



**CONESTOGA-ROVERS  
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July 31, 2009

Reference No. 17302

Mr. Robert Marshall  
Indiana Department of Environmental Management  
Office of Solid and Hazardous Waste  
Correct Action Section  
100 North Senate Avenue  
Indianapolis, IN 46204

Dear Mr. Marshall:

Re: RFI Progress Report  
General Motors Corporation  
2915 Dr. Martin Luther King Jr. Boulevard  
Anderson, Indiana (IND 980 700 801)

Enclosed please find the Resource Conservation and Recovery Act (RCRA) Investigation (RFI) Progress Report for January 2009 through March 2009 for the above reference site.

Should you have any questions, please do not hesitate to contact our office.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Shannon Richardson, B. A. Sc.

SR/mma/2

Encl.

cc: John Bassett (AECOM)  
Scott Haeger (Alix Partners)  
James Redwine (Alix Partners)  
Steve Song (Environ)  
Ian Richardson (CRA)  
Anderson Public Library

**QUARTERLY TECHNICAL PROGRESS REPORT**  
**April 2009 – June 2009**  
**RCRA FACILITY INVESTIGATION**  
**GENERAL MOTORS CORPORATION**  
**2915 Dr. MARTIN LUTHER KING JR. BOULEVARD**  
**ANDERSON INDIANA**  
**IND 980 700 801**

July 31, 2009

Prepared by

AECOM  
5010 Stone Mill Road  
Bloomington, Indiana 47408  
812 336 0972

## 1) Summary of Activities

The following tasks were conducted during the period of April 1, 2009 to June 30, 2009.

1. Conducted semiannual groundwater monitoring in April 2009 pursuant to the draft Site-Wide Groundwater Monitoring Plan (GMP) (Earth Tech, March 2008) and draft Corrective Measures Proposal (Conestoga Rovers & Associates, March 2008).

## Semiannual Groundwater Monitoring

In accordance with the GMP, 16 monitoring wells and two off-site surface water monitoring points (Pond North and Pond Intake) were sampled during a three day period from April 28 to April 30, 2009. This sampling round constituted the third semiannual sampling round under the draft GMP. Low flow sampling was conducted using a positive displacement pump pursuant to the approved RFI Work Plan. Analytical parameters included US EPA Target Compound List (TCL) VOCs for all wells and surface water monitoring points and natural attenuation parameters for selected wells as identified in the GMP.

The following deviations from the semiannual well sampling list provided in the draft GMP occurred:

1. MW 8 located in the South Court Area was inaccessible for sampling due to ongoing site restoration activities.
2. Unit 1 monitoring well MW 31R was sampled as requested by IDEM in their draft May 2, 2008 GMP comments.

## 2) Estimate of Percentage of RFI Completed

95%

## 3) Summary of Findings

Analytical results for the April 2009 sampling event are presented in Tables 1 and 2. Table 1 reports the TCL VOC results from both surface water (WS) and groundwater (WG) samples obtained during the April 2009 sampling event. Table 2 reports the results of several general water quality parameters that may have significance to the evaluation of natural attenuation (NA) of volatile organic compounds. These analyses were performed on a selected group of site monitoring well samples pursuant to the GMP.

### Groundwater:

A comparison of the April 2009 VOC results to previous results indicates that there has been no significant change in groundwater quality at Unit 3S well MW 3, which is used to evaluate the effectiveness of interim corrective measure (soil excavation and HRC addition to the shallow water table) completed in the South Court Area in July 2005. The concentration of cis-1,2-dichloroethene (6.1 mg/L) and vinyl chloride (0.44 mg/L) remain above the MCL at Unit 3D well MW 14.

Unit 3D well MW 85, located on the Meadowbrook Golf Course, was sampled for the fourth time in April 2009 with the first sampling event for this well occurring in February 2008. The concentration of vinyl chloride exceeded the MCL in all four samples. The concentration of vinyl chloride decreased slightly from 0.5 mg/L in December 2008 to 0.44 mg/L in April 2009. The concentration of vinyl chloride at MW 85 remains above the MCL.

The concentration of vinyl chloride (0.044 mg/L) remains above the MCL at perimeter Unit 3S well MW 49 located on CSXT property. The concentration of vinyl chloride at MW 49 is consistent with previous results.

The concentrations of vinyl chloride remained above the MCL at perimeter Unit 3D monitoring locations 65, and 66 at concentrations of 0.69 and 0.027 mg/L respectively.

The concentrations of the primary site VOCs (trichloroethene, cis-1,2-dichloroethene, and vinyl chloride) detected in interior wells MW-4, 40, 41, 42, and 68 during the April 2009 sampling event are consistent with previous results. All three primary VOCs remain above MCLs at Unit 3S well MW 68. Cis-1,2-dichloroethene and vinyl chloride are the only primary VOCs that remain above MCLs at Unit 3S wells MW 40 and MW 42 and Unit 3D wells MW 41 and MW-4.

Following the receipt of validated data from the 2009 fourth quarter sample event, data obtained through October 2009 will be statistically evaluated to determine whether apparent increasing trends observed in the data are statistically significant and determine whether the contaminant plumes remain stable.

Surface Water: Low levels of 1,1-dichloroethane, cis-1,2-dichloroethene, trans-1,2-dichloroethane and vinyl chloride were detected in the April 2009 Pond North and Pond Intake samples collected from the Meadowbrook Golf Course irrigation pond. The concentration of vinyl chloride in both samples exceeded the MCL, but no direct contact screening criteria were exceeded.

**4) Summary of Changes in RFI**

None

**5) Summary of Contacts with Representatives of Local Community, Public Interest Groups, or State Government**

A teleconference was held with IDEM staff on May 5 to discuss remaining issues related to:

1. IDEM's April 20, 2009 review of Environmental Restrictive Covenants (ERCs) for Plant 9 and Lot 1, and
2. IDEM's September 24, 2008 response to GM comments related to the Final RFI report.

