (ppb[v/v]) | 130 | 230 | 130 | 380 | 1 | 130 | 130 | 130 | 130 | |
| **11/7/2003** | (g/s) | 0.0007 | 0.0013 | 0.0007 | 0.0021 | 0.0000 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.006 | 0.003 | 0.010 | 0.000 | 0.003 | 0.003 | 0.003 | 0.003 | |
| | ECR | 2.02E-08 | 1.21E-08 | | | | 3.01E-08 | | 5.57E-11 | | 6.24E-08 |
| **EFF** | (ppb[v/v]) | 130 | 220 | 130 | 1100 | 1 | 190 | 130 | 130 | 130 | |
| **12/22/2003** | (g/s) | 0.0007 | 0.0012 | 0.0007 | 0.0062 | 0.0000 | 0.0011 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.006 | 0.003 | 0.029 | 0.000 | 0.005 | 0.003 | 0.003 | 0.003 | |
| | ECR | 2.02E-08 | 1.16E-08 | | | | 4.40E-08 | | 5.57E-11 | | 7.58E-08 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PCE *Carcinogen* | TCE *Carcinogen* | 1,1-DCE *Non-Carcinogen* | cis-1,2-DCE *Non-Carcinogen* | trans-1,2-DCE *Non-Carcinogen* | VC *Carcinogen* | 1,1,1-TCA *Non-Carcinogen* | 1,1-DCA *Carcinogen* | Toluene *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 130 | 130 | 130 | 350 | 1 | 150 | 130 | 130 | 130 | |
| **1/29/2004** | (g/s) | 0.0007 | 0.0007 | 0.0007 | 0.0020 | 0.0000 | 0.0008 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.003 | 0.003 | 0.009 | 0.000 | 0.004 | 0.003 | 0.003 | 0.003 | |
| | ECR | 2.02E-08 | 6.84E-09 | | | | 3.47E-08 | | 5.57E-11 | | 6.18E-08 |
| **EFF** | (ppb[v/v]) | 120 | 300 | 120 | 1200 | 1 | 220 | 120 | 120 | 120 | |
| **2/20/2004** | (g/s) | 0.0007 | 0.0017 | 0.0007 | 0.0067 | 0.0000 | 0.0012 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.008 | 0.003 | 0.032 | 0.000 | 0.006 | 0.003 | 0.003 | 0.003 | |
| | ECR | 1.86E-08 | 1.58E-08 | | | | 5.09E-08 | | 5.14E-11 | | 8.54E-08 |
| **EFF** | (ppb[v/v]) | 140 | 140 | 140 | 540 | 1 | 140 | 140 | 140 | 140 | |
| **3/16/2004** | (g/s) | 0.0008 | 0.0008 | 0.0008 | 0.0030 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.014 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 7.36E-09 | | | | 3.24E-08 | | 6.00E-11 | | 6.16E-08 |
| **EFF** | (ppb[v/v]) | 7.1 | 480 | 3.1 | 2300 | 1 | 350 | 4.8 | 18 | 2.1 | |
| **4/19/2004** | (g/s) | 0.0000 | 0.0027 | 0.0000 | 0.0129 | 0.0000 | 0.0020 | 0.0000 | 0.0001 | 0.0000 | |
| | Max.Conc. | 0.000 | 0.013 | 0.000 | 0.060 | 0.000 | 0.009 | 0.000 | 0.000 | 0.000 | |
| | ECR | 1.10E-09 | 2.52E-08 | | | | 8.10E-08 | | 7.72E-12 | | 1.07E-07 |
| **EFF** | (ppb[v/v]) | 150 | 150 | 150 | 510 | 1 | 150 | 150 | 150 | 150 | |
| **5/18/2004** | (g/s) | 0.0008 | 0.0008 | 0.0008 | 0.0029 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.013 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.33E-08 | 7.89E-09 | | | | 3.47E-08 | | 6.43E-11 | | 6.59E-08 |
| **EFF** | (ppb[v/v]) | 12 | 260 | 5.0 | 1800 | 1 | 300 | 4.3 | 23 | 5.8 | |
| **6/23/2004** | (g/s) | 0.0001 | 0.0015 | 0.0000 | 0.0101 | 0.0000 | 0.0017 | 0.0000 | 0.0001 | 0.0000 | |
| | Max.Conc. | 0.000 | 0.007 | 0.000 | 0.047 | 0.000 | 0.008 | 0.000 | 0.001 | 0.000 | |
| | ECR | 1.86E-09 | 1.37E-08 | | | | 6.94E-08 | | 9.86E-12 | | 8.50E-08 |
| **EFF** | (ppb[v/v]) | 140 | 250 | 140 | 1300 | 1 | 260 | 140 | 140 | 140 | |
| **7/30/2004** | (g/s) | 0.0008 | 0.0014 | 0.0008 | 0.0073 | 0.0000 | 0.0015 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.007 | 0.004 | 0.034 | 0.000 | 0.007 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.32E-08 | | | | 6.02E-08 | | 6.00E-11 | | 9.51E-08 |
| **EFF** | (ppb[v/v]) | 130 | 180 | 130 | 1000 | 1 | 140 | 130 | 130 | 130 | |
| **8/31/2004** | (g/s) | 0.0007 | 0.0010 | 0.0007 | 0.0056 | 0.0000 | 0.0008 | 0.0007 | 0.0007 | 0.0007 | |
| | Max.Conc. | 0.003 | 0.005 | 0.003 | 0.026 | 0.000 | 0.004 | 0.003 | 0.003 | 0.003 | |
| | ECR | 2.02E-08 | 9.47E-09 | | | | 3.24E-08 | | 5.57E-11 | | 6.21E-08 |
| **EFF** | (ppb[v/v]) | 140 | 140 | 140 | 620 | 1 | 140 | 140 | 140 | 140 | |
| **9/22/2004** | (g/s) | 0.0008 | 0.0008 | 0.0008 | 0.0035 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.016 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 7.36E-09 | | | | 3.24E-08 | | 6.00E-11 | | 6.16E-08 |
