



RCRA FACILITY INVESTIGATION (RFI) WORK PLAN ADDENDUM NO. 2

**GM POWERTRAIN BEDFORD FACILITY
105 GM DRIVE
BEDFORD, INDIANA**

EPA ID# IND006036099

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LIST OF ACRONYMS

Agreement	RCRA Corrective Action Agreement
AOI	Area of Interest
CRA	Conestoga-Rovers and Associates
Facility	GM Powertrain Bedford Plant
GM	General Motors Corporation
NAPL	Non-Aqueous Phase Liquid
PCB	polychlorinated biphenyls
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SVOC	semi-volatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TOC	Total Organic Carbon
TSS	Total Suspended Solids
U.S. EPA	United States Environmental Protection Agency
VOC	volatile organic compound
QAPP	Quality Assurance Project Plan

1.0 INTRODUCTION

This document presents an Addendum No.2 to the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan (RFI Work Plan) for the General Motors Corporation (GM) Powertrain Bedford Plant (Facility) located in Bedford, Indiana (U.S. EPA ID# IND006036099).

1.1 GENERAL

The Facility is located at 105 GM Drive, Bedford, Lawrence County, Indiana, 47421. The Site location is presented on Figure 1.1. The Facility produces aluminum casting products, such as transmission cases, pistons, and engine blocks. Major aluminum production processes include die casting and permanent molding. The Bedford Facility has been operating as an aluminum foundry since 1942, with major facility modifications completed in 1950, 1953, 1966, 1971, 1974, 1977, 1979, and 1980.

The Facility, located on 152.5 acres, contains approximately 915,000 square feet of floor space and employs approximately 1,200 people. The Site plan is presented on Figure 1.2.

1.2 RFI APPROACH

GM signed a Performance-Based RCRA Corrective Action Agreement (Agreement) with the United States Environmental Protection Agency (U.S. EPA) for the Bedford Facility on March 20, 2001, as amended on August 31, 2002. The signed Agreement states that GM will work with the U.S. EPA to identify and define the nature and extent of releases of hazardous waste and /or hazardous constituents at or from the Bedford Facility.

1.3 PURPOSE

On October 29, 2001, GM submitted a RFI Work Plan (CRA, October 29, 2001) for completing the first phase of investigative activities within the Facility property. The RFI Work Plan implementation was initiated on December 17, 2001, and this phase of investigative activities, as described in the original Work Plan, are currently nearing completion.

The first RFI Work Plan Addendum (Addendum No. 1) described additional proposed on-Site and off-Site investigative activities based on preliminary RFI results (CRA,

November 18, 2002). The purpose of the proposed additional investigative activities were to further define the extent of hazardous constituents in soil at the Facility, to characterize non-aqueous phase liquid (NAPL) observed at and near the Facility and its transport pathways, and to obtain additional information on the groundwater-surface water system at and near the Facility. Portions of this work have already been initiated (laboratory work). Additional field investigative activities to be completed under the Addendum No. 1 are currently being scheduled and will be implemented once property access issues and weather permits.

The purpose of this RFI Work Plan Addendum (Addendum No. 2) is to present additional investigative activities at the Former North Disposal Area, identified as Area of Interest (AOI) 4 in the Current Conditions Report (CRA, May 25, 2001). The results of the scope of work presented herein are intended to provide additional data to support interim measures and a final remedy at AOI 4. The following describes this scope of work.

1.4 CURRENT CONDITIONS AT AOI 4

During implementation of the RCRA Facility Investigation Work plan (RFI Work Plan) (CRA, October 29, 2001), ten soil borings were completed through the Former North Disposal Area (AOI 4), including the installation of two bedrock monitoring wells (shallow and multi-level) and one overburden monitoring well (Figure 2.3 for locations).

Soil borings (B-X148Y233, B-X169Y248, B-X187Y217, B-X192Y234, B-X193Y252, B-X219Y249, and B-X243Y257) and one monitoring well nest (MW-X143Y245S and MW-X143Y245D) were advanced within the Former North Disposal Area. Two of these soil borings and the monitoring well nest are also included in AOI 15. One overburden well (TMW-X193Y252) was also installed due to the presence of groundwater within the overburden materials. In addition to the soil borings, two surface water samples and one sediment sample were collected from a spring located at the base of the landfill at its northern extent. Soil boring logs are included as Appendix A.

The subsurface conditions encountered within this AOI included approximately 2 to 31 feet of fill materials (gray to black fine-grained, poorly graded sand, with inclusion of gravel, bricks, metal, wood, and plastic). This fill material is overlain with 3 to 6 feet of clay and topsoil, and is underlain in places by a relatively thin layer of native clay. The native clay directly overlies the limestone bedrock (St. Louis Formation and Salem Formation) in some locations. At other locations, it appears that the fill materials directly overlie the limestone bedrock. Water saturation was encountered at one

location at a low point in the bedrock surface where the native clay was absent. A two-inch PVC well screen and riser were installed at this location.

Seventeen soil samples (including two duplicates) were collected and analyzed for Target Compound List (TCL) for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and Target Analyte List (TAL), minus earth metals from various depths throughout the Former North Disposal Area. Table 1.1 presents the results of the laboratory analysis for all samples collected at AOI 4.

Two surface water samples were collected from the spring located along the northern extent of the Former North Disposal Area and analyzed for TCL VOCs, SVOCs, PCBs (total and dissolved), TAL (minus the earth metals), ammonia, Total Dissolved Solids (TDS), Total Suspended Solids (TSS), and Total Kjeldahl Nitrogen (TKN). One sediment sample was collected and analyzed for TOC VOCs, SVOCs, PCBs, TAL (minus the earth metals), and Total Organic Carbon (TOC). Table 1.2 presents the analytical results for the collected surface water samples and Table 1.3 presents the analytical results for the collected sediment sample.

2.0 SCOPE OF WORK

2.1 GEOTECHNICAL EVALUATION

A geotechnical evaluation of the Former North Disposal Area was proposed to evaluate slope stability for the potential placement of additional fill materials in this area. Secondly, this evaluation will aid in the evaluation of the slopes for use in determining an interim or final remedy, regardless of the potential placement of additional fill materials.

The geotechnical evaluation consisted of 11 borings (refer to Figure 2.1) conducted throughout AOI 4 utilizing cone penetrometer testing (CPT) equipment, slope stability modeling, sampling of materials during upcoming test pitting activities, and a summary memorandum. At each CPT location, data collected included:

- thickness of fill materials;
- in situ density;
- unit weights;
- friction angle; and
- cohesion.

In addition to the CPT activities, additional samples will be obtained during completion of test pits. The test pit locations were based on the results of the surface geophysical survey completed in 2002 (Proposed Test Pit Investigation Work Plan, in progress). During implementation of the test pits, CRA proposes to collect two samples each of the foundry sand/fill material and the underlying native clay, if possible. These samples will be sent to Schleede-Hampton Associates, Inc. for the following analyses:

Foundry sand:

- moisture content, as received: ASTM D-2216;
- grain size distribution: ASTM D-422;
- remolded direct shear: ASTM D-3080; and
- standard proctor density: ASTM D-698.

Native clay:

- moisture content, as received: ASTM D-2216;
- Atterberg limits: ASTM D-4318;
- grain size distribution: ASTM D-422
- bulk density: ASTM D-2937 (modified for block samples); and
- unconfined compressive strength: ASTM D-2166, or by pocket penetrometer.

Following completion of the above-described geotechnical field investigation activities, CRA will perform slope stability modeling of the existing disposal area under current conditions, and the potential impact of placement of additional fill materials.

The slope stability modeling will be conducted using state of the art software, Slope / W (Version 5) limit equilibrium software, using the Bishop method of slices. The software will be used to evaluate the potential for movements of deep or shallow masses of soil over hypothetical failure surfaces. The software will provide estimates of the factor of safety against slope stability failures, where a factor of safety greater than 1.0 represents stable conditions.

A summary technical memorandum will be prepared which will provide the modeling results, and recommendations with respect to slope stability issues.

2.2 BEDROCK CORING/HYDRAULIC TESTING

In order to evaluate the existing bedrock conditions beneath the Former North Disposal Area, CRA completed two bedrock borings (see Figure 2.2 for locations). Each boring was completed at an approximate angle of 30 degrees from vertical in order to increase the opportunity to identify vertical and horizontal fractures and solution features.

The overburden at each boring location was sampled in accordance with the procedures and protocols identified in the RFI Work Plan. A surface casing (4-inch diameter steel) was set and grouted into place approximately two feet into the bedrock surface in order to prevent potential surface and subsurface liquids to vertically migrate down the borehole.

Once the grout had cured, continuous coring of the bedrock was completed utilizing a HQ wireline coring apparatus, in accordance with the procedures and protocols

identified in the RFI Work Plan. Coring continued to the presence of the underlying shale (Edwardsville Formation), or until a significant horizontal, or vertical, fracture was encountered. A significant horizontal, or vertical, fracture was determined upon visual inspection concluding the presence of solution-enhanced features in the recovered core, or very poor rock quality indexes observed indicating a high density of fractures. When such features were encountered, the borehole was terminated upon reaching the next competent bedrock interval.

Upon completion of each bedrock boring, straddle-packer testing were completed along the entire run of bedrock core, overlapping each interval by approximately 1 foot. Straddle-packer tests consisted of zones approximately ten feet in length and each test was completed under three pressures, consisting of three tests per pressure increment. Maximum pressure did not exceed the hydraulic fracture pressure calculated for the top of each test interval. The results of the straddle-packer test will be analyzed using the method of Hvorslev (1951).

Upon completion of each bedrock boring and straddle-packer testing, the boreholes were grouted via tremie pipe with a cement/bentonite mixture (up to 5% bentonite by weight). The outer casing was cut-off approximately 2 feet below grade and left in place.

2.3 LABORATORY ANALYSIS

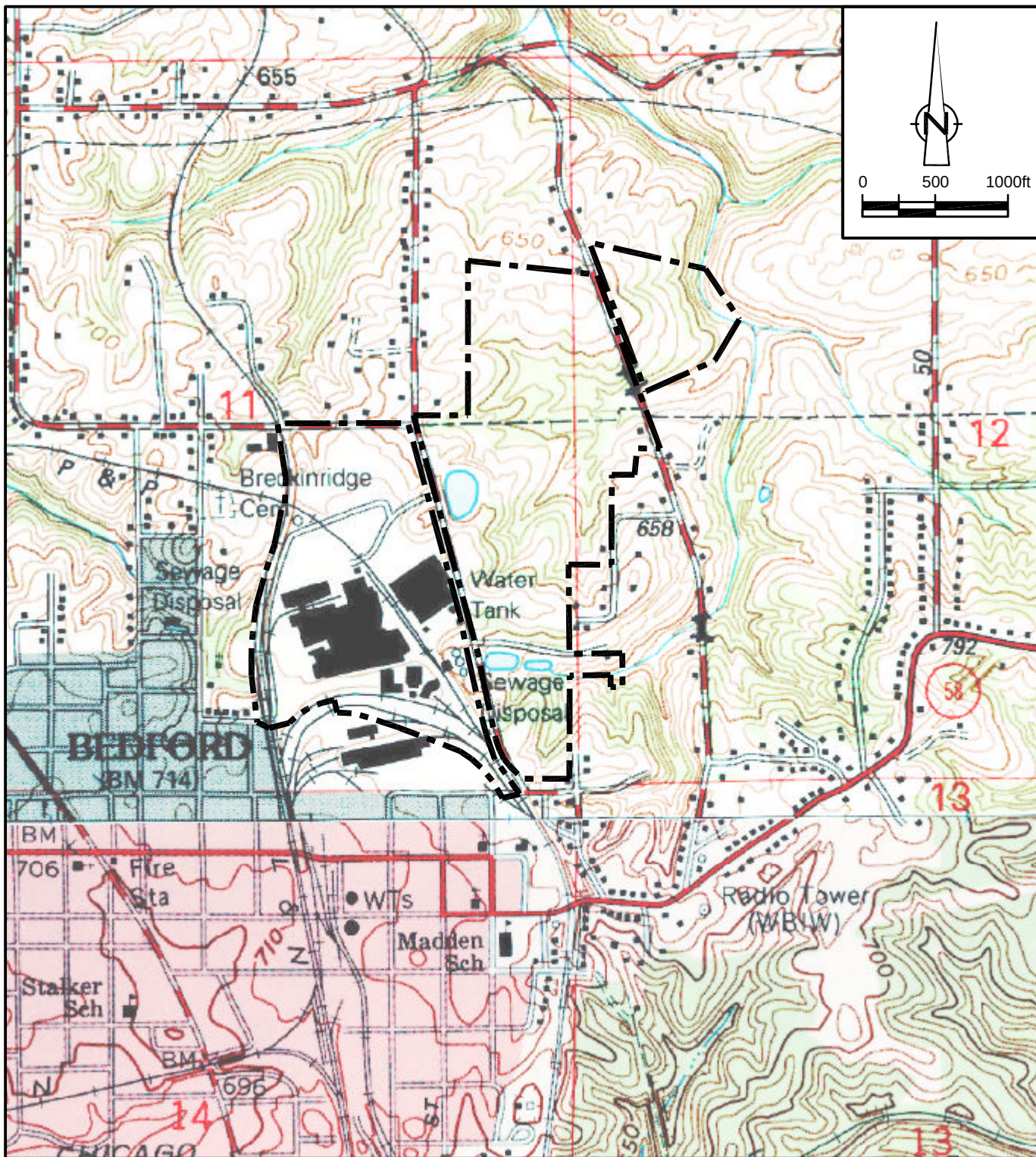
All soil samples collected from the overburden during drilling for the bedrock borings were submitted to Severn Trent Analytical Laboratories (STL) in North Canton, Ohio for analysis of TCL VOCs, SVOCs, PCBs, TAL (minus the earth metals), and total organic carbon (TOC). All sampling procedures and protocols followed those described in the RFI Work Plan. An addendum to the Quality Assurance Project Plan (QAPP) will include the addition of these samples.