Based upon these discussions, no further changes in the RFI Final Report at this time were identified. GM provided responses to the IDEM comments in May 2009. Final ERCs for both parcels were submitted to IDEM in early June.

**6) Summary of Problems or Potential Problems**

None

**7) Actions Taken to Rectify Problems**

None

**8) Changes in Personnel**

None

**9) Projected Work for July to September 2009**

Projected work for July to September 2009 includes the following:

1. Conduct quarterly surface water monitoring event pursuant to the draft GMP in July 2009.
2. Initiate a subsurface investigation to further evaluate chromium-impacted perched groundwater associated with the Bay M26/27 excavation.

**10) Reports and Data**

Results from the April 2009 sampling event are presented in the attached Tables 1 and 2 and Figures 1 and 2.

An update of the RCRA Corrective Action activities completed at the GM MLK facility in Anderson, Indiana is presented in Project Fact Sheet 8 (July 2009) submitted with this Quarterly Technical Report (see Attachment).

## **ATTACHMENTS**

**ANALYTICAL RESULTS SUMMARY  
VOLATILE ORGANIC COMPOUND RESULTS  
GM MLK BOULEVARD FACILITY  
ANDERSON, INDIANA**

Sample Location:	MW 3	MW 12	MW 14	MW 28	MW 40	MW 41	MW 42	MW 49	MW 51	
Sample ID:	WG-043009-MS-008	WG-042909-MS-006	WG-042909-JB-005	WG-042909-MS-003	WG-043009-JB-011	WG-042809-JB-001	WG-042809-MS-001	WG-042909-MS-005	WG-042909-JB-007	
Sample Date:	4/30/2009	4/29/2009	4/29/2009	4/29/2009	4/30/2009	4/28/2009	4/28/2009	4/29/2009	4/29/2009	
Matrix_Type	WG-N	WG-N	WG-N	WG-N	WG-N	WG-N	WG-N	WG-N	WG-N	
Parameters:	Units									
<i>Volatile Organic Compounds</i>										
1,1,1-Trichloroethane	mg/L	1.7	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
1,1,2,2-Tetrachloroethane	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
1,1,2-Trichloroethane	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
1,1-Dichloroethane	mg/L	0.6 J	0.0032 J	0.12 J	0.005 U	0.69	0.084 J	0.17 J	0.0012 J	0.011 U
1,1-Dichloroethene	mg/L	0.24 J	0.0033 J	0.034 J	0.005 U	0.1 J	0.5 U	0.07 J	0.0063 U	0.011 U
1,2-Dichloroethane	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
1,2-Dichloropropane	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
2-Butanone (Methyl Ethyl Ketone)	mg/L	36 U	1.3 U	13 U	0.25 U	25 U	25 U	0.28 J	0.31 U	0.56 U
2-Hexanone	mg/L	36 U	1.3 U	13 U	0.25 U	25 U	25 U	25 U	0.31 U	0.56 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	mg/L	36 U	1.3 U	13 U	0.25 U	25 U	25 U	25 U	0.31 U	0.56 U
Acetone	mg/L	1.4 J	1.3 U	0.38 J	0.25 U	0.79 J	25 U	25 U	0.31 U	0.56 U
Benzene	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Bromodichloromethane	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Bromoform	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Bromomethane (Methyl Bromide)	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Carbon disulfide	mg/L	3.6 U	0.13 U	1.3 U	0.025 U	2.5 U	2.5 U	2.5 U	0.031 U	0.056 U
Carbon tetrachloride	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Chlorobenzene	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Chloroethane	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Chloroform (Trichloromethane)	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Chloromethane (Methyl Chloride)	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
cis-1,2-Dichloroethene	mg/L	12	0.49	6.1	0.005 U	-	10	9.3	0.1	0.0065 J
cis-1,3-Dichloropropene	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Dibromochloromethane	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Ethylbenzene	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
m&p-Xylene	mg/L	1.4 U	0.05 U	0.5 U	0.01 U	1 U	1 U	1 U	0.013 U	0.022 U
Methylene chloride	mg/L	3.6 U	0.13 U	1.3 U	0.025 U	2.5 U	2.5 U	2.5 U	0.031 U	0.056 U
o-Xylene	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Styrene	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Tetrachloroethene	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Toluene	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
trans-1,2-Dichloroethene	mg/L	0.13 J	0.0084 J	0.041 J	0.005 U	0.32 J	0.25 J	0.52	0.0034 J	0.011 U
trans-1,3-Dichloropropene	mg/L	0.71 U	0.025 U	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0063 U	0.011 U
Trichloroethene	mg/L	18	0.028	0.25 U	0.005 U	0.5 U	0.5 U	0.5 U	0.0013 J	0.19
Vinyl chloride	mg/L	0.39 J	0.025 U	0.44	0.1	2.1	0.4 J	0.21 J	0.045	0.011 U
Xylene (total)	mg/L	2.1 U	0.075 U	0.75 U	0.015 U	1.5 U	1.5 U	1.5 U	0.019 U	0.033 U

Notes:

J - Estimated concentration.

U - Not present at or above the associated value.

-- Not analyzed.