| **EFF** | (ppb[v/v]) | 150 | 180 | 150 | 820 | 1 | 180 | 150 | 150 | 150 | |
| **10/19/2004** | (g/s) | 0.0008 | 0.0010 | 0.0008 | 0.0046 | 0.0000 | 0.0010 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.005 | 0.004 | 0.022 | 0.000 | 0.005 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.33E-08 | 9.47E-09 | | | | 4.17E-08 | | 6.43E-11 | | 7.45E-08 |
| **EFF** | (ppb[v/v]) | 140 | 210 | 140 | 1000 | 1 | 170 | 140 | 140 | 140 | |
| **11/22/2004** | (g/s) | 0.0008 | 0.0012 | 0.0008 | 0.0056 | 0.0000 | 0.0010 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.006 | 0.004 | 0.026 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.10E-08 | | | | 3.93E-08 | | 6.00E-11 | | 7.22E-08 |
| **EFF** | (ppb[v/v]) | 140 | 780 | 140 | 1300 | 1 | 140 | 140 | 140 | 140 | |
| **12/17/2004** | (g/s) | 0.0008 | 0.0044 | 0.0008 | 0.0073 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.021 | 0.004 | 0.034 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 4.10E-08 | | | | 3.24E-08 | | 6.00E-11 | | 9.52E-08 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **PCE** *Carcinogen* | **TCE** *Carcinogen* | **1,1-DCE** *Non-Carcinogen* | **cis-1,2-DCE** *Non-Carcinogen* | **trans-1,2-DCE** *Non-Carcinogen* | **VC** *Carcinogen* | **1,1,1-TCA** *Non-Carcinogen* | **1,1-DCA** *Carcinogen* | **Toluene** *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 140 | 140 | 140 | 700 | 1 | 140 | 140 | 140 | 140 | |
| **1/26/2005** | (g/s) | 0.0008 | 0.0008 | 0.0008 | 0.0039 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.018 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 7.36E-09 | | | | 3.24E-08 | | 6.00E-11 | | 6.16E-08 |
| **EFF** | (ppb[v/v]) | 140 | 140 | 140 | 750 | 1 | 140 | 140 | 140 | 140 | |
| **2/18/2005** | (g/s) | 0.0008 | 0.0008 | 0.0008 | 0.0042 | 0.0000 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.020 | 0.000 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 7.36E-09 | | | | 3.24E-08 | | 6.00E-11 | | 6.16E-08 |
| **EFF** | (ppb[v/v]) | 140 | 140 | 140 | 620 | 170 | 180 | 140 | 140 | 140 | |
| **3/16/2005** | (g/s) | 0.0008 | 0.0008 | 0.0008 | 0.0035 | 0.0010 | 0.0010 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.004 | 0.004 | 0.016 | 0.004 | 0.005 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 7.36E-09 | | | | 4.17E-08 | | 6.00E-11 | | 7.08E-08 |
| **EFF** | (ppb[v/v]) | 46.8 | 718 | 13.2 | 4330 | 14.1 | 13.8 | 15.6 | 53.2 | 13.2 | |
| **4/19/2005** | (g/s) | 0.0003 | 0.0040 | 0.0001 | 0.0242 | 0.0001 | 0.0001 | 0.0001 | 0.0003 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.019 | 0.000 | 0.114 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | |
| | ECR | 7.26E-09 | 3.78E-08 | | | | 3.19E-09 | | 2.28E-11 | | 4.82E-08 |
| **EFF** | (ppb[v/v]) | 15.1 | 34.7 | 3.4 | 0.71 | 1 | 0.74 | 0.64 | 15.9 | 0.71 | |
| **5/13/2005** | (g/s) | 0.0001 | 0.0002 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | |
| | Max.Conc. | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.34E-09 | 1.83E-09 | | | | 1.71E-10 | | 6.82E-12 | | 4.35E-09 |
| **EFF** | (ppb[v/v]) | 21.6 | 522 | 3 | 1970 | 113 | 274 | 18.2 | 22 | 1.5 | |
| **6/03/2005** | (g/s) | 0.0001 | 0.0029 | 0.0000 | 0.0110 | 0.0006 | 0.0015 | 0.0001 | 0.0001 | 0.0000 | |
| | Max.Conc. | 0.001 | 0.014 | 0.000 | 0.052 | 0.003 | 0.007 | 0.000 | 0.001 | 0.000 | |
| | ECR | 3.35E-09 | 2.75E-08 | | | | 6.34E-08 | | 9.43E-12 | | 9.42E-08 |
| **EFF** | (ppb[v/v]) | 140 | 250 | 140 | 920 | 140 | 140 | 140 | 140 | 140 | |
| **7/15/2005** | (g/s) | 0.0008 | 0.0014 | 0.0008 | 0.0052 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.007 | 0.004 | 0.024 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.32E-08 | | | | 2.87E-07 | | 6.00E-11 | | 3.22E-07 |
| **EFF** | (ppb[v/v]) | 140 | 710 | 140 | 2400 | 140 | 530 | 140 | 140 | 140 | |
| **8/26/2005** | (g/s) | 0.0008 | 0.0040 | 0.0008 | 0.0134 | 0.0008 | 0.0030 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.019 | 0.004 | 0.063 | 0.004 | 0.014 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 3.73E-08 | | | | 1.09E-06 | | 6.00E-11 | | **1.15E-06** |