Geotechnical samples collected during the drilling, as described above, were submitted to Schleede-Hampton Associates, Inc. in Birmingham, Michigan. Additional samples will be sent during test pitting activities.

3.0 REPORTING AND SCHEDULE

Upon completion of all field activities and upon receipt of all final, validated analytical data, a Technical Memorandum (TM) will be prepared describing the activities and results of the completed work.

The fieldwork, as described above, will be completed during the second calendar quarter 2003. Once all work activities are complete, CRA will prepare the TM for this scope of work and will submit it to U.S. EPA upon completion.



BASE SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLES;
 BARTLETTSVILLE, INDIANA 1994
 BEDFORD EAST, INDIANA 1978
 BEDFORD WEST, INDIANA 1993
 OOLITIC, INDIANA 1987

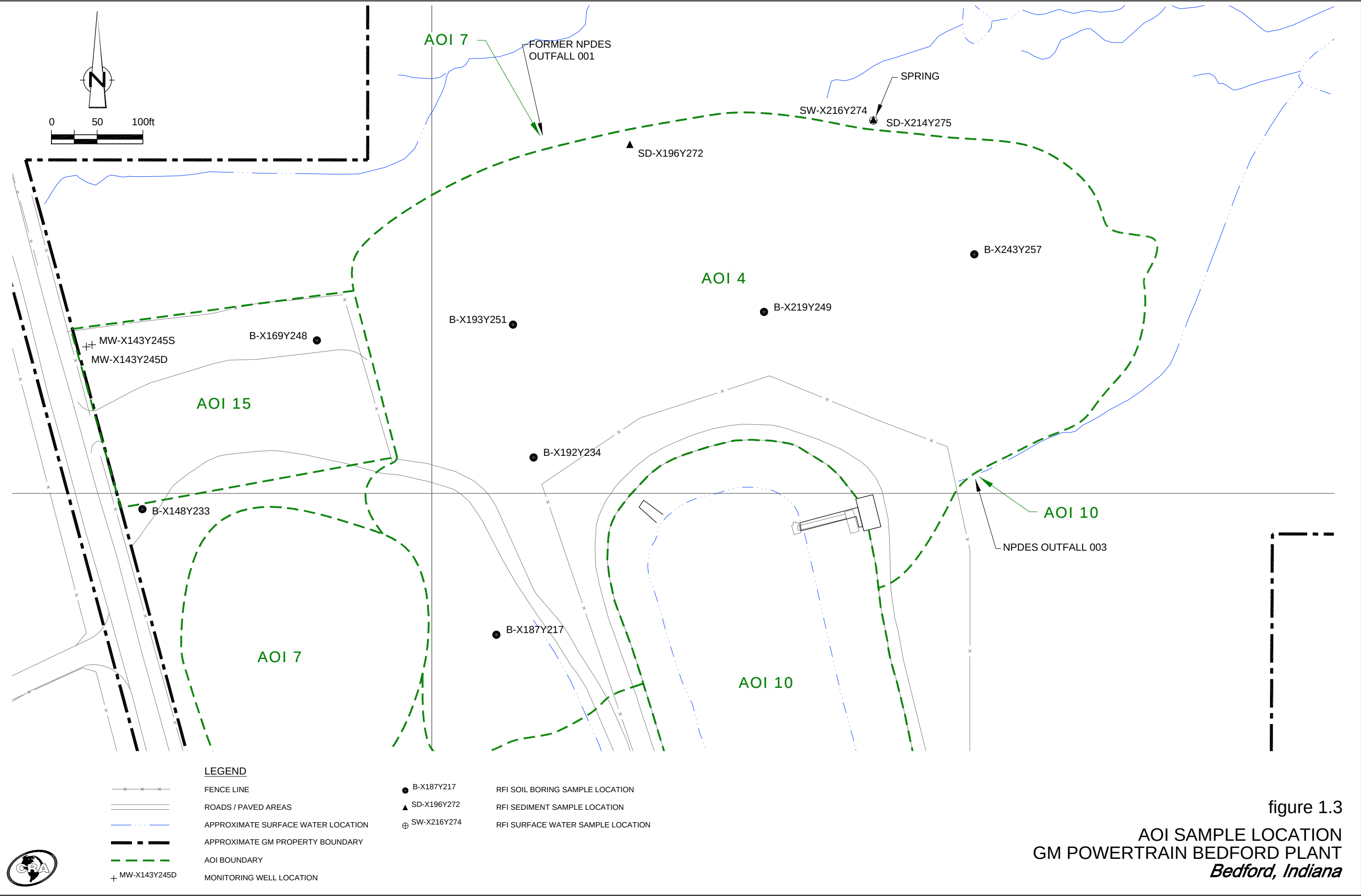


LEGEND



FACILITY BOUNDARY

figure 1.1
 SITE LOCATION
 GM POWERTRAIN BEDFORD PLANT
Bedford, Indiana



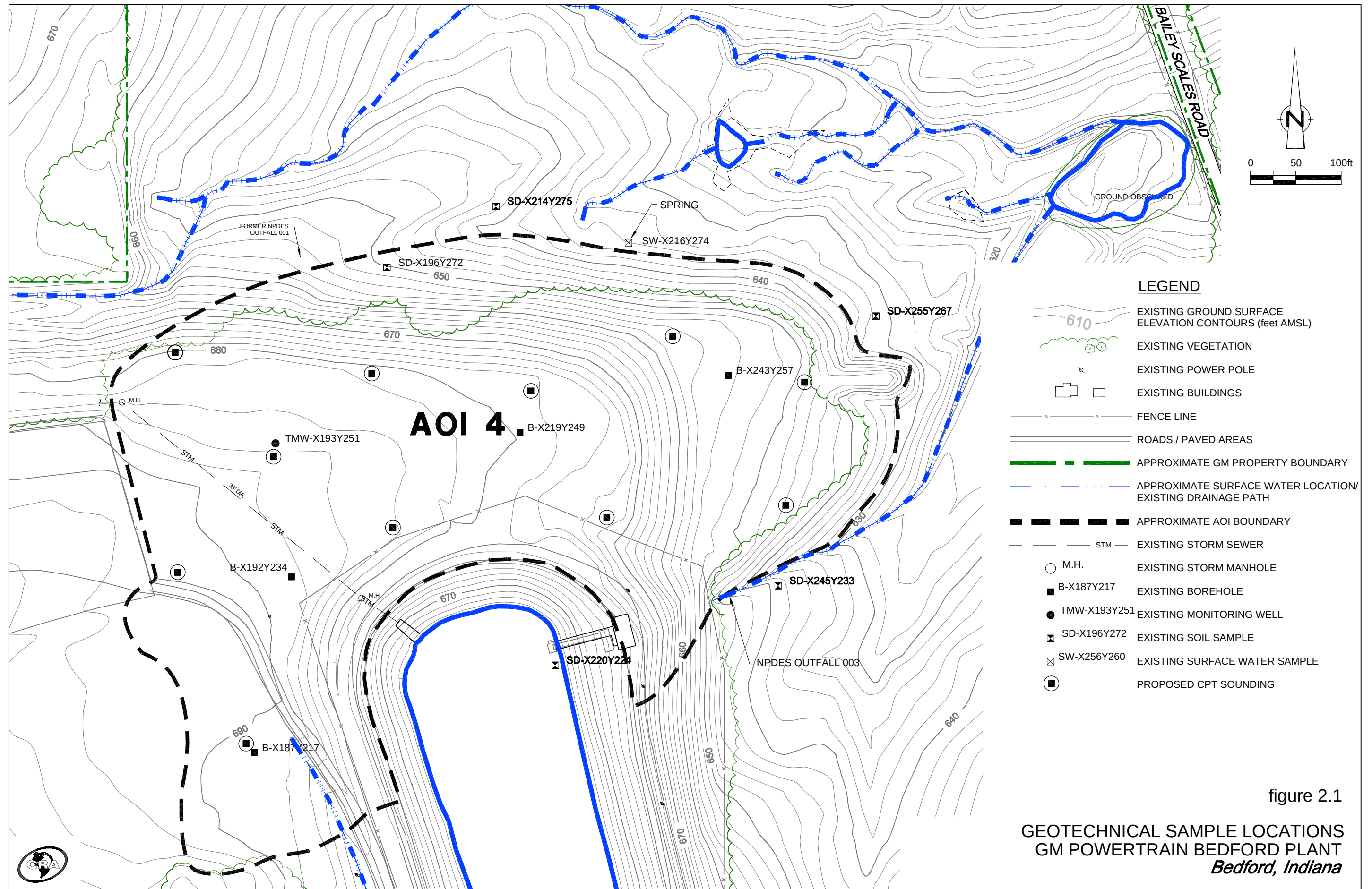


figure 2.1
 GEOTECHNICAL SAMPLE LOCATIONS
 GM POWERTRAIN BEDFORD PLANT
Bedford, Indiana