**ANALYTICAL RESULTS SUMMARY  
VOLATILE ORGANIC COMPOUND RESULTS  
GM MLK BOULEVARD FACILITY  
ANDERSON, INDIANA**

Sample Location:	MW 65	MW 66	MW 66	MW 68	MW 85	MW 31R	MW 79	MW-4	MW-4	
Sample ID:	WG-042809-MS-002	WG-042809-JB-002	WG-042809-JB-003	WG-042909-MS-004	WG-043009-MS-007	WG-042909-JB-004	WG-042909-JB-006	WG-043009-JB-009	WG-043009-JB-010	
Sample Date:	4/28/2009	4/28/2009	4/28/2009	4/29/2009	4/30/2009	4/29/2009	4/29/2009	4/30/2009	4/30/2009	
Matrix_Type	WG-N	WG-N	WG-FD	WG-N	WG-N	WG-N	WG-N	WG-N	WG-FD	
Parameters:	Units									
<i>Volatile Organic Compounds</i>										
1,1,1-Trichloroethane	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
1,1,2,2-Tetrachloroethane	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
1,1,2-Trichloroethane	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
1,1-Dichloroethane	mg/L	0.057	0.001 U	0.001 U	0.45 J	0.025 U	0.64	0.0069 J	0.39 J	0.39 J
1,1-Dichloroethene	mg/L	0.05 U	0.001 U	0.001 U	0.07 J	0.025 U	0.5 U	0.0052 J	0.5 U	0.046 J
1,2-Dichloroethane	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
1,2-Dichloropropane	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
2-Butanone (Methyl Ethyl Ketone)	mg/L	2.5 U	0.05 U	0.05 U	25 U	1.3 U	25 U	2.5 U	25 U	21 U
2-Hexanone	mg/L	2.5 U	0.05 U	0.05 U	25 U	1.3 U	25 U	2.5 U	25 U	21 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	mg/L	2.5 U	0.05 U	0.05 U	25 U	1.3 U	25 U	2.5 U	25 U	21 U
Acetone	mg/L	2.5 U	0.05 U	0.05 U	25 U	0.042 J	25 U	0.093 J	25 U	21 U
Benzene	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Bromodichloromethane	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Bromoform	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Bromomethane (Methyl Bromide)	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Carbon disulfide	mg/L	0.25 U	0.005 U	0.005 U	2.5 U	0.13 U	2.5 U	0.25 U	2.5 U	2.1 U
Carbon tetrachloride	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Chlorobenzene	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Chloroethane	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Chloroform (Trichloromethane)	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Chloromethane (Methyl Chloride)	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
cis-1,2-Dichloroethene	mg/L	0.97	0.001 U	0.001 U	11	0.025 U	11	1.1	7.5	7.8
cis-1,3-Dichloropropene	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Dibromochloromethane	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Ethylbenzene	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	1	0.05 U	0.5 U	0.42 U
m&p-Xylene	mg/L	0.1 U	0.002 U	0.002 U	1 U	0.05 U	2.9	0.1 U	1 U	0.83 U
Methylene chloride	mg/L	0.25 U	0.005 U	0.005 U	2.5 U	0.13 U	2.5 U	0.25 U	2.5 U	2.1 U
o-Xylene	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	1.3	0.05 U	0.5 U	0.42 U
Styrene	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Tetrachloroethene	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Toluene	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	5.8	0.05 U	0.5 U	0.42 U
trans-1,2-Dichloroethene	mg/L	0.038 J	0.001 U	0.001 U	0.39 J	0.025 U	0.072 J	0.052	0.39 J	0.39 J
trans-1,3-Dichloropropene	mg/L	0.05 U	0.001 U	0.001 U	0.5 U	0.025 U	0.5 U	0.05 U	0.5 U	0.42 U
Trichloroethene	mg/L	0.05 U	0.001 U	0.001 U	1.4	0.025 U	0.54	0.05 U	0.5 U	0.42 U
Vinyl chloride	mg/L	0.69	0.027	0.027	0.33 J	0.48	1.5	0.22	0.83	0.84
Xylene (total)	mg/L	0.15 U	0.003 U	0.003 U	1.5 U	0.075 U	4.5	0.15 U	1.5 U	1.3 U

Notes:

J - Estimated concentration.

U - Not present at or above the associated value.

-- Not analyzed.

TABLE 1

**ANALYTICAL RESULTS SUMMARY  
VOLATILE ORGANIC COMPOUND RESULTS  
GM MLK BOULEVARD FACILITY  
ANDERSON, INDIANA**

<i>Sample Location:</i>	<i>Pond Intake</i>	<i>Pond North</i>	<i>Equipment Blank</i>	<i>Equipment Blank</i>	<i>Trip Blank</i>	<i>Trip Blank</i>
<i>Sample ID:</i>	WS-043009-JB-013	WS-043009-JB-012	WQ-043009-MS-009	WQ-043009-JB-008	WQ-041009-CC-002	WQ-041009-CC-003
<i>Sample Date:</i>	4/30/2009	4/30/2009	4/29/2009	4/30/2009	4/10/2009	4/10/2009
<i>Matrix_Type</i>	WS-N	WS-N	WGQ-EB	WGQ-EB	WGQ-TB	WGQ-TB
<i>Parameters:</i>	<i>Units</i>					
<i>Volatile Organic Compounds</i>						
1,1,1-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	0.00019 J	0.00037 J	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl Ethyl Ketone)	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acetone	mg/L	0.05 U	0.05 U	0.0025 J	0.0022 J	0.0013 J
Benzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl Bromide)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl Chloride)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.00026 J
cis-1,2-Dichloroethene	mg/L	0.0034	0.0065	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m&p-Xylene	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Methylene chloride	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.00017 J
o-Xylene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Styrene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.00019 J	0.00037 J	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	0.0031	0.0039	0.001 U	0.001 U	0.001 U
Xylene (total)	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U

Notes:

J - Estimated concentration.

U - Not present at or above the associated value.

-- Not analyzed.