| **EFF** | (ppb[v/v]) | 13.8 | 13.8 | 13.8 | 7160 | 185 | 13.8 | 16.40 | 56.2 | 13.8 | |
| **9/29/2005** | (g/s) | 0.0001 | 0.0001 | 0.0001 | 0.0401 | 0.0010 | 0.0001 | 0.0001 | 0.0003 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.000 | 0.000 | 0.188 | 0.005 | 0.000 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.14E-09 | 7.26E-10 | | | | 2.83E-08 | | 2.41E-11 | | 3.12E-08 |
| **EFF** | (ppb[v/v]) | 140 | 300 | 140 | 1300 | 140 | 140 | 140 | 140 | 140 | |
| **10/17/2005** | (g/s) | 0.0008 | 0.0017 | 0.0008 | 0.0073 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | |
| | Max.Conc. | 0.004 | 0.008 | 0.004 | 0.034 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | |
| | ECR | 2.17E-08 | 1.58E-08 | | | | 2.87E-07 | | 6.00E-11 | | 3.25E-07 |
| **EFF** | (ppb[v/v]) | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | |
| **11/03/2005** | (g/s) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | |
| | Max.Conc. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |
| | ECR | 1.07E-10 | 3.63E-11 | | | | 1.42E-09 | | 2.96E-13 | | 1.56E-09 |
| **EFF** | (ppb[v/v]) | 14.8 | 224 | 14.8 | 1 | 19.4 | 344 | 14.8 | 22.5 | 14.8 | |
| **12/01/2005** | (g/s) | 0.0001 | 0.0013 | 0.0001 | 0.0000 | 0.0001 | 0.0019 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.006 | 0.000 | 0.000 | 0.001 | 0.009 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.30E-09 | 1.18E-08 | | | | 7.06E-07 | | 9.65E-12 | | 7.20E-07 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/vl]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.
Bold = Cumulative Cancer Risk above action level.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PCE *Carcinogen* | TCE *Carcinogen* | 1,1-DCE *Non-Carcinogen* | cis-1,2-DCE *Non-Carcinogen* | trans-1,2-DCE *Non-Carcinogen* | VC *Carcinogen* | 1,1,1-TCA *Non-Carcinogen* | 1,1-DCA *Carcinogen* | Toluene *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 14 | 315 | 14 | 2330 | 23 | 423 | 14 | 26 | 14 | |
| **1/09/2006** | (g/s) | 0.0001 | 0.0018 | 0.0001 | 0.0130 | 0.0001 | 0.0024 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.008 | 0.000 | 0.061 | 0.001 | 0.011 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.22E-09 | 1.66E-08 | | | | 9.79E-08 | | 1.11E-11 | | 1.17E-07 |
| **EFF** | (ppb[v/v]) | 3.4 | 283 | 4.7 | 1930 | 19.9 | 310 | 3.4 | 21.4 | 3.4 | |
| **2/10/2006** | (g/s) | 0.0000 | 0.0016 | 0.0000 | 0.0108 | 0.0001 | 0.0017 | 0.0000 | 0.0001 | 0.0000 | |
| | Max.Conc. | 0.000 | 0.007 | 0.000 | 0.051 | 0.001 | 0.008 | 0.000 | 0.001 | 0.000 | |
| | ECR | 5.28E-10 | 1.49E-08 | | | | 7.17E-08 | | 9.17E-12 | | 8.72E-08 |
| **EFF** | (ppb[v/v]) | 13.8 | 270 | 13.8 | 2650 | 18 | 215.00 | 13.8 | 21.5 | 13.8 | |
| **3/15/2006** | (g/s) | 0.0001 | 0.0015 | 0.0001 | 0.0148 | 0.0001 | 0.0012 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.007 | 0.000 | 0.070 | 0.000 | 0.006 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.14E-09 | 1.42E-08 | | | | 4.98E-08 | | 9.22E-12 | | 6.61E-08 |
| **EFF** | (ppb[v/v]) | 34.7 | 279 | 13.8 | 818 | 38 | 147 | 18.0 | 13.8 | 18.0 | |
| **4/26/2006** | (g/s) | 0.0002 | 0.0016 | 0.0001 | 0.0046 | 0.0002 | 0.0008 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.007 | 0.000 | 0.022 | 0.001 | 0.004 | 0.000 | 0.000 | 0.000 | |
| | ECR | 5.38E-09 | 1.47E-08 | | | | 3.40E-08 | | 5.92E-12 | | 5.41E-08 |
| **EFF** | (ppb[v/v]) | 11.8 | 421 | 11.8 | 1800 | 123 | 317 | 11.8 | 23.30 | 11.8 | |
| **5/23/2006** | (g/s) | 0.0001 | 0.0024 | 0.0001 | 0.0101 | 0.0007 | 0.0018 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.011 | 0.000 | 0.047 | 0.003 | 0.008 | 0.000 | 0.001 | 0.000 | |
| | ECR | 1.83E-09 | 2.21E-08 | | | | 7.34E-08 | | 9.99E-12 | | 9.74E-08 |
| **EFF** | (ppb[v/v]) | 22.4 | 313 | 13.8 | 1160 | 48.6 | 168 | 28.4 | 13.8 | 13.8 | |