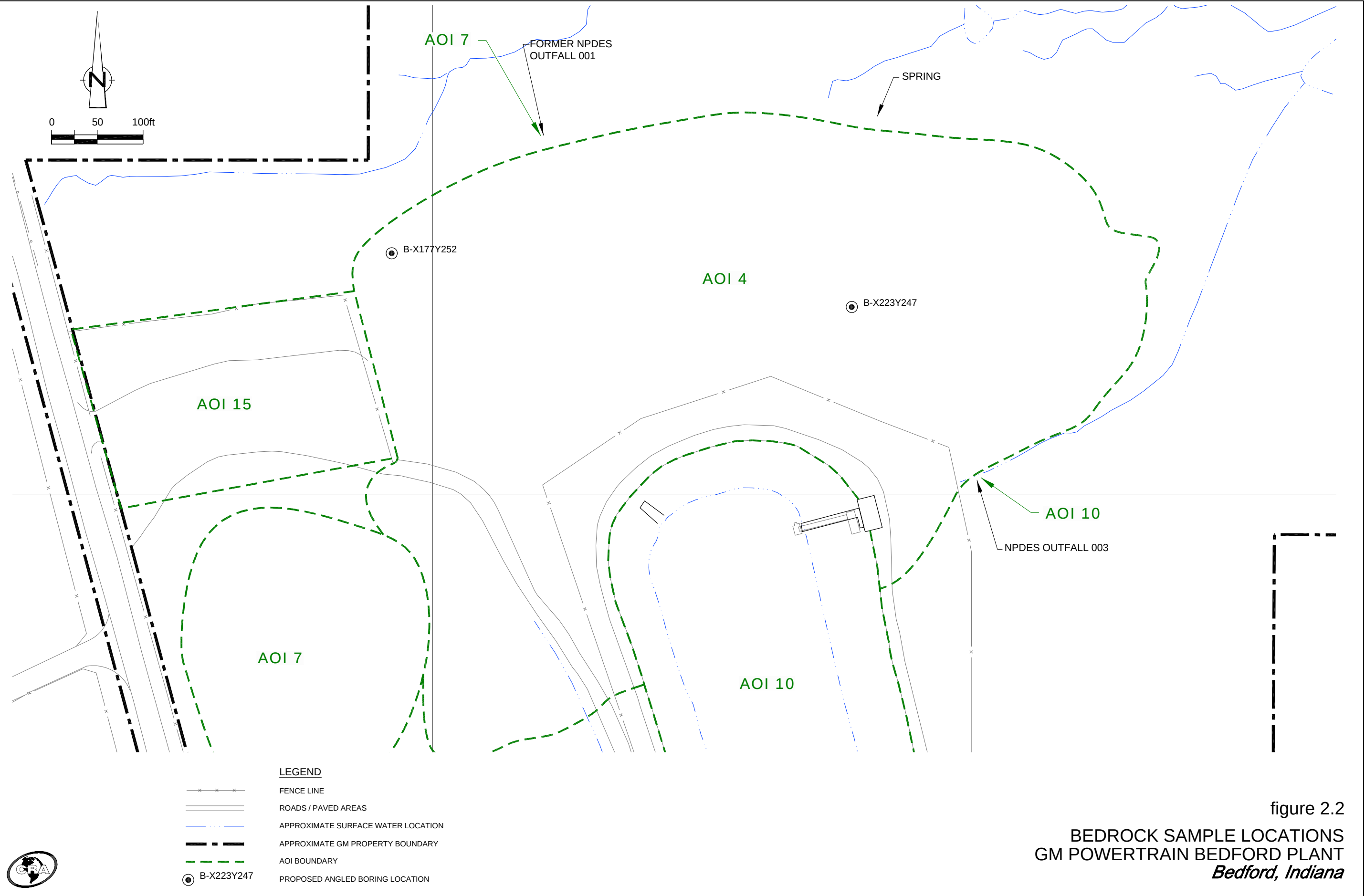


figure 2.2
BEDROCK SAMPLE LOCATIONS
GM POWERTRAIN BEDFORD PLANT
Bedford, Indiana

TABLE 1.1

SUMMARY OF VALIDATED SOIL DATA FROM AO14
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:	B-X187Y217	B-X187Y217	B-X192Y234	B-X192Y234	B-X192Y234	B-X193Y251	B-X193Y251	B-X193Y251	B-X193Y251	B-X193Y251	B-X219Y249	B-X219Y249	B-X219Y249
Sample ID:	S-030602-MG-156	S-030602-MG-157	S-030502-MG-153	S-030502-MG-154	S-030502-MG-155	S-030402-MG-146	S-030402-MG-147	S-030402-MG-148	S-030402-MG-149	S-022502-KMV-536	S-022502-KMV-537	S-022602-KMV-538	
Sample Date:	3/6/2002	3/6/2002	3/5/2002	3/5/2002	3/5/2002	3/4/2002	3/4/2002	3/4/2002	3/4/2002	2/25/2002	2/25/2002	2/26/2002	
Sample Depth (feet bgs)	(0-2)	(6-8)	(0-2)	(6-8)	(20-22)	(0-2)	(0-2)	(6-8)	(26-28)	(0-2)	(0-2)	(6-8)	
Other:							Duplicate				Duplicate		
Parameters	Units												
Metals													
Aluminum	mg / Kg	13200	15200	12200	4710	22500	16800	13500	2020	4650	11400	11800	7190
Antimony	mg / Kg	ND (7.5) UJ	ND (7.8) UJ	ND (7.9) UJ	ND (6.7) UJ	ND (6.9) UJ	R	R	R	R	ND (7.5) UJ	ND (7.2) UJ	ND (6.8) UJ
Arsenic	mg / Kg	10.2	12.8	8.3	2.5	3.9	10.3	10.5	0.87 J	1.1	7.7	7.2	1.8
Barium	mg / Kg	50.3	192	49.4	25.5	93.3	137	86.1	20.8 J	11.2 J	67.6	66.8	379 J
Beryllium	mg / Kg	ND (0.62) U	1.6	1.4	ND (0.56) U	ND (0.58) U	0.95	1.1	ND (0.54)	ND (0.56) U	0.52 J	0.25 J	ND (0.57) U
Cadmium	mg / Kg	ND (0.62)	0.081 J	ND (0.66)	0.11 J	ND (0.58)	ND (0.64)	ND (0.64)	ND (0.54)	0.51 J	ND (0.62)	ND (0.60)	0.37 J
Chromium Total	mg / Kg	23.6 J	21.2 J	31.0	19.7	15.3	22.9	31	441	97.1	22.8	16.7	97.4
Cobalt	mg / Kg	4.3 J	8.3 J	20.8	15.2	7.8	12.9	12.3	718	104	7	6.7	103 J
Copper	mg / Kg	15.1 J	21.2 J	23.3	52.7	256	30.7 J	23.2 J	38.6 J	98.2 J	14.3	16.5	115
Cyanide (amenable)	mg / Kg	ND (0.62)	ND (0.65)	ND (0.66)	ND (0.56)	ND (0.58)	ND (0.64)	ND (0.64)	ND (0.54)	ND (0.56)	ND (0.62)	ND (0.60)	ND (0.57)
Cyanide (total)	mg / Kg	ND (0.62)	ND (0.65)	ND (0.66)	ND (0.56)	0.27 J	ND (0.64)	ND (0.64)	ND (0.54)	ND (0.56)	ND (0.62)	ND (0.60)	ND (0.57)
Iron	mg / Kg	26000 J	30400 J	28700	6660	9540	29000	12000	6060	24700	20300	12100	
Lead	mg / Kg	17.8 J	29.5 J	19.6	19.0	26.4	15.2	16.5	47.5	18.4	11.4	12.4	66.6 J
Manganese	mg / Kg	145 J	402 J	190	138	330	573	140	56.5	215	357	125 J	
Mercury	mg / Kg	0.20	0.14	0.47	0.15	0.089 J	0.071 J	0.038 J	23.9 J	1.7 J	0.032 J	0.035 J	8.2
Nickel	mg / Kg	13.2 J	51.7 J	31.0	24.3	82.4	35.8	984	184	14.2	11.9	267	
Selenium	mg / Kg	ND (0.62)	ND (0.65)	ND (0.66)	ND (0.56)	ND (0.58)	ND (0.64)	ND (0.64)	0.69	0.43 J	ND (0.62)	ND (0.60)	0.59
Silver	mg / Kg	ND (1.2)	ND (1.3)	ND (1.3)	ND (1.1)	ND (1.2)	ND (1.3)	ND (1.3)	0.25 J	ND (1.1)	ND (1.2)	ND (1.2)	0.23 J
Thallium	mg / Kg	0.64 J	1.1 J	ND (1.3)	ND (1.1)	ND (1.2)	0.78 J	0.8 J	2.6	0.69 J	ND (1.2)	0.81 J	ND (1.1) U
Vanadium	mg / Kg	38.0 J	31.4 J	43.3	8.8	16.1	32.6	43.5	2.9 J	2.9 J	34.5	28.1	6.1
Zinc	mg / Kg	45.5 J	72.9 J	66.0	57.3	32.9	77.3	62.7	47.4	44.8	36.4	35.6	63.3
PCBs													
Aroclor-1016 (PCB-1016)	ug / Kg	ND (41)	ND (43)	ND (44)	ND (180)	ND (38)	ND (43)	ND (42)	ND (3500)	ND (19000)	ND (41)	ND (39)	ND (1900)
Aroclor-1221 (PCB-1221)	ug / Kg	ND (41)	ND (43)	ND (44)	ND (180)	ND (38)	ND (43)	ND (42)	ND (3500)	ND (19000)	ND (41)	ND (39)	ND (1900)
Aroclor-1232 (PCB-1232)	ug / Kg	ND (41)	ND (43)	ND (44)	ND (180)	ND (38)	ND (43)	ND (42)	ND (3500)	ND (19000)	ND (41)	ND (39)	ND (1900)
Aroclor-1242 (PCB-1242)	ug / Kg	ND (41)	ND (43)	ND (44)	ND (180)	ND (38)	ND (43)	ND (42)	ND (3500)	ND (19000)	ND (41)	ND (39)	ND (1900)
Aroclor-1248 (PCB-1248)	ug / Kg	170	25 J	11 J	1600	ND (38)	ND (43)	ND (43)	8.1 J	69000	ND (41)	ND (39)	19000
Aroclor-1254 (PCB-1254)	ug / Kg	ND (41)	ND (43)	ND (44)	ND (180)	190	ND (43)	ND (42)	ND (3500)	280000	ND (41)	ND (39)	ND (1900)
Aroclor-1260 (PCB-1260)	ug / Kg	27 J	ND (43)	ND (44)	ND (180)	ND (38)	ND (43)	ND (42)	13000	ND (19000)	ND (41)	ND (39)	3000
Semi - Volatiles													
2,2'-oxybis(1-Chloropropane) (bis(2-chloroisopropyl) ether)	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
2,4,5-Trichlorophenol	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
2,4,6-Trichlorophenol	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
2,4-Dichlorophenol	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
2,4-Dimethylphenol	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	6100	ND (1500)	ND (410)	ND (390)	320 J
2,4-Dinitrophenol	ug / Kg	ND (2000)	ND (2100)	ND (2100)	ND (1800)	ND (1800)	ND (2100)	ND (2100)	ND (1700)	ND (7200)	ND (2000)	ND (1900)	ND (1800)
2,4-Dinitrotoluene	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
2,6-Dinitrotoluene	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
2-Chloronaphthalene	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
2-Chlorophenol	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
2-Methylnaphthalene	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	270 J	ND (1500)	ND (410)	ND (390)	260 J
2-Methylphenol	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
2-Nitroaniline	ug / Kg	ND (2000)	ND (2100)	ND (2100)	ND (1800)	ND (1800)	ND (2100)	ND (2100)	ND (1700)	ND (7200)	ND (2000)	ND (1900)	ND (1800)
2-Nitrophenol	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
3,3'-Dichlorobenzidine	ug / Kg	ND (2000)	ND (2100)	ND (2100)	ND (1800)	ND (1800)	ND (2100)	ND (2100)	ND (1700)	ND (7200)	ND (2000)	ND (1900)	ND (1800)
3-Nitroaniline	ug / Kg	ND (2000)	ND (2100)	ND (2100)	ND (1800)	ND (1800)	ND (2100)	ND (2100)	ND (1700)	ND (7200)	ND (2000)	ND (1900)	ND (1800)
4,6-Dinitro-2-methylphenol	ug / Kg	ND (2000)	ND (2100)	ND (2100)	ND (1800)	ND (1800)	ND (2100)	ND (2100)	ND (1700)	ND (7200)	ND (2000)	ND (1900)	ND (1800)
4-Bromophenyl phenyl ether	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
4-Chloro-3-methylphenol	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
4-Chloroaniline	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
4-Chlorophenyl phenyl ether	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
4-Methylphenol	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	270 J	ND (1500)	ND (410)	ND (390)	ND (370)
4-Nitroaniline	ug / Kg	ND (2000)	ND (2100)	ND (2100)	ND (1800)	ND (1800)	ND (2100)	ND (2100)	ND (1700)	ND (7200)	ND (2000)	ND (1900)	ND (1800)
4-Nitrophenol	ug / Kg	ND (2000)	ND (2100)	ND (2100)	ND (1800)	ND (1800)	ND (2100)	ND (2100)	ND (1700)	ND (7200)	ND (2000)	ND (1900)	ND (1800)
Acenaphthene	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	150 J
Acenaphthylene	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Acetophenone	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Anthracene	ug / Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	98 J

TABLE 1.1

**SUMMARY OF VALIDATED SOIL DATA FROM AO14
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS**

Sample Location:	B-X187Y217	B-X187Y217	B-X192Y234	B-X192Y234	B-X192Y234	B-X193Y251	B-X193Y251	B-X193Y251	B-X193Y251	B-X193Y251	B-X219Y249	B-X219Y249	B-X219Y249
Sample ID:	S-030602-MG-156	S-030602-MG-157	S-030502-MG-153	S-030502-MG-154	S-030502-MG-155	S-030402-MG-146	S-030402-MG-147	S-030402-MG-148	S-030402-MG-149	S-022502-KMV-536	S-022502-KMV-537	S-022602-KMV-538	
Sample Date:	3/6/2002	3/6/2002	3/5/2002	3/5/2002	3/5/2002	3/4/2002	3/4/2002	3/4/2002	3/4/2002	2/25/2002	2/25/2002	2/26/2002	
Sample Depth (feet bgs)	(0-2)	(6-8)	(0-2)	(6-8)	(20-22)	(0-2)	(0-2)	(6-8)	(26-28)	(0-2)	(0-2)	(6-8)	
Other:							Duplicate				Duplicate		
Parameters	Units												
Atrazine	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Benzaldehyde	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Benzo(a)anthracene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	320 J
Benzo(a)pyrene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	360 J
Benzo(h)fluoranthene	ug /Kg	ND (410)	ND (430)	ND (440)	74 J	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	410
Benzo(g,h,i)perylene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	240 J
Benzo(k)fluoranthene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	220 J
Biphenyl	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
bis(2-Chloroethoxy)methane	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
bis(2-Chloroethyl)ether	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
bis(2-Ethylhexyl)phthalate	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	570	ND (1500)	ND (410)	120 J	ND (370)
Butyl benzylphthalate	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Caprolactam	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Carbazole	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	110 J
Chrysene	ug /Kg	ND (410)	ND (430)	ND (440)	59 J	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	390
Dibenz(a,h)anthracene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	69 J
Dibenzofuran	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	130 J
Diethyl phthalate	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Dimethyl phthalate	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Di-n-butylphthalate	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	2900	ND (1500)	ND (410)	ND (390)	ND (370)
Di-n-octyl phthalate	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Fluoranthene	ug /Kg	ND (410)	ND (430)	ND (440)	80 J	ND (380)	ND (430)	ND (420)	73 J	ND (1500)	ND (410)	ND (390)	630
Fluorene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	150 J
Hexachlorobenzene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Hexachlorobutadiene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Hexachlorocyclopentadiene	ug /Kg	ND (2000)	ND (2100)	ND (2100)	ND (1800)	ND (1800)	ND (2100)	ND (2100)	ND (1700)	ND (7200)	ND (2000) UJ	ND (1900)	ND (1800)
Hexachloroethane	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Indeno(1,2,3-cd)pyrene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	210 J
Isophorone	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Naphthalene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	160 J	ND (1500)	ND (410)	ND (390)	290 J
Nitrobenzene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
N-Nitrosodi-n-propylamine	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
N-Nitrosodiphenylamine	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Pentachlorophenol	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	ND (370)
Phenanthrene	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	190 J	ND (1500)	ND (410)	ND (390)	440
Phenol	ug /Kg	ND (410)	ND (430)	ND (440)	ND (370)	ND (380)	ND (430)	ND (420)	ND (350)	ND (1500)	ND (410)	ND (390)	340 J
Pyrene	ug /Kg	ND (410)	ND (430)	ND (440)	71 J	ND (380)	ND (430)	ND (420)	86 J	ND (1500)	ND (410)	ND (390)	530
Volatiles													
1,1,1-Trichloroethane	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
1,1,2,2-Tetrachloroethane	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
1,1,2-Trichloroethane	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
1,1-Dichloroethane	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
1,1-Dichloroethene	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
1,2,4-Trichlorobenzene	ug /Kg	ND (6)	ND (9.1) U	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
1,2-Dibromo-3-chloropropane (DBCP)	ug /Kg	ND (12)	ND (18)	ND (15)	ND (17)	ND (11)	ND (12)	ND (12)	ND (12)	ND (680)	ND (9.8)	ND (9.7)	ND (13)
1,2-Dibromoethane (Ethylene Dibromide)	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
1,2-Dichlorobenzene	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	550	ND (4.9)	ND (4.8)	ND (6.4)
1,2-Dichloroethane	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	16 J	ND (4.9)	ND (4.8)	ND (6.4)
1,2-Dichloropropane	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
1,3-Dichlorobenzene	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
1,4-Dichlorobenzene	ug /Kg	ND (6)	1.3 J	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340) U	ND (4.9)	ND (4.8)	ND (6.4)
2-Butanone (Methyl Ethyl Ketone)	ug /Kg	ND (24)	ND (36)	ND (29)	7.3 J	5.7 J	ND (24)	ND (24)	3.4 J	ND (1400)	ND (20)	ND (19)	8.5 J
2-Hexanone	ug /Kg	ND (24)	ND (36)	ND (29)	ND (33)	ND (23)	ND (24)	ND (24)	ND (25)	ND (1400)	ND (20)	ND (19)	ND (26)
4-Methyl-2-pentanone	ug /Kg	ND (24)	ND (36)	ND (29)	ND (33)	ND (23)	ND (24)	ND (24)	ND (25)	ND (1400)	ND (20)	ND (19)	ND (26)
Acetone	ug /Kg	ND (24) UJ	ND (36) UJ	ND (29) UJ	40 J	28 J	ND (24) UJ	ND (24) UJ	18 J	ND (1400)	ND (20) UJ	ND (19) UJ	ND (26) UJ
Benzene	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
Bromodichloromethane	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
Bromoform	ug /Kg	ND (6) UJ	ND (9.1) UJ	ND (7.3) UJ	ND (8.3) UJ	ND (5.6) UJ	ND (5.9) UJ	ND (6) UJ	ND (6.2) UJ	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
Bromomethane (Methyl Bromide)	ug /Kg	ND (6)	ND (9.1)	ND (7.3) UJ	ND (8.3) UJ	ND (5.6) UJ	ND (5.9) UJ	ND (6) UJ	ND (6.2) UJ	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)
Carbon disulfide	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	5.3 J	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	340	ND (4.9)	ND (4.8)	1.8 J
Carbon tetrachloride	ug /Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)