**ANALYTICAL RESULTS SUMMARY  
GENERAL CHEMISTRY AND MNA PARAMETER RESULTS  
GM MLK BOULEVARD FACILITY  
ANDERSON, INDIANA**

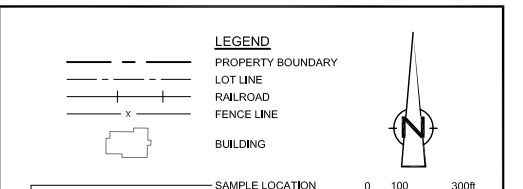
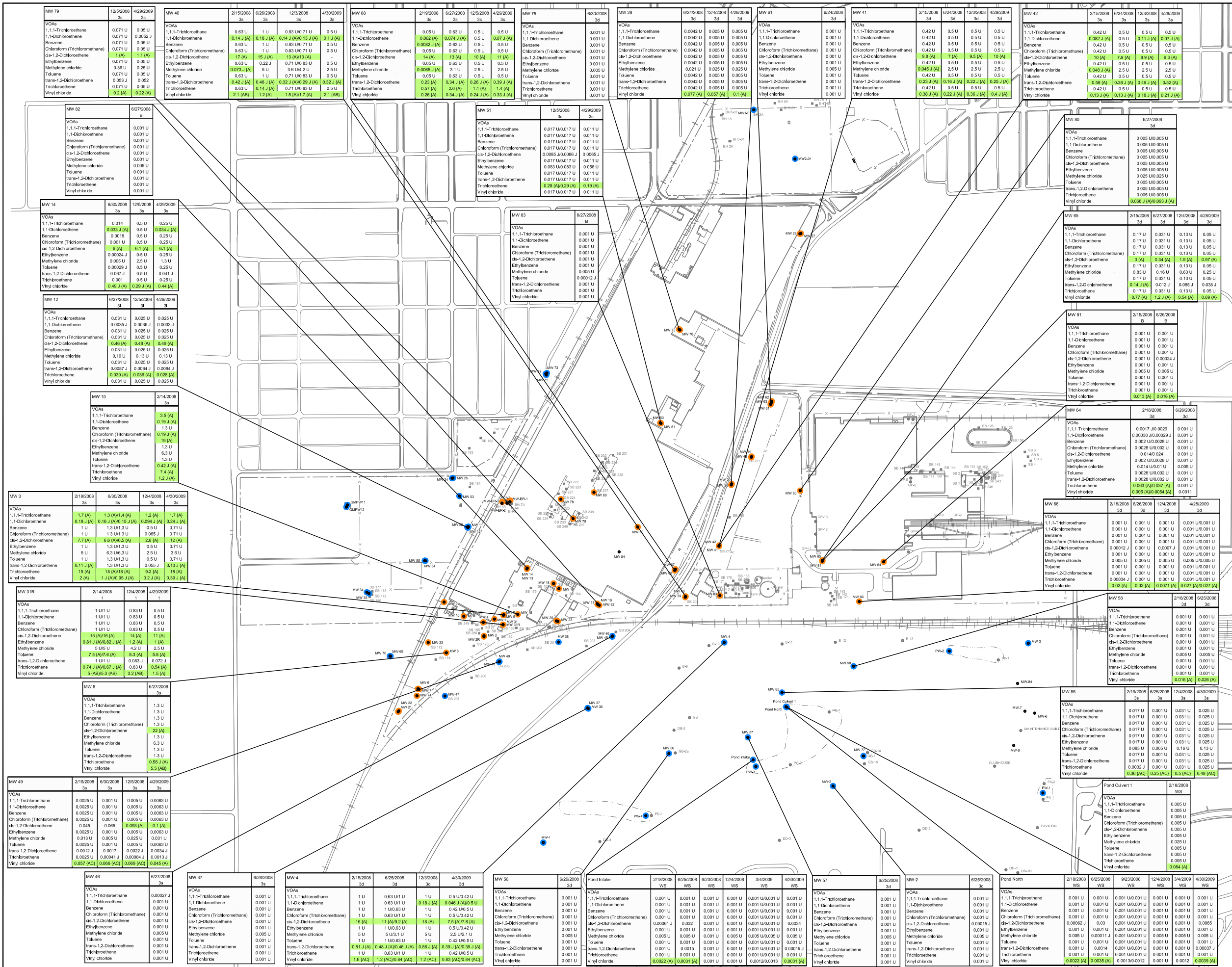
<i>Sample Location:</i>		<i>MW 40</i>	<i>MW-4</i>	<i>MW-4</i>	<i>Equipment Blank</i>
<i>Sample ID:</i>		<i>WG-043009-JB-011</i>	<i>WG-043009-JB-009</i>	<i>WG-043009-JB-010</i>	<i>WQ-043009-JB-008</i>
<i>Sample Date:</i>		<i>4/30/2009</i>	<i>4/30/2009</i>	<i>4/30/2009</i>	<i>4/30/2009</i>
<i>Matrix_Type</i>		<i>WG-N</i>	<i>WG-N</i>	<i>WG-FD</i>	<i>WGQ-EB</i>
<i>Parameters:</i>	<i>Units</i>				
<i>Metals</i>					
Calcium	mg/L	138 J	146	147	0.152 J
Iron	mg/L	2.79 J	1.69	1.58	0.1 U
Magnesium	mg/L	40.1 J	39.6	40.1	0.0299 J
Manganese (Dissolved)	mg/L	0.111 J	0.215 J	0.211 J	0.01 U
Potassium	mg/L	5.31 J	2.56 J	2.63 J	5 U
Sodium	mg/L	48.4 J	42.6	43.3	0.61 J
<i>Gas</i>					
Ethane	mg/L	0.0019	0.0051	0.0052	0.001 U
Ethene	mg/L	0.019	0.037	0.035	0.001 U
Methane	mg/L	0.057	0.1	0.097	0.001 U
<i>General Chemistry</i>					
Alkalinity, Bicarbonate	mg/L	358	378	370	10.0 U
Alkalinity, Carbonate	mg/L	10.0 U	10.0 U	10.0 U	10.0 U
Alkalinity, Total (as CaCO <sub>3</sub> )	mg/L	361	379	372	10.0 U
Chloride	mg/L	87 J	66 J	67 J	5.2 J
Dissolved Organic Carbon (DOC)	mg/L	2.7 J	5.0 U	2.5 J	5.0 U
Hardness	mg/L	513	528	533 J	5.00 U
Hardness, Carbonate	mg/L	361	379	372 J	5.00 U
Nitrate (as N)	mg/L	0.05 U	0.05 UJ	0.60 J	0.05 U
Nitrite (as N)	mg/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U
Sulfate	mg/L	80	84	85	25 U
Sulfide	mg/L	1.00 U	1.00 U	1.00 U	0.40 J
Total Organic Carbon (TOC)	mg/L	5.0 U	5.0 U	5.0 U	1.2 J
<i>Field Parameters</i>					
Ferrous Iron	mg/L	-	-	-	-
ORP, Field	millivolt	-83	-64	-	-
pH Field	s.u.	7.14	7.04	-	-