| **6/25/2006** | (g/s) | 0.0001 | 0.0018 | 0.0001 | 0.0065 | 0.0003 | 0.0009 | 0.0002 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.008 | 0.000 | 0.031 | 0.001 | 0.004 | 0.001 | 0.000 | 0.000 | |
| | ECR | 3.48E-09 | 1.65E-08 | | | | 3.89E-08 | | 5.92E-12 | | 5.88E-08 |
| **EFF** | (ppb[v/v]) | 52 | 378 | 14 | 1550 | 59 | 319 | 15 | 31 | 14 | |
| **7/18/2006** | (g/s) | 0.0003 | 0.0021 | 0.0001 | 0.0087 | 0.0003 | 0.0018 | 0.0001 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.010 | 0.000 | 0.041 | 0.002 | 0.008 | 0.000 | 0.001 | 0.000 | |
| | ECR | 8.13E-09 | 1.99E-08 | | | | 7.38E-08 | | 1.32E-11 | | 1.02E-07 |
| **EFF** | (ppb[v/v]) | 13.8 | 14 | 13.8 | 14 | 13.8 | 14 | 13.8 | 13.8 | 35.7 | |
| **8/10/2006** | (g/s) | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | |
| | Max.Conc. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | |
| | ECR | 2.14E-09 | 7.26E-10 | | | | 3.19E-09 | | 5.92E-12 | | 6.07E-09 |
| **EFF** | (ppb[v/v]) | 14.3 | 427 | 14.3 | 1720 | 93 | 14.30 | 14.3 | 33.6 | 14.3 | |
| **9/26/2006** | (g/s) | 0.0001 | 0.0024 | 0.0001 | 0.0096 | 0.0005 | 0.0001 | 0.0001 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.011 | 0.000 | 0.045 | 0.002 | 0.000 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.22E-09 | 2.25E-08 | | | | 3.31E-09 | | 1.44E-11 | | 2.80E-08 |
| **EFF** | (ppb[v/v]) | 93.7 | 888 | 19.8 | 2050 | 146 | 220 | 31.3 | 39.2 | 19.8 | |
| **10/20/2006** | (g/s) | 0.0005 | 0.0050 | 0.0001 | 0.0115 | 0.0008 | 0.0012 | 0.0002 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.002 | 0.023 | 0.001 | 0.054 | 0.004 | 0.006 | 0.001 | 0.001 | 0.001 | |
| | ECR | 1.45E-08 | 4.67E-08 | | | | 5.09E-08 | | 1.68E-11 | | 1.12E-07 |
| **EFF** | (ppb[v/v]) | 16.6 | 242 | 14.3 | 1420 | 49 | 230 | 14.3 | 20.90 | 14.3 | |
| **11/27/2006** | (g/s) | 0.0001 | 0.0014 | 0.0001 | 0.0080 | 0.0003 | 0.0013 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.006 | 0.000 | 0.037 | 0.001 | 0.006 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.58E-09 | 1.27E-08 | | | | 5.32E-08 | | 8.96E-12 | | 6.85E-08 |
| **EFF** | (ppb[v/v]) | 13.8 | 191 | 13.8 | 927 | 17.0 | 199 | 13.8 | 14.0 | 13.8 | |
| **12/11/2006** | (g/s) | 0.0001 | 0.0011 | 0.0001 | 0.0052 | 0.0001 | 0.0011 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.005 | 0.000 | 0.024 | 0.000 | 0.005 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.14E-09 | 1.00E-08 | | | | 4.61E-08 | | 6.00E-12 | | 5.83E-08 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.
Bold = Cumulative Cancer Risk above action level.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PCE *Carcinogen* | TCE *Carcinogen* | 1,1-DCE *Non-Carcinogen* | cis-1,2-DCE *Non-Carcinogen* | trans-1,2-DCE *Non-Carcinogen* | VC *Carcinogen* | 1,1,1-TCA *Non-Carcinogen* | 1,1-DCA *Carcinogen* | Toluene *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 14 | 162 | 14 | 1010 | 20 | 197 | 14 | 23 | 14 | |
| **1/04/2007** | (g/s) | 0.0001 | 0.0009 | 0.0001 | 0.0057 | 0.0001 | 0.0011 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.004 | 0.000 | 0.027 | 0.001 | 0.005 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.22E-09 | 8.52E-09 | | | | 4.56E-08 | | 9.86E-12 | | 5.63E-08 |
| **EFF** | (ppb[v/v]) | 14 | 141 | 14 | 891 | 14 | 246 | 14 | 14 | 14 | |
| **2/02/2007** | (g/s) | 0.0001 | 0.0008 | 0.0001 | 0.0050 | 0.0001 | 0.0014 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.004 | 0.000 | 0.023 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.22E-09 | 7.42E-09 | | | | 5.69E-08 | | 6.13E-12 | | 6.66E-08 |
| **EFF** | (ppb[v/v]) | 14 | 196 | 14 | 1150 | 16 | 285 | 14 | 15 | 14 | |
| **3/13/2007** | (g/s) | 0.0001 | 0.0011 | 0.0001 | 0.0064 | 0.0001 | 0.0016 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.005 | 0.000 | 0.030 | 0.000 | 0.007 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.14E-09 | 1.03E-08 | | | | 6.60E-08 | | 6.43E-12 | | 7.84E-08 |
| **EFF** | (ppb[v/v]) | 14 | 217 | 14 | 1330 | 26 | 334 | 14 | 17 | 14 | |