TABLE 1.1

SUMMARY OF VALIDATED SOIL DATA FROM AO14
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:		B-X187Y217	B-X187Y217	B-X192Y234	B-X192Y234	B-X192Y234	B-X193Y251	B-X193Y251	B-X193Y251	B-X193Y251	B-X193Y251	B-X193Y251	B-X193Y251	B-X193Y251
Sample ID:		S-030602-MG-156	S-030602-MG-157	S-030502-MG-153	S-030502-MG-154	S-030502-MG-155	S-030402-MG-146	S-030402-MG-147	S-030402-MG-148	S-030402-MG-149	S-022502-KMV-536	S-022502-KMV-537	S-022602-KMV-538	
Sample Date:		3/6/2002	3/6/2002	3/5/2002	3/5/2002	3/5/2002	3/4/2002	3/4/2002	3/4/2002	3/4/2002	2/25/2002	2/25/2002	2/26/2002	
Sample Depth (feet bgs)		(0-2)	(6-8)	(0-2)	(6-8)	(20-22)	(0-2)	(0-2)	(6-8)	(26-28)	(0-2)	(0-2)	(6-8)	
Other:								Duplicate				Duplicate		
Parameters	Units													
Chlorobenzene	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	0.93 J	3500	ND (4.9)	ND (4.8)	ND (6.4)	
Chloroethane	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Chloroform (Trichloromethane)	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Chloromethane (Methyl Chloride)	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
cis-1,2-Dichloroethene	ug / Kg	ND (3)	ND (4.5)	ND (3.6)	ND (4.2)	ND (2.8)	ND (3)	ND (3)	ND (3.1)	ND (170)	ND (2.5)	ND (2.4)	1.3 J	
cis-1,3-Dichloropropene	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Cyclohexane	ug / Kg	ND (12)	ND (18)	ND (15)	ND (17)	ND (11)	ND (12)	ND (12)	ND (12)	ND (680)	ND (9.8)	ND (9.7)	2 J	
Dibromochloromethane	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Dichlorodifluoromethane (CFC-12)	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Ethylbenzene	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	0.88 J	
Isopropylbenzene	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Methyl acetate	ug / Kg	ND (12)	ND (18)	ND (15)	ND (17)	ND (11)	ND (12)	ND (12)	ND (12)	74 J	ND (9.8)	ND (9.7)	ND (13)	
Methyl cyclohexane	ug / Kg	ND (12)	ND (18)	ND (15)	ND (17)	ND (11)	ND (12)	ND (12)	ND (12)	28 J	ND (9.8)	ND (9.7)	3.8 J	
Methyl Tert Butyl Ether	ug / Kg	ND (24)	ND (36)	ND (29)	ND (33)	ND (23)	ND (24)	ND (24)	ND (25)	ND (1400)	ND (20)	ND (19)	ND (26)	
Methylene chloride	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	4 J	4.8	ND (6.4)	
Styrene	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Tetrachloroethene	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Toluene	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	14 J	ND (4.9)	ND (4.8)	1.5 J	
trans-1,2-Dichloroethene	ug / Kg	ND (3)	ND (4.5)	ND (3.6)	ND (4.2)	ND (2.8)	ND (3)	ND (3)	ND (3.1)	ND (170)	ND (2.5)	ND (2.4)	ND (3.2)	
trans-1,3-Dichloropropene	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Trichloroethene	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	26 J	ND (4.9)	ND (4.8)	ND (6.4)	
Trichlorofluoromethane (CFC-11)	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Trifluorotrichloroethane (Freon 113)	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Vinyl chloride	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	ND (6.4)	
Xylene (total)	ug / Kg	ND (6)	ND (9.1)	ND (7.3)	ND (8.3)	ND (5.6)	ND (5.9)	ND (6)	ND (6.2)	ND (340)	ND (4.9)	ND (4.8)	3.1 J	
General Chemistry														
Total Organic Carbon (TOC)	mg / Kg	-	-	-	-	-	-	-	-	-	-	-	-	
Total Solids	%	80.2	76.7	75.8	90.0	86.7	77.6	78	93.4	89	80.3	83.8	88.4	

U - Non-detect at associated value.
J - Estimated.
UJ - Non-detect. The associated value is estimated.

TABLE 1.1

SUMMARY OF VALIDATED SOIL DATA FROM AO14
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:	B-X219Y249	B-X243Y257	B-X243Y257	B-X243Y257	SD-X196Y272	B-X148Y233	B-X148Y233	B-X148Y233	B-X148Y233	B-X148Y233	B-X169Y248	B-X169Y248	B-X169Y248
Sample ID:	S-022602-KMV-539	S-030502-MG-150	S-030502-MG-151	S-030502-MG-152	S-031402-JW-1429	S-022202-KMV-532	S-022202-KMV-533	S-022202-KMV-534	S-022202-KMV-535	S-022202-KMV-535	S-022102-KMV-528	S-022102-KMV-529	S-022102-KMV-530
Sample Date:	2/26/2002	3/5/2002	3/5/2002	3/5/2002	3/14/2002	2/22/2002	2/22/2002	2/22/2002	2/22/2002	2/22/2002	2/21/2002	2/21/2002	2/21/2002
Sample Depth (feet bgs)	(22-23)	(0-2)	(6-8)	(14-16)	(0-0.33)	(0-2)	(0-2)	(6-8)	(12-14)	(0-2)	(0-2)	(6-8)	(6-8)
Other:							Duplicate				Duplicate		
Parameters	Units												
Metals													
Aluminum	mg / Kg	8990	15100	11100	16900	31800	2530	1720	2280	2800	2660	1380	21400
Antimony	mg / Kg	ND (7.1) UJ	ND (7.9) UJ	ND (6.9) UJ	ND (7.5) UJ	ND (7.7)	ND (6.8)	ND (6.5)	ND (7.8)	ND (8.4)	ND (6.3)	ND (6.4)	1.6 J
Arsenic	mg / Kg	5	10.7	2.0	20.2	7.3	0.36 J	1.1	2.1	7.4	1.2	0.71 J	3.2
Barium	mg / Kg	68.3 J	65.6	64.5	65.5	69.8	14.3 J	15.1 J	37.1	42.8	69.6	33.1	19.7 J
Beryllium	mg / Kg	ND (0.59) U	ND (0.88) U	ND (0.58) U	ND (0.83) U	ND (0.68) U	ND (0.56)	ND (0.55) U	ND (0.65) U	1.3	ND (0.53) U	ND (0.53) U	ND (0.55) U
Cadmium	mg / Kg	0.29 J	ND (0.66)	0.60	ND (0.62)	ND (0.64)	ND (0.56) U	ND (0.55) U	ND (0.65) U	0.29 J	0.73	0.66	0.82
Chromium Total	mg / Kg	22	32.3	176	26.0	39.1	25.7	15.9	3.1	8.4	12.7	9.8	109
Cobalt	mg / Kg	34.4 J	5.4 J	218	15.3	31.9	37.2	16.5	20.7	5.6 J	7.6	5.9	14.8
Copper	mg / Kg	83.7	16.1	400	15.7	184	54.4	42.1	5.7	7.3	61.6	41.3	541
Cyanide (amenable)	mg / Kg	ND (0.59)	ND (0.66)	ND (0.58)	ND (0.62)	ND (0.64)	ND (0.56)	ND (0.55)	ND (0.65)	ND (0.70)	ND (0.53)	ND (0.53)	ND (0.55)
Cyanide (total)	mg / Kg	ND (0.59)	ND (0.66)	0.27 J	ND (0.62)	ND (0.64)	ND (0.56)	ND (0.55)	ND (0.65)	ND (0.70)	ND (0.53)	ND (0.53)	ND (0.55)
Iron	mg / Kg	11300	34100	9190	33500	20900	1040	1710	6510	7740	5760	11200	11200
Lead	mg / Kg	32.2 J	15.9	63.2	20.0	26.9	ND (0.34) U	21	ND (0.39) U	ND (0.42) U	12.8	9.1	160
Manganese	mg / Kg	757 J	211	159	590	523	55.3	51.8	1120	373	154	124	236
Mercury	mg / Kg	0.87	0.13	33.7	0.089 J	ND (0.13) U	0.31 J	0.33 J	0.02 J	0.11 J	0.45	0.38	5
Nickel	mg / Kg	33.5	12.9	476	17.5	86.8	37.3	38.2	10.5	19.3	22.4	23.2	1130
Selenium	mg / Kg	ND (0.59)	ND (0.66)	ND (0.58)	ND (0.62)	ND (0.64)	ND (0.56)	ND (0.55)	ND (0.65)	ND (0.70)	ND (0.53)	ND (0.53)	ND (0.55)
Silver	mg / Kg	ND (1.2)	ND (1.3)	2.9	ND (1.2)	ND (1.3)	0.26 J	ND (1.1)	ND (1.3)	ND (1.4)	ND (1.1)	ND (1.1)	0.48 J
Thallium	mg / Kg	ND (1.2)	ND (1.3)	0.59 J	ND (1.2)	ND (1.3)	ND (1.1)	ND (1.1)	ND (1.3)	ND (1.4)	ND (1.1)	ND (1.1)	ND (1.1) U
Vanadium	mg / Kg	16.2	53.3	5.6 J	55.3	26.7	1.8 J	2.7 J	9.5	25.8	4.4 J	2.1 J	8.3
Zinc	mg / Kg	71.7	37.8	122	68.6	122	17.6	16.3	10.3	25	48.1	32.7	160
PCBs													
Aroclor-1016 (PCB-1016)	ug / Kg	ND (390)	ND (43)	ND (15000)	ND (41)	ND (42)	ND (3700)	ND (360)	ND (43)	ND (46)	ND (690)	ND (710)	ND (730)
Aroclor-1221 (PCB-1221)	ug / Kg	ND (390)	ND (43)	ND (15000)	ND (41)	ND (42)	ND (3700)	ND (360)	ND (43)	ND (46)	ND (690)	ND (710)	ND (730)
Aroclor-1232 (PCB-1232)	ug / Kg	ND (390)	ND (43)	ND (15000)	ND (41)	ND (42)	ND (3700)	ND (360)	ND (43)	ND (46)	ND (690)	ND (710)	ND (730)
Aroclor-1242 (PCB-1242)	ug / Kg	ND (390)	ND (43)	170000	24 J	ND (42)	ND (3700)	ND (360)	ND (43)	ND (46)	ND (690)	ND (710)	ND (730)
Aroclor-1248 (PCB-1248)	ug / Kg	3100	62	ND (15000)	ND (41)	490	48000	3300	7.1 J	ND (46)	4900	5100	ND (730)
Aroclor-1254 (PCB-1254)	ug / Kg	ND (390)	ND (43)	ND (15000)	ND (41)	ND (42)	ND (3700)	ND (360)	ND (43)	ND (46)	ND (690)	ND (710)	9100
Aroclor-1260 (PCB-1260)	ug / Kg	290 J	ND (43)	ND (15000)	ND (41)	84	4700	310 J	ND (43)	ND (46)	570 J	650 J	ND (730)
Semi - Volatiles													
2,2'-oxybis(1-Chloropropane) (bis(2-chloroisopropyl) ether)	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2,4,5-Trichlorophenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2,4,6-Trichlorophenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2,4-Dichlorophenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2,4-Dimethylphenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2,4-Dinitrophenol	ug / Kg	ND (1900)	ND (2100)	ND (1800)	ND (2000)	ND (2100)	ND (1800)	ND (1700)	ND (2100)	ND (2200)	ND (1700)	ND (1700)	ND (1800)
2,4-Dinitrotoluene	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2,6-Dinitrotoluene	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2-Chloronaphthalene	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2-Chlorophenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2-Methylnaphthalene	ug / Kg	ND (390)	ND (430)	58 J	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2-Methylphenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
2-Nitroaniline	ug / Kg	ND (1900)	ND (2100)	ND (1800)	ND (2000)	ND (2100)	ND (1800)	ND (1700)	ND (2100)	ND (2200)	ND (1700)	ND (1700)	ND (1800)
2-Nitrophenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
3,3'-Dichlorobenzidine	ug / Kg	ND (1900)	ND (2100)	ND (1800)	ND (2000)	ND (2100)	ND (1800)	ND (1700)	ND (2100)	ND (2200)	ND (1700)	ND (1700)	ND (1800)
3-Nitroaniline	ug / Kg	ND (1900)	ND (2100)	ND (1800)	ND (2000)	ND (2100)	ND (1800)	ND (1700)	ND (2100)	ND (2200)	ND (1700)	ND (1700)	ND (1800)
4,6-Dinitro-2-methylphenol	ug / Kg	ND (1900)	ND (2100)	ND (1800)	ND (2000)	ND (2100)	ND (1800)	ND (1700)	ND (2100)	ND (2200)	ND (1700)	ND (1700)	ND (1800)
4-Bromophenyl phenyl ether	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
4-Chloro-3-methylphenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
4-Chloroaniline	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
4-Chlorophenyl phenyl ether	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
4-Methylphenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
4-Nitroaniline	ug / Kg	ND (1900)	ND (2100)	ND (1800)	ND (2000)	ND (2100)	ND (1800)	ND (1700)	ND (2100)	ND (2200)	ND (1700)	ND (1700)	ND (1800)
4-Nitrophenol	ug / Kg	ND (1900)	ND (2100)	ND (1800)	ND (2000)	ND (2100)	ND (1800)	ND (1700)	ND (2100)	ND (2200)	ND (1700)	ND (1700)	ND (1800)
Acenaphthene	ug / Kg	ND (390)	ND (430)	520	ND (410)	ND (420)	73 J	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Acenaphthylene	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Acetophenone	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Anthracene	ug / Kg	ND (390)	ND (430)	57 J	ND (410)	ND (420)	83 J	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)