## Notes:

J - Estimated concentration.

U - Not present at or above the associated value.

UJ - Estimated reporting limit.



**SAMPLE LOCATION**

**SAMPLE DATE**

**GEOLOGIC UNIT**

WS - SURFACE WATER  
 1 - UNIT 1 PERCHED GROUNDWATER WELL  
 3S - UNIT 3 SHALLOW GROUNDWATER IN UPPERMOST AQUIFER  
 3I - UNIT 3 INTERMEDIATE GROUNDWATER IN UPPERMOST AQUIFER  
 3D - UNIT 3 DEEP GROUNDWATER IN UPPERMOST AQUIFER  
 B - BEDROCK GROUNDWATER IN BEDROCK AQUIFER

**CONCENTRATION (mg/L)**

**PARAMETER**

**EXCEEDANCE**

● SAMPLE RESULTS COMPARED TO CRITERIA A, B, E, AND F  
 ● SAMPLE RESULTS COMPARED TO CRITERIA A, B, C, AND D

**Chemical name**

	A	B	C	D	E	F
1,1,1-Trichloroethane	2.00E-01	1.33E+03	7.47E+02	1.33E+04	3.14E+04	1.88E+07
1,1-Dichloroethane	7.00E-03	1.10E+02	1.69E+02	8.90E+02	2.10E+03	1.42E+05
Benzene	6.00E-03	4.50E+00	1.22E+00	3.36E+01	9.02E+01	5.00E+04
Chloroform (Trichloromethane)	6.00E-02	2.12E+00	4.85E+01	1.53E+01	3.37E+01	1.09E+06
dis-1,2-Dichloroethane	7.00E-02	2.12E+01	4.70E+01	4.78E+02	1.65E+03	1.64E+07
Ethylbenzene	7.00E-01	4.19E+02	8.85E+01	9.83E+03	2.28E+04	6.79E+06
Methylene chloride	5.00E-03	8.31E+01	2.44E+01	1.10E+03	2.76E+03	2.76E+06
Toluene	1.00E+00	2.27E+02	2.79E+02	4.17E+03	9.47E+03	3.22E+07
trans-1,2-Dichloroethane	1.00E-01	4.13E+01	7.65E+01	5.26E+02	1.22E+03	9.43E+06
Trichloroethene	5.00E-03	2.51E+01	4.22E+00	1.09E+02	3.00E+02	6.70E+06
Vinyl chloride	2.00E-03	1.95E+00	4.63E+02	5.97E+01	1.66E+02	1.41E+06

A Drinking Water Criteria  
 B Site-Specific Construction Worker Groundwater Contact Criteria  
 C Site-Specific Residential Non-Potable GW Use Criteria  
 D Site-Specific Residential GW Volatilization to Indoor Air Criteria  
 E Site-Specific Industrial GW Volatilization to Indoor Air Criteria  
 F Site-Specific Occupational GW Volatilization to Indoor Air Criteria Based on Occupational Limits

- NOTES:**
- Parameters that do not appear in the databox for a particular sample were not analyzed.
  - Sample results rounded to three decimal places.
  - Screening criteria and sample results are compared to two significant digits. Results equal to screening criteria are not highlighted as exceedances.
  - MW 51, MW 76, and MW 79 were not sampled during the June 2008 event.
  - The concentrations of chlorobenzene (0.15 mg/L), tetrachloroethene (0.43 mg/L), and styrene (0.14 mg/L) in the June 2008 sample from monitoring well MW-40 exceed the drinking water criteria. However, these VOCs were not detected at MW-40 in December 2008, and have been either not detected (chlorobenzene and styrene) or detected sporadically (tetrachloroethene) at other wells in the groundwater monitoring network. Because these VOCs have been detected so sporadically, they have essentially no spatial or temporal distribution, and as such, they have not been added to the databoxes.