| **4/17/2007** | (g/s) | 0.0001 | 0.0012 | 0.0001 | 0.0074 | 0.0001 | 0.0019 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.006 | 0.000 | 0.035 | 0.001 | 0.009 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.14E-09 | 1.14E-08 | | | | 7.73E-08 | | 7.29E-12 | | 9.09E-08 |
| **EFF** | (ppb[v/v]) | 14 | 419 | 14 | 1980 | 34 | 602 | 14 | 23 | 14 | |
| **5/07/2007** | (g/s) | 0.0001 | 0.0023 | 0.0001 | 0.0111 | 0.0002 | 0.0034 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.011 | 0.000 | 0.052 | 0.001 | 0.016 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.22E-09 | 2.20E-08 | | | | 1.39E-07 | | 9.86E-12 | | 1.64E-07 |
| **EFF** | (ppb[v/v]) | 14 | 464 | 14 | 1010 | 28 | 487 | 14 | 26 | 14 | |
| **6/06/2007** | (g/s) | 0.0001 | 0.0026 | 0.0001 | 0.0057 | 0.0002 | 0.0027 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.012 | 0.000 | 0.027 | 0.001 | 0.013 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.22E-09 | 2.44E-08 | | | | 1.13E-07 | | 1.11E-11 | | 1.39E-07 |
| **EFF** | (ppb[v/v]) | 20 | 642 | 14 | 2710 | 35 | 533 | 14 | 35 | 14 | |
| **7/16/2007** | (g/s) | 0.0001 | 0.0036 | 0.0001 | 0.0152 | 0.0002 | 0.0030 | 0.0001 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.017 | 0.000 | 0.071 | 0.001 | 0.014 | 0.000 | 0.001 | 0.000 | |
| | ECR | 3.10E-09 | 3.38E-08 | | | | 1.23E-07 | | 1.49E-11 | | 1.60E-07 |
| **EFF** | (ppb[v/v]) | 23 | 641 | 14 | 2020 | 38 | 411 | 14 | 42 | 14 | |
| **8/06/2007** | (g/s) | 0.0001 | 0.0036 | 0.0001 | 0.0113 | 0.0002 | 0.0023 | 0.0001 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.001 | 0.017 | 0.000 | 0.053 | 0.001 | 0.011 | 0.000 | 0.001 | 0.000 | |
| | ECR | 3.57E-09 | 3.37E-08 | | | | 9.51E-08 | | 1.78E-11 | | 1.32E-07 |
| **EFF** | (ppb[v/v]) | 16 | 512 | 14 | 2200 | 33 | 454 | 14 | 35 | 14 | |
| **9/06/2007** | (g/s) | 0.0001 | 0.0029 | 0.0001 | 0.0123 | 0.0002 | 0.0025 | 0.0001 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.013 | 0.000 | 0.058 | 0.001 | 0.012 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.54E-09 | 2.69E-08 | | | | 1.05E-07 | | 1.50E-11 | | 1.35E-07 |
| **EFF** | (ppb[v/v]) | 18 | 277 | 15 | 694 | 15 | 174 | 15 | 15 | 15 | |
| **10/18/2007** | (g/s) | 0.0001 | 0.0016 | 0.0001 | 0.0039 | 0.0001 | 0.0010 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.007 | 0.000 | 0.018 | 0.000 | 0.005 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.73E-09 | 1.46E-08 | | | | 4.03E-08 | | 6.34E-12 | | 5.76E-08 |
| **EFF** | (ppb[v/v]) | 14 | 217 | 14 | 815 | 16 | 203 | 14 | 14 | 14 | |
| **11/05/2007** | (g/s) | 0.0001 | 0.0012 | 0.0001 | 0.0046 | 0.0001 | 0.0011 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.006 | 0.000 | 0.021 | 0.000 | 0.005 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.17E-09 | 1.14E-08 | | | | 4.70E-08 | | 6.00E-12 | | 6.06E-08 |
| **EFF** | (ppb[v/v]) | 14 | 191 | 14 | 866 | 14 | 176 | 14 | 14 | 14 | |
| **12/12/2007** | (g/s) | 0.0001 | 0.0011 | 0.0001 | 0.0048 | 0.0001 | 0.0010 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.005 | 0.000 | 0.023 | 0.000 | 0.005 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.17E-09 | 1.00E-08 | | | | 4.07E-08 | | 6.00E-12 | | 5.30E-08 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.
Bold = Cumulative Cancer Risk above action level.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **PCE** *Carcinogen* | **TCE** *Carcinogen* | **1,1-DCE** *Non-Carcinogen* | **cis-1,2-DCE** *Non-Carcinogen* | **trans-1,2-DCE** *Non-Carcinogen* | **VC** *Carcinogen* | **1,1,1-TCA** *Non-Carcinogen* | **1,1-DCA** *Carcinogen* | **Toluene** *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 14 | 226 | 14 | 1090 | 14 | 206 | 14 | 14 | 14 | |
| **1/04/2008** | (g/s) | 0.0001 | 0.0013 | 0.0001 | 0.0061 | 0.0001 | 0.0012 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.006 | 0.000 | 0.029 | 0.000 | 0.005 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.14E-09 | 1.19E-08 | | | | 4.77E-08 | | 5.92E-12 | | 6.17E-08 |
| **EFF** | (ppb[v/v]) | 14 | 233 | 14 | 979 | 20 | 14 | 14 | 14 | 14 | |