TABLE 1.1

**SUMMARY OF VALIDATED SOIL DATA FROM AO14
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS**

Sample Location:	B-X219Y249	B-X243Y257	B-X243Y257	B-X243Y257	SD-X196Y272	B-X148Y233	B-X148Y233	B-X148Y233	B-X148Y233	B-X148Y233	B-X169Y248	B-X169Y248	B-X169Y248
Sample ID:	S-022602-KMV-539	S-030502-MG-150	S-030502-MG-151	S-030502-MG-152	S-031402-JW-1429	S-022202-KMV-532	S-022202-KMV-533	S-022202-KMV-534	S-022202-KMV-535	S-022102-KMV-528	S-022102-KMV-529	S-022102-KMV-530	
Sample Date:	2/26/2002	3/5/2002	3/5/2002	3/5/2002	3/14/2002	2/22/2002	2/22/2002	2/22/2002	2/22/2002	2/21/2002	2/21/2002	2/21/2002	
Sample Depth (feet bgs)	(22-23)	(0-2)	(6-8)	(14-16)	(0-0.33)	(0-2)	(0-2)	(6-8)	(12-14)	(0-2)	(0-2)	(6-8)	
Other:							Duplicate				Duplicate		
Parameters	Units												
Atrazine	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Benzaldehyde	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Benzo(a)anthracene	ug / Kg	79 J	ND (430)	120 J	ND (410)	ND (420)	350 J	61 J	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Benzo(a)pyrene	ug / Kg	74 J	ND (430)	120 J	ND (410)	ND (420)	400 J	74 J	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Benzo(b)fluoranthene	ug / Kg	88 J	ND (430)	150 J	ND (410)	ND (420)	590 J	99 J	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Benzo(g,h,i)perylene	ug / Kg	ND (390)	ND (430)	83 J	ND (410)	ND (420)	280 J	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Benzo(k)fluoranthene	ug / Kg	ND (390)	ND (430)	78 J	ND (410)	ND (420)	190 J	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Biphenyl	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
bis(2-Chloroethoxy)methane	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
bis(2-Chloroethyl)ether	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
bis(2-Ethylhexyl)phthalate	ug / Kg	64 J	ND (430)	200 J	ND (410)	ND (420)	ND (370) U	ND (360) U	ND (430) U	ND (460) U	ND (350)	ND (350)	ND (370)
Butyl benzylphthalate	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Caprolactam	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Carbazole	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	66 J	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Chrysene	ug / Kg	88 J	ND (430)	170 J	ND (410)	ND (420)	440 J	77 J	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Dibenz(a,h)anthracene	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	71 J	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Dibenzofuran	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Diethyl phthalate	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Dimethyl phthalate	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Di-n-butylphthalate	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	530	ND (370)	ND (360)	ND (430)	ND (460)	430	320 J	ND (370)
Di-n-octyl phthalate	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Fluoranthene	ug / Kg	200 J	ND (430)	230 J	ND (410)	ND (420)	940 J	110 J	ND (430)	ND (460)	ND (350)	ND (350)	160 J
Fluorene	ug / Kg	ND (390)	ND (430)	82 J	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Hexachlorobenzene	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Hexachlorobutadiene	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Hexachlorocyclopentadiene	ug / Kg	ND (1900)	ND (2100)	ND (1800)	ND (2000)	ND (2100)	ND (1800)	ND (1700)	ND (2100)	ND (2200)	ND (1700)	ND (1700)	ND (1800)
Hexachloroethane	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Indeno(1,2,3-cd)pyrene	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	270 J	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Isophorone	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Naphthalene	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	57 J	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Nitrobenzene	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
N-Nitrosodi-n-propylamine	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
N-Nitrosodiphenylamine	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Pentachlorophenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	ND (420)	ND (370)	ND (360)	ND (430)	ND (460)	ND (350)	ND (350)	ND (370)
Phenanthrene	ug / Kg	180 J	ND (430)	410	ND (410)	ND (420)	510 J	63 J	ND (430)	ND (460)	ND (350)	ND (350)	150 J
Phenol	ug / Kg	ND (390)	ND (430)	ND (380)	ND (410)	220 J	ND (370)	99 J	ND (430)	ND (460)	180 J	110 J	ND (370)
Pyrene	ug / Kg	160 J	ND (430)	240 J	ND (410)	ND (420)	740 J	120 J	ND (430)	ND (460)	ND (350)	ND (350)	140 J
Volatiles													
1,1,1-Trichloroethane	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,1,2,2-Tetrachloroethane	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,1,2-Trichloroethane	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,1-Dichloroethane	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,1-Dichloroethene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,2,4-Trichlorobenzene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,2-Dibromo-3-chloropropane (DBCP)	ug / Kg	ND (11)	ND (13)	ND (14)	ND (16)	ND (12)	ND (11)	ND (15)	ND (13)	ND (15)	ND (9.9)	ND (9.5)	ND (600)
1,2-Dibromoethane (Ethylene Dibromide)	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,2-Dichlorobenzene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,2-Dichloroethane	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,2-Dichloropropane	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,3-Dichlorobenzene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
1,4-Dichlorobenzene	ug / Kg	ND (5.7)	ND (6.4)	0.93 J	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	23 J
2-Butanone (Methyl Ethyl Ketone)	ug / Kg	ND (23)	ND (26)	36	ND (32)	ND (25)	ND (21)	ND (30)	ND (26)	ND (30)	ND (20)	ND (19)	ND (1200) U
2-Hexanone	ug / Kg	ND (23)	ND (26)	ND (28)	ND (32)	ND (25)	ND (21)	ND (30)	ND (26)	ND (30)	ND (20)	ND (19)	ND (1200)
4-Methyl-2-pentanone	ug / Kg	ND (23)	ND (26)	ND (28)	ND (32)	ND (25)	ND (21)	ND (30)	ND (26)	ND (30)	ND (20)	ND (19)	ND (1200)
Acetone	ug / Kg	ND (23) UJ	56 J	170 J	23 J	ND (25) U	ND (21) UJ	ND (30) UJ	ND (26) UJ	ND (30) UJ	ND (20) UJ	ND (19) UJ	ND (1200) UJ
Benzene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	31 J
Bromodichloromethane	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Bromoform	ug / Kg	ND (5.7)	ND (6.4) UJ	ND (6.9) UJ	ND (8) UJ	ND (6.2) UJ	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300) UJ
Bromomethane (Methyl Bromide)	ug / Kg	ND (5.7)	ND (6.4) UJ	ND (6.9) UJ	ND (8) UJ	ND (6.2) UJ	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Carbon disulfide	ug / Kg	ND (5.7)	ND (6.4)	8.2	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Carbon tetrachloride	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)

TABLE 1.1

SUMMARY OF VALIDATED SOIL DATA FROM AO1 4
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:	B-X219Y249	B-X243Y257	B-X243Y257	B-X243Y257	SD-X196Y272	B-X148Y233	B-X148Y233	B-X148Y233	B-X148Y233	B-X169Y248	B-X169Y248	B-X169Y248	
Sample ID:	S-022602-KMV-539	S-030502-MG-150	S-030502-MG-151	S-030502-MG-152	S-031402-JW-1429	S-022202-KMV-532	S-022202-KMV-533	S-022202-KMV-534	S-022202-KMV-535	S-022102-KMV-528	S-022102-KMV-529	S-022102-KMV-530	
Sample Date:	2/26/2002	3/5/2002	3/5/2002	3/5/2002	3/14/2002	2/22/2002	2/22/2002	2/22/2002	2/22/2002	2/21/2002	2/21/2002	2/21/2002	
Sample Depth (feet bgs)	(22-23)	(0-2)	(6-8)	(14-16)	(0-0.33)	(0-2)	(0-2)	(6-8)	(12-14)	(0-2)	(0-2)	(6-8)	
Other:							Duplicate				Duplicate		
Parameters	Units												
Chlorobenzene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Chloroethane	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Chloroform (Trichloromethane)	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Chloromethane (Methyl Chloride)	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4) UJ	ND (7.6) UJ	ND (6.5) UJ	ND (7.5) UJ	ND (4.9) UJ	ND (4.8) UJ	ND (300)
cis-1,2-Dichloroethene	ug / Kg	ND (2.9)	ND (3.2)	ND (3.4)	ND (4)	ND (3.1)	ND (2.7)	ND (3.8)	ND (3.3)	ND (3.8)	ND (2.5)	ND (2.4)	900
cis-1,3-Dichloropropene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Cyclohexane	ug / Kg	ND (11)	ND (13)	1.9 J	ND (16)	ND (12)	ND (11)	ND (15)	ND (13)	ND (15)	ND (9.9)	ND (9.5)	ND (600)
Dibromochloromethane	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Dichlorodifluoromethane (CFC-12)	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4) UJ	ND (7.6) UJ	ND (6.5) UJ	ND (7.5) UJ	ND (4.9) UJ	ND (4.8) UJ	ND (300)
Ethylbenzene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	19 J
Isopropylbenzene	ug / Kg	ND (5.7)	ND (6.4)	3.4 J	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Methyl acetate	ug / Kg	ND (11)	ND (13)	ND (14)	ND (16)	ND (12)	ND (11)	ND (15)	ND (13)	ND (15)	ND (9.9)	ND (9.5)	ND (600)
Methyl cyclohexane	ug / Kg	ND (11)	ND (13)	1.6 J	ND (16)	ND (12)	ND (11)	ND (15)	ND (13)	ND (15)	ND (9.9)	ND (9.5)	ND (600)
Methyl Tert Butyl Ether	ug / Kg	ND (23)	ND (26)	ND (28)	ND (32)	ND (25)	ND (21)	ND (30)	ND (26)	ND (30)	ND (20)	ND (19)	ND (1200)
Methylene chloride	ug / Kg	8.6	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	10	7.5 J	4.6 J	21	4.6 J	13	ND (300)
Styrene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Tetrachloroethene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	920
Toluene	ug / Kg	ND (5.7)	ND (6.4)	3.2 J	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	220 J
trans-1,2-Dichloroethene	ug / Kg	ND (2.9)	ND (3.2)	ND (3.4)	ND (4)	ND (3.1)	ND (2.7)	ND (3.8)	ND (3.3)	ND (3.8)	ND (2.5)	ND (2.4)	110 J
trans-1,3-Dichloropropene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Trichloroethene	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	280 J
Trichlorofluoromethane (CFC-11)	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Trifluorotrichloroethane (Freon 113)	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
Vinyl chloride	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	320
Xylene (total)	ug / Kg	ND (5.7)	ND (6.4)	ND (6.9)	ND (8)	ND (6.2)	ND (5.4)	ND (7.6)	ND (6.5)	ND (7.5)	ND (4.9)	ND (4.8)	ND (300)
General Chemistry													
Total Organic Carbon (TOC)	mg / Kg	-	-	-	-	-	-	-	-	-	-	-	-
Total Solids	%	84.9	76.1	86.5	80.2	77.7	88.8	91.7	76.8	71.8	95	93.5	90.2

U - Non-detect at associated value.
J - Estimated.
UJ = Non-detect. The associated value is estimated.