**SCALE VERIFICATION**

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

**GENERAL MOTORS CORPORATION  
 ANDERSON, INDIANA**

**PENLETON/MLK AVENUE SITE**

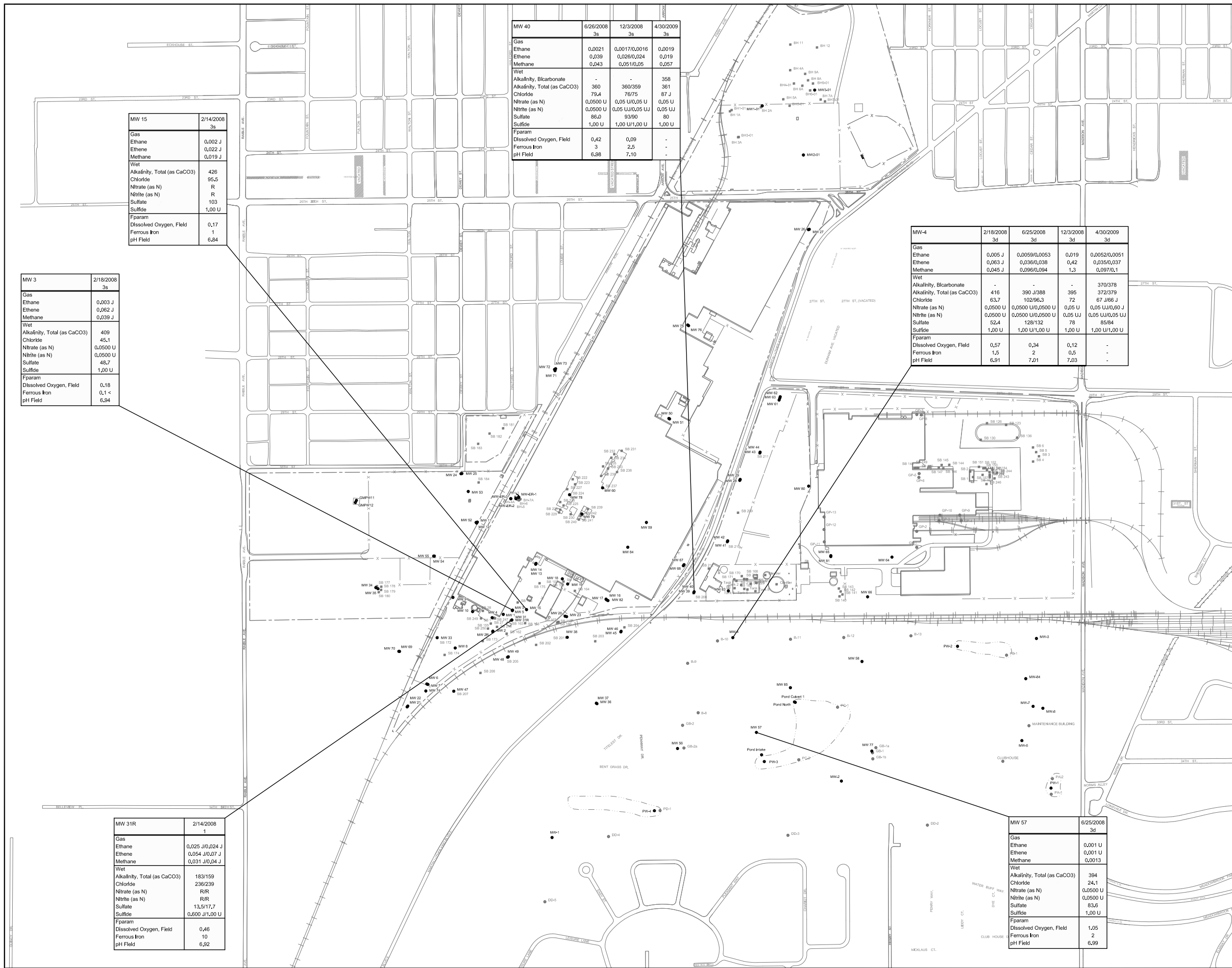
**GROUNDWATER/SURFACE WATER RESULTS  
 VOCs - JANUARY 2008 - JUNE 2009**

**CONESTOGA-ROVERS & ASSOCIATES**

Source Reference:

Project Manager: S. RICHARDSON  
 Reviewed By: S. RICHARDSON  
 Date: FEBRUARY 2009

Scale: 1"=300'  
 Project No: 017302-02  
 Report No: PRES020  
 Drawing No: figure 1



MW 15	2/14/2008
Gas	3s
Ethane	0,002 J
Ethene	0,022 J
Methane	0,019 J
Wet	
Alkalinity, Total (as CaCO3)	426
Chloride	95,5
Nitrate (as N)	R
Nitrite (as N)	R
Sulfate	103
Sulfide	1,00 U
Fparam	
Dissolved Oxygen, Field	0,17
Ferrous Iron	1
pH Field	6,84

MW 40	6/25/2008	12/3/2008	4/30/2009
Gas	3s	3s	3s
Ethane	0,0021	0,0017/0,0016	0,0019
Ethene	0,039	0,026/0,024	0,019
Methane	0,043	0,051/0,05	0,057
Wet			
Alkalinity, Bicarbonate	-	360/359	361
Alkalinity, Total (as CaCO3)	360	79,4	87 J
Chloride	79,4	70,75	87 J
Nitrate (as N)	0,0500 U	0,05 U/0,05 U	0,05 U
Nitrite (as N)	0,0500 U	0,05 U/0,05 U	0,05 U
Sulfate	86,0	93,90	80
Sulfide	1,00 U	1,00 U/1,00 U	1,00 U
Fparam			
Dissolved Oxygen, Field	0,42	0,09	-
Ferrous Iron	3	2,5	-
pH Field	6,98	7,10	-

MW-4	2/18/2008	6/25/2008	12/3/2008	4/30/2009
Gas	3d	3d	3d	3d
Ethane	0,005 J	0,0059/0,0053	0,019	0,0052/0,0051
Ethene	0,063 J	0,036/0,038	0,42	0,035/0,037
Methane	0,045 J	0,096/0,094	1,3	0,097/0,1
Wet				
Alkalinity, Bicarbonate	-	-	-	370/378
Alkalinity, Total (as CaCO3)	416	390 J/388	395	372/379
Chloride	63,7	102/96,3	72	67 J/66 J
Nitrate (as N)	0,0500 U	0,0500 U/0,0500 U	0,05 U	0,05 U/0,05 U
Nitrite (as N)	0,0500 U	0,0500 U/0,0500 U	0,05 U	0,05 U/0,05 U
Sulfate	52,4	128/132	76	85/84
Sulfide	1,00 U	1,00 U/1,00 U	1,00 U	1,00 U/1,00 U
Fparam				
Dissolved Oxygen, Field	0,57	0,34	0,12	-
Ferrous Iron	1,5	2	0,5	-
pH Field	6,91	7,01	7,03	-