| **2/12/2008** | (g/s) | 0.0001 | 0.0013 | 0.0001 | 0.0055 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.006 | 0.000 | 0.026 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.14E-09 | 1.23E-08 | | | | 3.19E-09 | | 5.92E-12 | | 1.76E-08 |
| **EFF** | (ppb[v/v]) | 13 | 304 | 13 | 1210 | 17 | 216 | 13 | 16 | 13 | |
| **3/13/2008** | (g/s) | 0.0001 | 0.0017 | 0.0001 | 0.0068 | 0.0001 | 0.0012 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.008 | 0.000 | 0.032 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.08E-09 | 1.60E-08 | | | | 5.00E-08 | | 6.86E-12 | | 6.81E-08 |
| **EFF** | (ppb[v/v]) | 14 | 45 | 14 | 463 | 14 | 145 | 14 | 14 | 14 | |
| **4/14/2008** | (g/s) | 0.0001 | 0.0003 | 0.0001 | 0.0026 | 0.0001 | 0.0008 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.001 | 0.000 | 0.012 | 0.000 | 0.004 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.22E-09 | 2.37E-09 | | | | 3.36E-08 | | 6.13E-12 | | 3.82E-08 |
| **EFF** | (ppb[v/v]) | 14 | 323 | 14 | 1370 | 22 | 14 | 14 | 21 | 14 | |
| **5/08/2008** | (g/s) | 0.0001 | 0.0018 | 0.0001 | 0.0077 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.008 | 0.000 | 0.036 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.14E-09 | 1.70E-08 | | | | 3.19E-09 | | 9.00E-12 | | 2.23E-08 |
| **EFF** | (ppb[v/v]) | 14 | 328 | 14 | 1460 | 23 | 272 | 14 | 19 | 14 | |
| **6/03/2008** | (g/s) | 0.0001 | 0.0018 | 0.0001 | 0.0082 | 0.0001 | 0.0015 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.009 | 0.000 | 0.038 | 0.001 | 0.007 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.22E-09 | 1.73E-08 | | | | 6.30E-08 | | 8.15E-12 | | 8.24E-08 |
| **EFF** | (ppb[v/v]) | 229 | 679 | 229 | 2810 | 14 | 763 | 229 | 229 | 14 | |
| **7/09/2008** | (g/s) | 0.0013 | 0.0038 | 0.0013 | 0.0157 | 0.0001 | 0.0043 | 0.0013 | 0.0013 | 0.0001 | |
| | Max.Conc. | 0.006 | 0.018 | 0.006 | 0.074 | 0.000 | 0.020 | 0.006 | 0.006 | 0.000 | |
| | ECR | 3.55E-08 | 3.57E-08 | | | | 1.77E-07 | | 9.82E-11 | | 2.48E-07 |
| **EFF** | (ppb[v/v]) | 18 | 372 | 14 | 1490 | 20 | 389 | 14 | 25 | 14 | |
| **8/11/2008** | (g/s) | 0.0001 | 0.0021 | 0.0001 | 0.0083 | 0.0001 | 0.0022 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.010 | 0.000 | 0.039 | 0.001 | 0.010 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.79E-09 | 1.96E-08 | | | | 9.00E-08 | | 1.07E-11 | | 1.12E-07 |
| **EFF** | (ppb[v/v]) | 14 | 321 | 14 | 1910 | 17 | 404 | 14 | 26 | 13 | |
| **9/20/2008** | (g/s) | 0.0001 | 0.0018 | 0.0001 | 0.0107 | 0.0001 | 0.0023 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.008 | 0.000 | 0.050 | 0.000 | 0.011 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.17E-09 | 1.69E-08 | | | | 9.35E-08 | | 1.11E-11 | | 1.13E-07 |
| **EFF** | (ppb[v/v]) | 14 | 330 | 14 | 5010 | 14 | 497 | 14 | 28 | 14 | |
| **10/17/2008** | (g/s) | 0.0001 | 0.0018 | 0.0001 | 0.0281 | 0.0001 | 0.0028 | 0.0001 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.009 | 0.000 | 0.132 | 0.000 | 0.013 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.17E-09 | 1.74E-08 | | | | 1.15E-07 | | 1.20E-11 | | 1.35E-07 |
| **EFF** | (ppb[v/v]) | 221 | 828 | 221 | 3680 | 22 | 759 | 221 | 221 | 14 | |
| **11/24/2008** | (g/s) | 0.0012 | 0.0046 | 0.0012 | 0.0206 | 0.0001 | 0.0042 | 0.0012 | 0.0012 | 0.0001 | |
| | Max.Conc. | 0.006 | 0.022 | 0.006 | 0.097 | 0.001 | 0.020 | 0.006 | 0.006 | 0.000 | |
| | ECR | 3.43E-08 | 4.36E-08 | | | | 1.76E-07 | | 9.47E-11 | | 2.54E-07 |
| **EFF** | (ppb[v/v]) | 182 | 335 | 13 | 1700 | 23 | 401 | 13 | 32 | 14 | |
| **12/10/2008** | (g/s) | 0.0010 | 0.0019 | 0.0001 | 0.0095 | 0.0001 | 0.0022 | 0.0001 | 0.0002 | 0.0001 | |
| | Max.Conc. | 0.005 | 0.009 | 0.000 | 0.045 | 0.001 | 0.011 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.82E-08 | 1.76E-08 | | | | 9.28E-08 | | 1.37E-11 | | 1.39E-07 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.
Bold = Cumulative Cancer Risk above action level.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