TABLE 1.1
SUMMARY OF VALIDATED SOIL DATA FROM AO14
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:	B-X169Y248	MW-X143Y245D	MW-X143Y245D	MW-X143Y245D
Sample ID:	S-022102-KMV-531	S-010702-KMV-501	S-010702-KMV-502	S-010702-KMV-503
Sample Date:	2/21/2002	1/7/2002	1/7/2002	1/7/2002
Sample Depth (feet bgs)	(22-24)	(0-2)	(0-2)	(6-8)
Other:			Duplicate	
Parameters	Units			
Metals				
Aluminum	mg / Kg	17100	7420	6440
Antimony	mg / Kg	ND (7.3)	ND (7.1) UJ	ND (6.8) UJ
Arsenic	mg / Kg	11.8	1.8	1.6
Barium	mg / Kg	64	871 J	232 J
Beryllium	mg / Kg	0.7	ND (0.59) U	ND (0.56) U
Cadmium	mg / Kg	0.43 J	0.88	0.46 J
Chromium Total	mg / Kg	31.2	27.4	33.0
Cobalt	mg / Kg	10.2	28.2	34.6
Copper	mg / Kg	17.6	194	161
Cyanide (amenable)	mg / Kg	ND (0.61)	ND (0.59)	ND (0.56)
Cyanide (total)	mg / Kg	ND (0.61)	ND (0.59)	ND (0.56)
Iron	mg / Kg	33900	6730	5590
Lead	mg / Kg	17.8	23.6	17.1
Manganese	mg / Kg	335	129	79.3
Mercury	mg / Kg	0.12	2.2	1.0
Nickel	mg / Kg	26.7	43.0	47.5
Selenium	mg / Kg	ND (0.61)	ND (0.59)	ND (0.56)
Silver	mg / Kg	ND (1.2)	0.23 J	0.37 J
Thallium	mg / Kg	ND (1.2) U	ND (1.2)	1.2
Vanadium	mg / Kg	53.9	5.7 J	7.5
Zinc	mg / Kg	42.1	131	61.4
PCBs				
Aroclor-1016 (PCB-1016)	ug / Kg	ND (40)	ND (3900)	ND (3700)
Aroclor-1221 (PCB-1221)	ug / Kg	ND (40)	ND (3900)	ND (3700)
Aroclor-1232 (PCB-1232)	ug / Kg	ND (40)	ND (3900)	ND (3700)
Aroclor-1242 (PCB-1242)	ug / Kg	ND (40)	ND (3900)	ND (3700)
Aroclor-1248 (PCB-1248)	ug / Kg	ND (40)	30000	36000
Aroclor-1254 (PCB-1254)	ug / Kg	62	ND (3900)	ND (3700)
Aroclor-1260 (PCB-1260)	ug / Kg	ND (40)	ND (3900)	ND (3700)
Semi - Volatiles				
2,2'-oxybis(1-Chloropropane) (bis(2-chloroisopropyl) ether)	ug / Kg	ND (400)	ND (390)	ND (370)
2,4,5-Trichlorophenol	ug / Kg	ND (400)	ND (390)	ND (370)
2,4,6-Trichlorophenol	ug / Kg	ND (400)	ND (390)	ND (370)
2,4-Dichlorophenol	ug / Kg	ND (400)	ND (390)	ND (370)
2,4-Dimethylphenol	ug / Kg	ND (400)	ND (390)	ND (370)
2,4-Dinitrophenol	ug / Kg	ND (1900)	ND (1900)	ND (1800)
2,4-Dinitrotoluene	ug / Kg	ND (400)	ND (390)	ND (370)
2,6-Dinitrotoluene	ug / Kg	ND (400)	ND (390)	ND (370)
2-Chloronaphthalene	ug / Kg	ND (400)	ND (390)	ND (370)
2-Chlorophenol	ug / Kg	ND (400)	ND (390)	ND (370)
2-Methylnaphthalene	ug / Kg	ND (400)	ND (390)	ND (370)
2-Methylphenol	ug / Kg	ND (400)	ND (390)	ND (370)
2-Nitroaniline	ug / Kg	ND (1900)	ND (1900)	ND (1800)
2-Nitrophenol	ug / Kg	ND (400)	ND (390)	ND (370)
3,3'-Dichlorobenzidine	ug / Kg	ND (1900)	ND (1900)	ND (1800)
3-Nitroaniline	ug / Kg	ND (1900)	ND (1900)	ND (1800)
4,6-Dinitro-2-methylphenol	ug / Kg	ND (1900)	ND (1900)	ND (1800)
4-Bromophenyl phenyl ether	ug / Kg	ND (400)	ND (390)	ND (370)
4-Chloro-3-methylphenol	ug / Kg	ND (400)	ND (390)	ND (370)
4-Chloroaniline	ug / Kg	ND (400)	ND (390)	ND (370)
4-Chlorophenyl phenyl ether	ug / Kg	ND (400)	ND (390)	ND (370)
4-Methylphenol	ug / Kg	ND (400)	ND (390)	ND (370)
4-Nitroaniline	ug / Kg	ND (1900)	ND (1900)	ND (1800)
4-Nitrophenol	ug / Kg	ND (1900)	ND (1900) UJ	ND (1800) UJ
Acenaphthene	ug / Kg	ND (400)	ND (390)	ND (370)
Acenaphthylene	ug / Kg	ND (400)	ND (390)	ND (370)
Acetophenone	ug / Kg	ND (400)	ND (390)	ND (370)
Anthracene	ug / Kg	ND (400)	100 J	ND (370)

TABLE 1.1

SUMMARY OF VALIDATED SOIL DATA FROM AO14
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:	B-X169Y248	MW-X143Y245D	MW-X143Y245D	MW-X143Y245D
Sample ID:	S-022102-KMV-531	S-010702-KMV-501	S-010702-KMV-502	S-010702-KMV-503
Sample Date:	2/21/2002	1/7/2002	1/7/2002	1/7/2002
Sample Depth (feet bgs)	(22-24)	(0-2)	(0-2)	(6-8)
Other:			Duplicate	
Parameters	Units			
Atrazine	ug / Kg	ND (400)	ND (390)	ND (370)
Benzaldehyde	ug / Kg	ND (400)	ND (390)	ND (370)
Benzo(a)anthracene	ug / Kg	ND (400)	370 J	ND (370)
Benzo(a)pyrene	ug / Kg	ND (400)	360 J	ND (370)
Benzo(b)fluoranthene	ug / Kg	ND (400)	410 J	71 J
Benzo(g,h,i)perylene	ug / Kg	ND (400)	220 J	ND (370)
Benzo(k)fluoranthene	ug / Kg	ND (400)	210 J	ND (370)
Biphenyl	ug / Kg	ND (400)	ND (390)	ND (370)
bis(2-Chloroethoxy)methane	ug / Kg	ND (400)	ND (390)	ND (370)
bis(2-Chloroethyl)ether	ug / Kg	ND (400)	ND (390)	ND (370)
bis(2-Ethylhexyl)phthalate	ug / Kg	ND (400)	69 J	ND (370)
Butyl benzylphthalate	ug / Kg	ND (400)	ND (390)	ND (370)
Caprolactam	ug / Kg	ND (400)	ND (390)	ND (370)
Carbazole	ug / Kg	ND (400)	72 J	ND (370)
Chrysene	ug / Kg	ND (400)	440	52 J
Dibenz(a,h)anthracene	ug / Kg	ND (400)	62 J	ND (370)
Dibenzofuran	ug / Kg	ND (400)	ND (390)	ND (370)
Diethyl phthalate	ug / Kg	ND (400)	ND (390)	ND (370)
Dimethyl phthalate	ug / Kg	ND (400)	ND (390)	ND (370)
Di-n-butylphthalate	ug / Kg	ND (400)	ND (390)	ND (370)
Di-n-octyl phthalate	ug / Kg	ND (400)	ND (390)	ND (370)
Fluoranthene	ug / Kg	ND (400)	960	77 J
Fluorene	ug / Kg	ND (400)	ND (390)	ND (370)
Hexachlorobenzene	ug / Kg	ND (400)	ND (390)	ND (370)
Hexachlorobutadiene	ug / Kg	ND (400)	ND (390)	ND (370)
Hexachlorocyclopentadiene	ug / Kg	ND (1900)	ND (1900)	ND (1800)
Hexachloroethane	ug / Kg	ND (400)	ND (390)	ND (370)
Indeno(1,2,3-cd)pyrene	ug / Kg	ND (400)	210 J	ND (370)
Isophorone	ug / Kg	ND (400)	ND (390)	ND (370)
Naphthalene	ug / Kg	ND (400)	ND (390)	ND (370)
Nitrobenzene	ug / Kg	ND (400)	ND (390)	ND (370)
N-Nitrosodi-n-propylamine	ug / Kg	ND (400)	ND (390)	ND (370)
N-Nitrosodiphenylamine	ug / Kg	ND (400)	ND (390)	ND (370)
Pentachlorophenol	ug / Kg	ND (400)	ND (390)	ND (370)
Phenanthrene	ug / Kg	ND (400)	440	ND (370)
Phenol	ug / Kg	ND (400)	70 J	300 J
Pyrene	ug / Kg	ND (400)	610	ND (370)
Volatiles				
1,1,1-Trichloroethane	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,1,2,2-Tetrachloroethane	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,1,2-Trichloroethane	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,1-Dichloroethane	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,1-Dichloroethene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,2,4-Trichlorobenzene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,2-Dibromo-3-chloropropane (DBCP)	ug / Kg	ND (11)	ND (9.5) UJ	ND (9.3)
1,2-Dibromoethane (Ethylene Dibromide)	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,2-Dichlorobenzene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,2-Dichloroethane	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,2-Dichloropropane	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,3-Dichlorobenzene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
1,4-Dichlorobenzene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
2-Butanone (Methyl Ethyl Ketone)	ug / Kg	3 J	4 J	3.6 J
2-Hexanone	ug / Kg	ND (22)	ND (19)	ND (19)
4-Methyl-2-pentanone	ug / Kg	ND (22)	ND (19)	ND (19)
Acetone	ug / Kg	ND (22) UJ	ND (34) U	ND (21) U
Benzene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
Bromodichloromethane	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
Bromoform	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
Bromomethane (Methyl Bromide)	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
Carbon disulfide	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)
Carbon tetrachloride	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)

TABLE 1.1
SUMMARY OF VALIDATED SOIL DATA FROM AO14
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:		B-X169Y248	MW-X143Y245D	MW-X143Y245D	MW-X143Y245D
Sample ID:		S-022102-KMV-531	S-010702-KMV-501	S-010702-KMV-502	S-010702-KMV-503
Sample Date:		2/21/2002	1/7/2002	1/7/2002	1/7/2002
Sample Depth (feet bgs)		(22-24)	(0-2)	(0-2)	(6-8)
Other:				Duplicate	
Parameters	Units				
Chlorobenzene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Chloroethane	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Chloroform (Trichloromethane)	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Chloromethane (Methyl Chloride)	ug / Kg	ND (5.5) UJ	ND (4.8)	ND (4.7)	ND (5.4)
cis-1,2-Dichloroethene	ug / Kg	ND (2.8)	ND (2.4)	ND (2.3)	ND (2.7)
cis-1,3-Dichloropropene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Cyclohexane	ug / Kg	ND (11)	ND (9.5)	ND (9.3)	ND (11)
Dibromochloromethane	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Dichlorodifluoromethane (CFC-12)	ug / Kg	ND (5.5) UJ	ND (4.8) U	ND (4.7)	ND (5.4)
Ethylbenzene	ug / Kg	ND (5.5)	ND (4.8)	1 J	ND (5.4)
Isopropylbenzene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Methyl acetate	ug / Kg	ND (11)	2.3 J	ND (9.3)	ND (11)
Methyl cyclohexane	ug / Kg	ND (11)	ND (9.5)	ND (9.3)	ND (11)
Methyl Tert Butyl Ether	ug / Kg	ND (22)	ND (19)	ND (19)	ND (22)
Methylene chloride	ug / Kg	7	ND (4.8)	ND (4.7)	ND (5.4)
Styrene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Tetrachloroethene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Toluene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
trans-1,2-Dichloroethene	ug / Kg	ND (2.8)	ND (2.4)	ND (2.3)	ND (2.7)
trans-1,3-Dichloropropene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Trichloroethene	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Trichlorofluoromethane (CFC-11)	ug / Kg	ND (5.5)	ND (4.8)	ND (4.7)	ND (5.4)
Trifluorotrichloroethane (Freon 113)	ug / Kg	ND (5.5)	ND (4.8) UJ	ND (4.7)	ND (5.4)
Vinyl chloride	ug / Kg	6.9	ND (4.8)	ND (4.7)	ND (5.4)
Xylene (total)	ug / Kg	ND (5.5)	3.3 J	6.7	ND (5.4)
General Chemistry					
Total Organic Carbon (TOC)	mg / Kg	-	5900 J	2700 J	-
Total Solids	%	82.5	85.0	88.8	72.5

U - Non-detect at associated value.
J - Estimated.
UJ = Non-detect. The associated value is estimated.

TABLE 1.2

**SUMMARY OF VALIDATED SURFACE WATER DATA FROM AOI 4
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS**

Sample Location:**SW-X216Y274****SW-X216Y274****Sample ID:****SW-031502-JW-1428****SW-052102-JW-5042****Sample Date:****3/15/2002****5/21/2002****Parameters****Units****Metals**

Aluminum	mg/L	9.7	56.2
Antimony	mg/L	ND (0.060)	0.0043 J
Arsenic	mg/L	0.015	0.081
Barium	mg/L	0.32	0.89
Beryllium	mg/L	ND (0.0050)	0.0014 J
Cadmium	mg/L	ND (0.0050)	ND (0.005)
Chromium Total	mg/L	0.014	0.087
Cobalt	mg/L	0.022 J	0.12
Copper	mg/L	0.077	0.38
Cyanide (amenable)	mg/L	ND (0.010)	ND (0.01)
Cyanide (total)	mg/L	ND (0.010)	ND (0.01)
Iron	mg/L	72.5	306
Lead	mg/L	0.0094	0.067
Manganese	mg/L	12.7	57.4
Mercury	mg/L	0.0010	0.00058
Nickel	mg/L	0.025 J	0.15
Selenium	mg/L	ND (0.0050)	ND (0.025)
Silver	mg/L	ND (0.010)	0.0031 J
Thallium	mg/L	0.0098 J	ND (0.001)
Vanadium	mg/L	0.016 J	0.096
Zinc	mg/L	0.071	0.42

Metals (Dissolved)

Aluminum (Dissolved)	mg/L	ND (0.20)	ND (0.2)
Antimony (Dissolved)	mg/L	ND (0.060)	ND (0.06)
Arsenic (Dissolved)	mg/L	ND (0.010)	ND (0.01)
Barium (Dissolved)	mg/L	0.085 J	0.093 J
Beryllium (Dissolved)	mg/L	ND (0.0050)	ND (0.005)
Cadmium (Dissolved)	mg/L	ND (0.0050)	ND (0.005)
Chromium Total (Dissolved)	mg/L	ND (0.010)	ND (0.01)
Cobalt (Dissolved)	mg/L	ND (0.050)	ND (0.05)
Copper (Dissolved)	mg/L	ND (0.025)	ND (0.025)
Iron (Dissolved)	mg/L	ND (0.10)	ND (0.1)
Lead (Dissolved)	mg/L	ND (0.0030)	ND (0.003)
Manganese (Dissolved)	mg/L	0.26	0.71
Mercury (Dissolved)	mg/L	ND (0.00020) UJ	ND (0.0002)
Nickel (Dissolved)	mg/L	ND (0.040)	ND (0.04)
Selenium (Dissolved)	mg/L	ND (0.0050)	ND (0.005)
Silver (Dissolved)	mg/L	ND (0.010)	ND (0.01)