MW 3	2/18/2008
Gas	3s
Ethane	0,003 J
Ethene	0,062 J
Methane	0,039 J
Wet	
Alkalinity, Total (as CaCO3)	409
Chloride	45,1
Nitrate (as N)	0,0500 U
Nitrite (as N)	0,0500 U
Sulfate	48,7
Sulfide	1,00 U
Fparam	
Dissolved Oxygen, Field	0,18
Ferrous Iron	0,1 <
pH Field	6,94

MW 31R	2/14/2008
Gas	1
Ethane	0,025 J/0,024 J
Ethene	0,054 J/0,07 J
Methane	0,031 J/0,04 J
Wet	
Alkalinity, Total (as CaCO3)	183/159
Chloride	236/239
Nitrate (as N)	R/R
Nitrite (as N)	R/R
Sulfate	13,5/17,7
Sulfide	0,600 J/1,00 U
Fparam	
Dissolved Oxygen, Field	0,46
Ferrous Iron	10
pH Field	6,92

MW 57	6/25/2008
Gas	3d
Ethane	0,001 U
Ethene	0,001 U
Methane	0,0013
Wet	
Alkalinity, Total (as CaCO3)	394
Chloride	24,4
Nitrate (as N)	0,0500 U
Nitrite (as N)	0,0500 U
Sulfate	83,6
Sulfide	1,00 U
Fparam	
Dissolved Oxygen, Field	1,05
Ferrous Iron	2
pH Field	6,99

**LEGEND**

- PROPERTY BOUNDARY
- LOT LINE
- RAILROAD
- FENCE LINE
- BUILDING

**SAMPLE LOCATION**

MW 40	1/12/2005	3s
Gas	-	WS - SURFACE WATER
Ethane	-	1 - UNIT 1, PERCHED GROUNDWATER IN FILL
Ethene	-	3S - UNIT 3, SHALLOW GROUNDWATER IN UPPERMOST AQUIFER
Methane	-	3I - UNIT 3, INTERMEDIATE GROUNDWATER IN UPPERMOST AQUIFER
Wet	-	3D - UNIT 3, DEEP GROUNDWATER IN UPPERMOST AQUIFER
Alkalinity, Bicarbonate	350	B - BEDROCK GROUNDWATER IN BEDROCK AQUIFER
Alkalinity, Total (as CaCO3)	-	
Chloride	-	
Nitrate (as N)	0,05 U	
Nitrite (as N)	0,05 U	
Sulfate	133	
Sulfide	1 U	
Fparam	-	
Dissolved Oxygen, Field	0,17	
Ferrous Iron	3	
pH Field	7,6	

**CONCENTRATION (mg/L)**

**PARAMETER**

**NOTES:**

- Results are shown in mg/L, except for pH (Field) (s.u.), and ORP (millivolts).
- Parameters that do not appear in the databox for a particular sample were not analyzed.

**SCALE VERIFICATION**

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

**GENERAL MOTORS CORPORATION  
ANDERSON, INDIANA**

**PENDLETON/MLK AVENUE SITE**

**GROUNDWATER RESULTS**

**MNA PARAMETERS - OCT. 2005 - JAN. 2009**



Source Reference:

Project Manager: S. RICHARDSON	Reviewed By: S. RICHARDSON	Date: FEBRUARY 2009
Scale: 1"=300'	Project No: 017302-02	Report No: PRES020
		Drawing No: 2

## RCRA CORRECTIVE ACTION GENERAL MOTORS CORPORATION 2915 Dr. Martin Luther King Jr. Boulevard (Formerly Pendleton Avenue) ANDERSON, INDIAN

### INTRODUCTION

General Motors Corporation (GM) has prepared this Project Fact Sheet to update the local community about environmental activities being conducted at the facility located at 2915 Dr. Martin Luther King Jr. Boulevard (formerly Pendleton Avenue), Anderson, Indiana (Site). These activities are conducted under the oversight of the Indiana Department of Environmental Management (IDEM) and in accordance with an Agreed Order issued for the site.

The Corrective Action process includes a RCRA Facility Investigation (RFI) of the soil and groundwater conditions at the Site. Based upon an evaluation of the results obtained during these investigations, appropriate corrective measures will be proposed and implemented.

### SITE BACKGROUND

The Site is located on the southwest side of Anderson in Madison County, Indiana. Formerly, the facility comprised approximately 3,000,000 square feet of manufacturing area situated on 234 acres. GM operations at the Site began in 1929. Additional plant buildings were constructed and the plants were expanded several times between 1937 and 1989.

Dr. Martin Luther King Jr. Boulevard (formerly Pendleton Avenue) divides the Site in a north-south direction.

Portions of the Site have been sold to other companies and are no longer owned by GM. Demolition of the main plant is complete and restoration activities are nearing completion.