**Table D-9**
**Summary of Air Dispersion Calculations**
**Wayne Reclamation & Recycling**

| Description / Sample Date | Input / Output | CONSTITUENTS | | | | | | | | | Cumulative Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **PCE** *Carcinogen* | **TCE** *Carcinogen* | **1,1-DCE** *Non-Carcinogen* | **cis-1,2-DCE** *Non-Carcinogen* | **trans-1,2-DCE** *Non-Carcinogen* | **VC** *Carcinogen* | **1,1,1-TCA** *Non-Carcinogen* | **1,1-DCA** *Carcinogen* | **Toluene** *Non-Carcinogen* | |
| **EFF** | (ppb[v/v]) | 13 | 367 | 13 | 2340 | 23 | 390 | 13 | 22 | 13 | |
| **1/23/2009** | (g/s) | 0.0001 | 0.0021 | 0.0001 | 0.0131 | 0.0001 | 0.0022 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.010 | 0.000 | 0.062 | 0.001 | 0.010 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.02E-09 | 1.93E-08 | | | | 9.03E-08 | | 9.43E-12 | | 1.12E-07 |
| **EFF** | (ppb[v/v]) | 14 | 185 | 14 | 1060 | 23 | 298 | 14 | 14 | 14 | |
| **2/09/2009** | (g/s) | 0.0001 | 0.0010 | 0.0001 | 0.0059 | 0.0001 | 0.0017 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.005 | 0.000 | 0.028 | 0.001 | 0.008 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.17E-09 | 9.73E-09 | | | | 6.90E-08 | | 6.00E-12 | | 8.09E-08 |
| **EFF** | (ppb[v/v]) | 14 | 288 | 14 | 1350 | 22 | 295 | 14 | 21 | 14 | |
| **3/30/2009** | (g/s) | 0.0001 | 0.0016 | 0.0001 | 0.0076 | 0.0001 | 0.0017 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.008 | 0.000 | 0.036 | 0.001 | 0.008 | 0.000 | 0.001 | 0.000 | |
| | ECR | 2.17E-09 | 1.51E-08 | | | | 6.83E-08 | | 9.00E-12 | | 8.56E-08 |
| **EFF** | (ppb[v/v]) | 13 | 155 | 13 | 868 | 16 | 223 | 13 | 13 | 13 | |
| **4/20/2009** | (g/s) | 0.0001 | 0.0009 | 0.0001 | 0.0049 | 0.0001 | 0.0012 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.004 | 0.000 | 0.023 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.02E-09 | 8.15E-09 | | | | 5.16E-08 | | 5.57E-12 | | 6.18E-08 |
| **EFF** | (ppb[v/v]) | 14 | 192 | 14 | 1230 | 16 | 230 | 14 | 12 | 14 | |
| **5/13/2009** | (g/s) | 0.0001 | 0.0011 | 0.0001 | 0.0069 | 0.0001 | 0.0013 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.005 | 0.000 | 0.032 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.17E-09 | 1.01E-08 | | | | 5.32E-08 | | 5.14E-12 | | 6.55E-08 |
| **EFF** | (ppb[v/v]) | 14 | 201 | 14 | 898 | 14 | 221 | 14 | 14 | 14 | |
| **6/10/2009** | (g/s) | 0.0001 | 0.0011 | 0.0001 | 0.0050 | 0.0001 | 0.0012 | 0.0001 | 0.0001 | 0.0001 | |
| | Max.Conc. | 0.000 | 0.005 | 0.000 | 0.024 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | |
| | ECR | 2.17E-09 | 1.06E-08 | | | | 5.11E-08 | | 6.00E-12 | | 6.39E-08 |

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.
g/s = ppb[v/v] x 1,000 / (22,500 x 2.205 x 3,600).
ECR = Excess Cancer Risk = Maximum concentration (in $\mu g/m^3$) x Unit Risk Factor.
IN = Sample collected from air treatment system influent.
EFF = Sample collected from air treatment system effluent.
Bold = Cumulative Cancer Risk above action level.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ($\mu g/m^3$) from ISC-LT2 model run output.