TABLE 1.2

**SUMMARY OF VALIDATED SURFACE WATER DATA FROM AOI 4
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS**

Sample Location:**Sample ID:****Sample Date:****SW-X216Y274****SW-031502-JW-1428****3/15/2002****SW-X216Y274****SW-052102-JW-5042****5/21/2002**

Parameters	Units		
Thallium (Dissolved)	mg / L	0.0085 J	ND (0.001)
Vanadium (Dissolved)	mg / L	ND (0.050)	ND (0.05)
PCBs			
Aroclor-1016 (PCB-1016)	ug / L	ND (0.20) UJ	ND (1) UJ
Aroclor-1221 (PCB-1221)	ug / L	ND (0.20) UJ	ND (1) UJ
Aroclor-1232 (PCB-1232)	ug / L	ND (0.40) UJ	ND (1) UJ
Aroclor-1242 (PCB-1242)	ug / L	ND (0.20) UJ	ND (1) UJ
Aroclor-1248 (PCB-1248)	ug / L	2.4 J	4.6 J
Aroclor-1254 (PCB-1254)	ug / L	ND (0.20) UJ	ND (1) UJ
Aroclor-1260 (PCB-1260)	ug / L	ND (0.20) UJ	ND (1) UJ
PCBs (dissolved)			
Aroclor-1016 (PCB-1016), dissolved	ug / L	ND (0.20)	ND (0.2)
Aroclor-1221 (PCB-1221), dissolved	ug / L	ND (0.20)	ND (0.2)
Aroclor-1232 (PCB-1232), dissolved	ug / L	ND (0.40)	ND (0.4)
Aroclor-1242 (PCB-1242), dissolved	ug / L	ND (0.20)	ND (0.2)
Aroclor-1248 (PCB-1248), dissolved	ug / L	ND (0.20)	ND (0.2)
Aroclor-1254 (PCB-1254), dissolved	ug / L	ND (0.20)	ND (0.2)
Aroclor-1260 (PCB-1260), dissolved	ug / L	ND (0.20)	ND (0.2)
Semi - Volatiles			
2,2'-oxybis(1-Chloropropane) (bis(2-chloroi	ug / L	ND (10)	ND (10)
2,4,5-Trichlorophenol	ug / L	ND (10)	ND (10)
2,4,6-Trichlorophenol	ug / L	ND (10)	ND (10)
2,4-Dichlorophenol	ug / L	ND (10)	ND (10)
2,4-Dimethylphenol	ug / L	ND (10)	ND (10)
2,4-Dinitrophenol	ug / L	ND (50)	ND (50)
2,4-Dinitrotoluene	ug / L	ND (10)	ND (10)
2,6-Dinitrotoluene	ug / L	ND (10)	ND (10)
2-Chloronaphthalene	ug / L	ND (10)	ND (10)
2-Chlorophenol	ug / L	ND (10)	ND (10)
2-Methylnaphthalene	ug / L	ND (10)	ND (10)
2-Methylphenol	ug / L	ND (10)	ND (10)
2-Nitroaniline	ug / L	ND (50)	ND (50)
2-Nitrophenol	ug / L	ND (10)	ND (10)
3,3'-Dichlorobenzidine	ug / L	ND (50)	ND (50)
3-Nitroaniline	ug / L	ND (50)	ND (50)
4,6-Dinitro-2-methylphenol	ug / L	ND (50)	ND (50)

TABLE 1.2

**SUMMARY OF VALIDATED SURFACE WATER DATA FROM AOI 4
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS**

Sample Location:**SW-X216Y274****SW-X216Y274****Sample ID:****SW-031502-JW-1428****SW-052102-JW-5042****Sample Date:****3/15/2002****5/21/2002**

Parameters	Units		
4-Bromophenyl phenyl ether	ug / L	ND (10)	ND (10)
4-Chloro-3-methylphenol	ug / L	ND (10)	ND (10)
4-Chloroaniline	ug / L	ND (10)	ND (10)
4-Chlorophenyl phenyl ether	ug / L	ND (10)	ND (10)
4-Methylphenol	ug / L	ND (10)	ND (10)
4-Nitroaniline	ug / L	ND (50)	ND (50) UJ
4-Nitrophenol	ug / L	ND (50)	ND (50)
Acenaphthene	ug / L	ND (10)	ND (10)
Acenaphthylene	ug / L	ND (10)	ND (10)
Acetophenone	ug / L	ND (10)	ND (10)
Anthracene	ug / L	ND (10)	ND (10)
Atrazine	ug / L	ND (10)	ND (10)
Benzaldehyde	ug / L	ND (10)	ND (10)
Benzo(a)anthracene	ug / L	ND (10)	ND (10)
Benzo(a)pyrene	ug / L	ND (10)	ND (10)
Benzo(b)fluoranthene	ug / L	ND (10)	ND (10)
Benzo(g,h,i)perylene	ug / L	ND (10)	ND (10)
Benzo(k)fluoranthene	ug / L	ND (10)	ND (10)
Biphenyl	ug / L	ND (10)	ND (10)
bis(2-Chloroethoxy)methane	ug / L	ND (10)	ND (10)
bis(2-Chloroethyl)ether	ug / L	ND (10)	ND (10)
bis(2-Ethylhexyl)phthalate	ug / L	ND (10)	ND (10)
Butyl benzylphthalate	ug / L	ND (10)	ND (10)
Caprolactam	ug / L	ND (10)	ND (10)
Carbazole	ug / L	ND (10)	ND (10)
Chrysene	ug / L	ND (10)	ND (10)
Dibenz(a,h)anthracene	ug / L	ND (10)	ND (10)
Dibenzofuran	ug / L	ND (10)	ND (10)
Diethyl phthalate	ug / L	ND (10)	ND (10)
Dimethyl phthalate	ug / L	ND (10)	ND (10)
Di-n-butylphthalate	ug / L	ND (10)	ND (10)
Di-n-octyl phthalate	ug / L	ND (10)	ND (10)
Fluoranthene	ug / L	ND (10)	ND (10)
Fluorene	ug / L	ND (10)	ND (10)
Hexachlorobenzene	ug / L	ND (10)	ND (10)
Hexachlorobutadiene	ug / L	ND (10)	ND (10)
Hexachlorocyclopentadiene	ug / L	ND (50)	ND (50)
Hexachloroethane	ug / L	ND (10)	ND (10)
Indeno(1,2,3-cd)pyrene	ug / L	ND (10)	ND (10)
Isophorone	ug / L	ND (10)	ND (10)
Naphthalene	ug / L	ND (10)	ND (10)
Nitrobenzene	ug / L	ND (10)	ND (10)

TABLE 1.2

**SUMMARY OF VALIDATED SURFACE WATER DATA FROM AOI 4
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS**

Sample Location:**SW-X216Y274****SW-X216Y274****Sample ID:****SW-031502-JW-1428****SW-052102-JW-5042****Sample Date:****3/15/2002****5/21/2002**

Parameters	Units		
N-Nitrosodi-n-propylamine	ug / L	ND (10)	ND (10)
N-Nitrosodiphenylamine	ug / L	ND (10)	ND (10)
Pentachlorophenol	ug / L	ND (10)	ND (10)
Phenanthrene	ug / L	ND (10)	ND (10)
Phenol	ug / L	ND (10)	ND (10)
Pyrene	ug / L	ND (10)	ND (10)
Volatiles			
1,1,1-Trichloroethane	ug / L	ND (1.0)	ND (1)
1,1,2,2-Tetrachloroethane	ug / L	ND (1.0)	ND (1)
1,1,2-Trichloroethane	ug / L	ND (1.0)	ND (1)
1,1-Dichloroethane	ug / L	ND (1.0)	ND (1)
1,1-Dichloroethene	ug / L	ND (1.0)	ND (1)
1,2,4-Trichlorobenzene	ug / L	ND (1.0)	ND (1)
1,2-Dibromo-3-chloropropane (DBCP)	ug / L	ND (2.0)	ND (2)
1,2-Dibromoethane (Ethylene Dibromide)	ug / L	ND (1.0)	ND (1)
1,2-Dichlorobenzene	ug / L	ND (1.0)	ND (1)
1,2-Dichloroethane	ug / L	ND (1.0)	ND (1)
1,2-Dichloropropane	ug / L	ND (1.0)	ND (1)
1,3-Dichlorobenzene	ug / L	0.15 J	ND (1)
1,4-Dichlorobenzene	ug / L	0.29 J	0.27 J
2-Butanone (Methyl Ethyl Ketone)	ug / L	ND (10) UJ	ND (10)
2-Hexanone	ug / L	ND (10) UJ	ND (10) UJ
4-Methyl-2-pentanone	ug / L	ND (10)	ND (10)
Acetone	ug / L	ND (10) UJ	ND (10) UJ
Benzene	ug / L	ND (1.0)	ND (1)
Bromodichloromethane	ug / L	ND (1.0)	ND (1)
Bromoform	ug / L	ND (1.0)	ND (1)
Bromomethane (Methyl Bromide)	ug / L	ND (1.0)	ND (1)
Carbon disulfide	ug / L	ND (1.0)	0.37 J
Carbon tetrachloride	ug / L	ND (1.0)	ND (1)
Chlorobenzene	ug / L	0.18 J	0.29 J
Chloroethane	ug / L	ND (1.0)	ND (1)
Chloroform (Trichloromethane)	ug / L	ND (1.0)	ND (1)
Chloromethane (Methyl Chloride)	ug / L	ND (1.0) UJ	ND (1)
cis-1,2-Dichloroethene	ug / L	ND (0.50)	ND (0.5)
cis-1,3-Dichloropropene	ug / L	ND (1.0)	ND (1)
Cyclohexane	ug / L	ND (1.0)	ND (1)
Dibromochloromethane	ug / L	ND (1.0)	ND (1)
Dichlorodifluoromethane (CFC-12)	ug / L	ND (1.0) UJ	ND (1)
Ethylbenzene	ug / L	ND (1.0)	ND (1)

TABLE 1.2

**SUMMARY OF VALIDATED SURFACE WATER DATA FROM AOI 4
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS**

Sample Location:**SW-X216Y274****SW-X216Y274****Sample ID:****SW-031502-JW-1428****SW-052102-JW-5042****Sample Date:****3/15/2002****5/21/2002**

Parameters	Units		
Isopropylbenzene	ug / L	ND (1.0)	ND (1)
Methyl acetate	ug / L	ND (10)	ND (10)
Methyl cyclohexane	ug / L	ND (1.0)	ND (1)
Methyl Tert Butyl Ether	ug / L	ND (5.0)	ND (5)
Methylene chloride	ug / L	ND (1.0)	ND (1)
Styrene	ug / L	ND (1.0)	ND (1)
Tetrachloroethene	ug / L	ND (1.0)	ND (1)
Toluene	ug / L	ND (1.0)	ND (1)
trans-1,2-Dichloroethene	ug / L	ND (0.50)	ND (0.5)
trans-1,3-Dichloropropene	ug / L	ND (1.0)	ND (1)
Trichloroethene	ug / L	ND (1.0)	ND (1)
Trichlorofluoromethane (CFC-11)	ug / L	ND (1.0)	ND (1)
Trifluorotrichloroethane (Freon 113)	ug / L	ND (1.0)	ND (1)
Vinyl chloride	ug / L	ND (1.0)	ND (1)
Xylene (total)	ug / L	ND (1.0)	ND (1)
General Chemistry			
Ammonia	mg / L	-	0.4
pH (water)	s.u.	-	8
Total Dissolved Solids (TDS)	mg / L	-	890
Total Kjeldahl Nitrogen (TKN)	mg / L	-	2
Total Suspended Solids (TSS)	mg / L	-	960

U - Non-detect at associated value.

J - Estimated.

UJ = Non-detect. The associated value is estimated.