The following key documents have been submitted to the U.S. EPA and the IDEM and are available for review in the public repository:

- RCRA Facility Investigation Work Plan, July 2, 1997 amended October 14, 1997
- Soil Gas Data Report and Proposed Investigation Strategy, January 26, 1998
- RCRA Facility Investigation Stage I Report, July 2001
- RCRA Facility Investigation Work Plan Amendment for North Parking Lot/ Vacant Land, January 30, 2002
- RCRA Facility Investigation Work Plan Amendment for Metal Plating and Recovery Areas, August 16, 2002
- RCRA Facility Investigation Work Plan Amendment for VOC Plume Delineation, August 5, 2004
- Interim Measures Work Plan for South Court Area, March 21, 2005
- RCRA Facility Investigation Stage II Data Report, March 30, 2005
- RCRA Facility Investigation Report, August 12, 2005
- Documentation of Environmental Indicators Determination, September 20, 2005
- Interim Site-Wide Groundwater Monitoring Plan, September 20, 2005
- Interim Measure Work Plan - Production Well Abandonment, July 27, 2006
- 2006 Annual Groundwater Monitoring Report, January 31, 2007
- Response to IDEM's Comments on Final RFI Report, April 5, 2007
- Revised Final RFI Report and Response to IDEM's Comments, September 27, 2007
- Production Well Abandonment Memo, November 16, 2007
- 2007 Annual Groundwater Monitoring Report, January 31, 2008
- Corrective Measures Plan, March 31, 2008
- Site-Wide Groundwater Monitoring Plan, March 31, 2008
- Notification to IDEM of a new potential contaminant source area, September 5, 2008
- Progress Reports covering February 1998 through January 2009
- 2008 Annual Groundwater Monitoring Report, February 2009

## RCRA CORRECTIVE ACTION

GM is currently conducting Corrective Action activities at the Site pursuant to an approved plan. Corrective Action activities are required for all facilities that applied for a permit to store hazardous waste and include an evaluation of whether plant waste management operations have impacted the environment. The program includes a RCRA Facility Investigation (RFI) that is designed to identify and address any significant risks to human health or the environment resulting from the release of hazardous waste or hazardous constituents to environmental media such as soil or groundwater. The scope of the RFI and required cleanup work has been and will continue to be reviewed with IDEM. The activities will be conducted according to standards that are protective of human health and the environment.

The Corrective Action process uses Environmental Indicators (EIs) to evaluate and report on current site conditions related to potential current human exposure and potential groundwater migration. Under the RCRA program, U.S. EPA's top priority is to make sure that these two Environmental Indicators are satisfied at a given site. GM has submitted reports to IDEM for the two Environmental Indicators to demonstrate that current human exposure and migration of contaminated groundwater are under control. Groundwater monitoring to verify plume stability is ongoing.

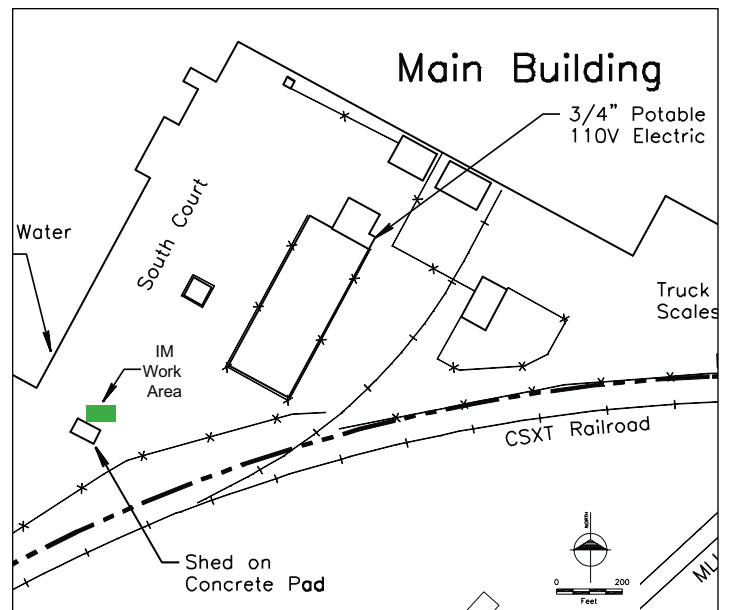
## RCRA FACILITY INVESTIGATION

GM has completed the RFI at the Site. The purpose of an RFI is to investigate any areas of the Site that may need further action and to determine what additional steps might be appropriate. The results of these investigations were documented in reports that have been submitted to IDEM and copies are available for review in the information repository at the local library. GM has provided responses to IDEM comments on the final RFI Report, the latest of which were provided to IDEM in May 2009.

## COMPLETED INTERIM MEASURES

Interim Measures (IM) were conducted in the South Court Area in July 2005 to address concentrations of trichloroethene (TCE) in a small area of soil and shallow groundwater that were significantly higher than in the surrounding area. Soil sampling conducted in December 2004 identified that the TCE concentrations were highest in an area of approximately 20 x 35-feet.

Soil was excavated from the 20 x 35-foot area, to the depth of the perched water table at approximately 8 feet below ground. The soil was temporarily staged in rolloff boxes during excavation and then disposed of off-Site. Hydrogen-Releasing Compound® (HRC) was mixed into soil at the bottom of the excavation, to enhance degradation of TCE in groundwater. Following placement of the HRC®, the excavation was backfilled and the pavement replaced. TCE concentrations in groundwater have decreased since the IM was conducted.



Interim measures were also conducted in 2007 to plug and abandon five former groundwater production wells at the facility. This work was performed according to Indiana Department of Natural Resources guidelines.

GM continues to complete interim site-wide groundwater monitoring. A Corrective Measures Proposal and a site-wide Groundwater Monitoring Plan were submitted in March 2008.

## UPCOMING ACTIVITIES

GM has prepared environmental restrictive covenants for various parcels of the property for review and approval by IDEM. Groundwater monitoring and reporting is ongoing.

## PUBLIC PARTICIPATION

An information repository has been established where current project related documents are available for public review. The information repository is located at:

Anderson Public Library

111 East 12th Street

Anderson, IN 46016

Tel: (765) 641-2450

Project Fact Sheets will be issued periodically during the implementation of the Corrective Action program to keep the community informed of ongoing activities at the Site.

## CONTACT INFORMATION

### GM COMMUNICATIONS

Toll free: (888) 436-6687

### IDEM

Robert Marshall

Tel: (317) 232-4534

Toll free: (800) 451-6027