Unit Risk Factors are:

| | | |
|---|---|---|
| Vinyl Chloride | -- | 8.80E-06 |
| 1,1-Dichloroethane | -- | 1.63E-08 |
| Trichloroethene | -- | 2.00E-06 |
| Tetrachloroethene | -- | 5.90E-06 |

# APPENDIX E

# SUMMARY OF AIR DISPERSION MODELING AND CUMULATIVE CANCER RISK CALCULATIONS

# APPENDIX E

# SUMMARY OF AIR DISPERSION MODELING AND CUMULATIVE CANCER RISK CALCULATIONS

## Wayne Reclamation & Recycling

The following summarizes the air modeling conducted by MWH Americas, Inc. for the Wayne Reclamation & Recycling (WRR) site in Columbia City, Indiana to assess the maximum annual average ground-level concentration (GLC) that could occur at any point outside the perimeter of the WRR site. Descriptions of the model, modeling procedures, and the results are provided below.

## AIR DISPERSION MODELING PROCEDURES

The modeling was performed by utilizing the United States Environmental Protection Agency (U.S. EPA) model Industrial Source Complex – Long-Term (ISC-LT) to evaluate the ambient air impact of emissions from the site. Dispersion modeling was conducted on both the air treatment system influent and effluent in order to compare the risks associated with both treated and untreated air.

### Meteorological Data

Meteorological data from 1985 was entered into the model for the Columbia City, Indiana region. Model output is highly sensitive to such data, as changes in atmospheric conditions will directly affect the ability of a discharged pollutant to disperse in the surrounding air. Meteorological data such as wind speed, wind direction, urban and rural mixing heights, Pasquill Stability Classifications (rated A to G, with G being the most stable), and ambient air temperature were converted into a binary data package. The package was then loaded into the ISC-LT model. The model then evaluated these conditions with the remaining model input parameters to identify which combinations of these conditions would result in maximum GLC of pollutants.

### Emissions Source Data

The following data represents the emissions parameters at the WRR site that were entered into the model:

| | |
|---|---|
| Stack Height | 9.1 meters |

| | |
|---|---|
| Stack Diameter | 0.4064 meters |
| Stack Base Elevation | 6.1 meters |
| Exhaust Temperature | 73° C |
| Gas Exit Velocity | 13.08 meters per second |
| Volumetric Flow Rate | 1.7 cubic meters per second |
| Influent/Effluent Concentrations | Sampling events (See ***Table 14***, Progress Rpt. 3. Current data are provided in ***Table 13*** of this report.) |
| Terrain | Flat |
| Dispersion Coefficients | Rural |
| Final Plume Rise | On |
| Stack-tip Downwash | On |
| Receptor Height | 0 meters |

**Modeling Procedure**

A grid was established to describe the relationship of the emission source with its surroundings, including the location of the site boundaries and any potential receptors. A Cartesian grid was established around the site to determine GLC locations.

**HUMAN HEALTH RISK ASSESSMENT**

The maximum concentrations determined by the air modeling study were multiplied by unit risk factors (URFs) to obtain the excess carcinogenic risk posed by the emissions through the inhalation route. The URFs used in this study were developed from toxicity values included in U.S. EPA's Integrated Risk Information System (IRIS), U.S. EPA's "Health Assessment Summary Tables" (HEAST, Annual FY-1995), and information provided by the U.S. EPA Environmental Criteria Assessment Office. The URFs assume a chronic exposure to the carcinogenic chemicals for 24 hours a day, 365 days a year, for 70 years. The URFs for the constituents of concern are:

| | |
|---|---|
| Vinyl chloride - | 8.80E-06 |
| 1,1-Dichloroethane - | 1.63E-08 |
| Trichloroethene - | 2.00E-06 |
| Tetrachloroethene - | 5.90E-06 |

The excess cancer risk (ECR) to the maximally exposed individual can be calculated by multiplying the URF by the ambient concentration of the chemical in question. In a

residential zone, the maximally-exposed individual is assumed to be continuously exposed to the chemical for 70 years.

The maximum individual excess cancer risk (MICR) to the maximally-exposed individual due to air toxic emissions from the WRR site was calculated by multiplying the appropriate risk factor (URF) by the maximum annual GLC at the maximally-exposed individual:

MICR = URF * GLC

A summary of these calculations using concentrations generated from the model output is provided in ***Table 14*** of Progress Report 3, and current calculations are provided in ***Table 14*** of this progress report.

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On June 24, 1999, air treatment was discontinued; however, monthly air sampling continues to be conducted on the effluent air stream as a means of monitoring potential risk levels associated with the untreated air stream. Effluent air sampling conducted since discontinuation of air treatment indicates the 1x10-6 action level has not been exceeded, with one minor exception of August 2005 (exceeded by 0.05x10-6). This was due to a slight increase in the vinyl chloride concentration noted in the system effluent air stream during that month's sampling.

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