TABLE 1.3

SUMMARY OF VALIDATED SEDIMENT DATA FROM AOI 4
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:

Sample ID:

Sample Date:

SD-X214Y275

SD-031402-JW-1428

3/14/2002

Parameters	Units	
Metals		
Aluminum	mg/Kg	4970
Antimony	mg/Kg	ND (17.1)
Arsenic	mg/Kg	11.6
Barium	mg/Kg	112
Beryllium	mg/Kg	ND (1.4) U
Cadmium	mg/Kg	ND (1.4)
Chromium Total	mg/Kg	15.7
Cobalt	mg/Kg	26.6
Copper	mg/Kg	93.1
Cyanide (amenable)	mg/Kg	ND (1.4)
Cyanide (total)	mg/Kg	ND (1.4)
Iron	mg/Kg	39600
Lead	mg/Kg	16.3
Manganese	mg/Kg	6840
Mercury	mg/Kg	ND (0.29) U
Nickel	mg/Kg	30.8
Selenium	mg/Kg	ND (1.4)
Silver	mg/Kg	1.0 J
Thallium	mg/Kg	ND (2.9)
Vanadium	mg/Kg	9.0 J
Zinc	mg/Kg	68.0
PCBs		
Aroclor-1016 (PCB-1016)	ug/Kg	ND (1900)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (1900)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (1900)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (1900)
Aroclor-1248 (PCB-1248)	ug/Kg	18000
Aroclor-1254 (PCB-1254)	ug/Kg	ND (1900)
Aroclor-1260 (PCB-1260)	ug/Kg	1800 J
Semi - Volatiles		
2,2'-oxybis(1-Chloropropane) (bis(2-chloroisopropyl) eth	ug/Kg	ND (940)
2,4,5-Trichlorophenol	ug/Kg	ND (940)
2,4,6-Trichlorophenol	ug/Kg	ND (940)
2,4-Dichlorophenol	ug/Kg	ND (940)
2,4-Dimethylphenol	ug/Kg	ND (940)
2,4-Dinitrophenol	ug/Kg	ND (4600)
2,4-Dinitrotoluene	ug/Kg	ND (940)
2,6-Dinitrotoluene	ug/Kg	ND (940)

TABLE 1.3

SUMMARY OF VALIDATED SEDIMENT DATA FROM AOI 4
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:

SD-X214Y275

Sample ID:

SD-031402-JW-1428

Sample Date:

3/14/2002

Parameters	Units	
2-Chloronaphthalene	ug/Kg	ND (940)
2-Chlorophenol	ug/Kg	ND (940)
2-Methylnaphthalene	ug/Kg	ND (940)
2-Methylphenol	ug/Kg	ND (940)
2-Nitroaniline	ug/Kg	ND (4600)
2-Nitrophenol	ug/Kg	ND (940)
3,3'-Dichlorobenzidine	ug/Kg	ND (4600)
3-Nitroaniline	ug/Kg	ND (4600)
4,6-Dinitro-2-methylphenol	ug/Kg	ND (4600)
4-Bromophenyl phenyl ether	ug/Kg	ND (940)
4-Chloro-3-methylphenol	ug/Kg	ND (940)
4-Chloroaniline	ug/Kg	ND (940)
4-Chlorophenyl phenyl ether	ug/Kg	ND (940)
4-Methylphenol	ug/Kg	ND (940)
4-Nitroaniline	ug/Kg	ND (4600)
4-Nitrophenol	ug/Kg	ND (4600)
Acenaphthene	ug/Kg	ND (940)
Acenaphthylene	ug/Kg	ND (940)
Acetophenone	ug/Kg	ND (940)
Anthracene	ug/Kg	ND (940)
Atrazine	ug/Kg	ND (940)
Benzaldehyde	ug/Kg	ND (940)
Benzo(a)anthracene	ug/Kg	ND (940)
Benzo(a)pyrene	ug/Kg	ND (940)
Benzo(b)fluoranthene	ug/Kg	ND (940)
Benzo(g,h,i)perylene	ug/Kg	ND (940)
Benzo(k)fluoranthene	ug/Kg	ND (940)
Biphenyl	ug/Kg	ND (940)
bis(2-Chloroethoxy)methane	ug/Kg	ND (940)
bis(2-Chloroethyl)ether	ug/Kg	ND (940)
bis(2-Ethylhexyl)phthalate	ug/Kg	ND (940)
Butyl benzylphthalate	ug/Kg	ND (940)
Caprolactam	ug/Kg	ND (940)
Carbazole	ug/Kg	ND (940)
Chrysene	ug/Kg	ND (940)
Dibenz(a,h)anthracene	ug/Kg	ND (940)
Dibenzofuran	ug/Kg	ND (940)
Diethyl phthalate	ug/Kg	ND (940)
Dimethyl phthalate	ug/Kg	ND (940)
Di-n-butylphthalate	ug/Kg	ND (940)
Di-n-octyl phthalate	ug/Kg	ND (940)
Fluoranthene	ug/Kg	ND (940)

TABLE 1.3

SUMMARY OF VALIDATED SEDIMENT DATA FROM AOI 4
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:

Sample ID:

Sample Date:

SD-X214Y275

SD-031402-JW-1428

3/14/2002

<i>Parameters</i>	<i>Units</i>	
Fluorene	ug/Kg	ND (940)
Hexachlorobenzene	ug/Kg	ND (940)
Hexachlorobutadiene	ug/Kg	ND (940)
Hexachlorocyclopentadiene	ug/Kg	ND (4600)
Hexachloroethane	ug/Kg	ND (940)
Indeno(1,2,3-cd)pyrene	ug/Kg	ND (940)
Isophorone	ug/Kg	ND (940)
Naphthalene	ug/Kg	ND (940)
Nitrobenzene	ug/Kg	ND (940)
N-Nitrosodi-n-propylamine	ug/Kg	ND (940)
N-Nitrosodiphenylamine	ug/Kg	ND (940)
Pentachlorophenol	ug/Kg	ND (940)
Phenanthrene	ug/Kg	ND (940)
Phenol	ug/Kg	ND (940)
Pyrene	ug/Kg	ND (940)
<i>Volatiles</i>		
1,1,1-Trichloroethane	ug/Kg	ND (19)
1,1,2,2-Tetrachloroethane	ug/Kg	ND (19)
1,1,2-Trichloroethane	ug/Kg	ND (19)
1,1-Dichloroethane	ug/Kg	ND (19)
1,1-Dichloroethene	ug/Kg	ND (19)
1,2,4-Trichlorobenzene	ug/Kg	ND (19)
1,2-Dibromo-3-chloropropane (DBCP)	ug/Kg	ND (39)
1,2-Dibromoethane (Ethylene Dibromide)	ug/Kg	ND (19)
1,2-Dichlorobenzene	ug/Kg	ND (19)
1,2-Dichloroethane	ug/Kg	ND (19)
1,2-Dichloropropane	ug/Kg	ND (19)
1,3-Dichlorobenzene	ug/Kg	3.1 J
1,4-Dichlorobenzene	ug/Kg	5.5 J
2-Butanone (Methyl Ethyl Ketone)	ug/Kg	ND (77)
2-Hexanone	ug/Kg	ND (77)
4-Methyl-2-pentanone	ug/Kg	ND (77)
Acetone	ug/Kg	ND (77)
Benzene	ug/Kg	ND (19)
Bromodichloromethane	ug/Kg	ND (19)
Bromoform	ug/Kg	ND (19)
Bromomethane (Methyl Bromide)	ug/Kg	ND (19)
Carbon disulfide	ug/Kg	ND (19)
Carbon tetrachloride	ug/Kg	ND (19)
Chlorobenzene	ug/Kg	ND (19)
Chloroethane	ug/Kg	ND (19)

TABLE 1.3

SUMMARY OF VALIDATED SEDIMENT DATA FROM AOI 4
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, ILLINOIS

Sample Location:

Sample ID:

Sample Date:

SD-X214Y275

SD-031402-JW-1428

3/14/2002

<i>Parameters</i>	<i>Units</i>	
Chloroform (Trichloromethane)	ug/Kg	ND (19)
Chloromethane (Methyl Chloride)	ug/Kg	ND (19)
cis-1,2-Dichloroethene	ug/Kg	ND (9.6)
cis-1,3-Dichloropropene	ug/Kg	ND (19)
Cyclohexane	ug/Kg	ND (39)
Dibromochloromethane	ug/Kg	ND (19)
Dichlorodifluoromethane (CFC-12)	ug/Kg	ND (19)
Ethylbenzene	ug/Kg	ND (19)
Isopropylbenzene	ug/Kg	ND (19)
Methyl acetate	ug/Kg	41
Methyl cyclohexane	ug/Kg	ND (39)
Methyl Tert Butyl Ether	ug/Kg	ND (77)
Methylene chloride	ug/Kg	ND (19)
Styrene	ug/Kg	ND (19)
Tetrachloroethene	ug/Kg	ND (19)
Toluene	ug/Kg	ND (19)
trans-1,2-Dichloroethene	ug/Kg	ND (9.6)
trans-1,3-Dichloropropene	ug/Kg	ND (19)
Trichloroethene	ug/Kg	ND (19)
Trichlorofluoromethane (CFC-11)	ug/Kg	ND (19)
Trifluorotrichloroethane (Freon 113)	ug/Kg	ND (19)
Vinyl chloride	ug/Kg	ND (19)
Xylene (total)	ug/Kg	ND (19)
<i>General Chemistry</i>		
Total Organic Carbon (TOC)	mg/Kg	49000
Total Solids	%	35.0

U - Non-detect at associated value.

J - Estimated.

UJ = Non-detect. The associated value is estimated.

APPENDIX A

SOIL BORING LOGS



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: MW-X143Y245S

PROJECT NUMBER: 013968

DATE COMPLETED: June 11, 2002

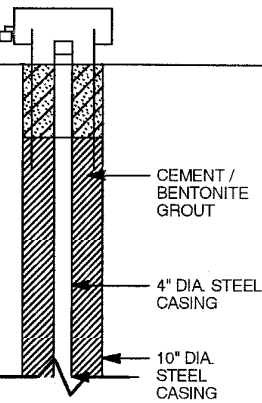
CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 10-INCH TRI-CONE & HQ CORE

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	N' VALUE
	TOP OF RISE GROUND SURFACE	692.9 690.4					
2	SW/GW SAND AND GRAVEL (FILL), little silt, dense, fine to medium grained, well graded, brown, moist, glass	688.4					
4	SP-SAND (FILL), compact, fine grained, poorly graded, dark brown/dark gray, moist	685.9					
6	CL-CLAY, little silt, very stiff, low plasticity, 5YR 4/6, (yellowish red), moist						
8	END OF OVERBURDEN HOLE @ 8.5ft BGS						
10							
12							
14							
16							
18							
20							
22							
24							
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 13968 20030522.GPJ CRA_CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 2 of 2

PROJECT NAME: GM BEDFORD RFI

PROJECT NUMBER: 013968

CLIENT: GENERAL MOTORS CORPORATION

LOCATION: BEDFORD, INDIANA

DRILLING CONTRACTOR: RDNP

HOLE DESIGNATION: MW-X143Y245S

DATE COMPLETED: June 11, 2002

DRILLING METHOD: 10-INCH TRI-CONE & HQ CORE

FIELD PERSONNEL: K. VANDER MEULEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	RQD %
8	LIMESTONE (ST. LOUIS FORMATION), fine grained (micritic), calcite, thin bedded, gray, interbedded with calcareous shale lenses - horizontal fracture at 11.4ft BGS - 8-inch of porous rock at 11.5ft BGS - horizontal fracture at 12.2ft BGS - horizontal fracture at 13.4ft BGS - 4-inch near vertical fracture at 13.6ft BGS - horizontal fracture at 14.3ft BGS - horizontal fracture at 16.1ft BGS - horizontal fracture at 16.3ft BGS - horizontal fracture at 16.5ft BGS - horizontal fracture at 17.1ft BGS - styloite at 17.4ft BGS - open styloite at 18.4ft BGS - horizontal fracture at 20.8ft BGS - horizontal fracture at 21.4ft BGS - horizontal fracture at 21.7ft BGS - horizontal fracture at 22.8ft BGS - horizontal fracture at 23.2ft BGS - styloite at 23.3ft BGS - open styloite at 24.5ft BGS - horizontal fracture at 24.7ft BGS	681.9		1	100	95
10						
12						
14						
16						
18						
20						
22						
24						
26						
28	LIMESTONE (SALEM FORMATION), granular, thick bedding, medium to coarse grained (comprised mostly of micro fossils and fossil fragments), massive, calcite, oolitic in texture, light gray - horizontal fracture at 27.3ft BGS END OF BOREHOLE @ 27.6ft BGS	664.9 662.8		2	100	100
30						
32						
34						
36						
38						
40						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

BEDROCK LOG 13968_20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 7

PROJECT NAME: GM BEDFORD RFI

PROJECT NUMBER: 013968

CLIENT: GENERAL MOTORS CORPORATION

LOCATION: BEDFORD, INDIANA

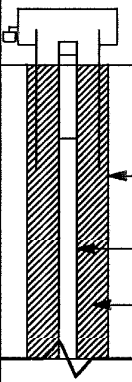
DRILLING CONTRACTOR: RDNP

HOLE DESIGNATION: MW-X143Y245D

DATE COMPLETED: April 2, 2002

DRILLING METHOD: 10-INCH TRI-CONE & HQ CORE

FIELD PERSONNEL: K. VANDER MEULEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	N' VALUE	PID (ppm)
	TOP OF RISE GROUND SURFACE	694.1 690.2						
	SW-GW - SAND and GRAVEL (Fill), little silt, dense fine to medium grained, well graded, brown, moist, glass.			1		1.7	35	0.0
2	SP - SAND (Fill), compact, fine grained, poorly graded, dark brown/dark grey, moist.	688.2		2		1.5	13	0.0
4	CL - CLAY with silt, very stiff, low plasticity, moist, 5YR4/6 yellowish red.	685.7		3		1.3	19	0.0
6				4		2.0	15	0.0
8	END OF OVERBURDEN HOLE @ 8.0ft BGS							
10								
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



GRAIN SIZE ANALYSIS



OVERBURDEN LOG 13968 20030522.GPJ GPA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 2 of 7

PROJECT NAME: GM BEDFORD RFI

PROJECT NUMBER: 013968

CLIENT: GENERAL MOTORS CORPORATION

LOCATION: BEDFORD, INDIANA

DRILLING CONTRACTOR: RDNP

HOLE DESIGNATION: MW-X143Y245D

DATE COMPLETED: April 2, 2002

DRILLING METHOD: 10-INCH TRI-CONE & HQ CORE

FIELD PERSONNEL: K. VANDER MEULEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	ROD %
8	LIMESTONE (ST. LOUIS FORMATION), fine grained (micritic), interbedded with calcareous shale lenses, thinly bedded, light blue/grey.	682.2	CEMENT / BENTONITE GROUT			
10	- porous at 10.5ft BGS			1	80	80
12	- vugs at 11.2ft BGS		10" DIA. HOLE			
14	- 1" clay seam, water loss at 11.3ft BGS					
16	- 4" vug with clay filling at 15.1ft BGS		CEMENT / BENTONITE GROUT			
18	- 3" large horizontal fracture with little clay filling at 16.3ft BGS			2	98	93
20	- medium horizontal fracture at 17.2ft BGS					
22	- medium horizontal fracture at 18.3ft BGS					
24	- medium horizontal fracture at 21.0ft BGS		4" DIA. STEEL CASING			
26	- styloite at 23.2ft BGS	664.8				
28	- 1/2" horizontal fracture at 24.4ft BGS		4" DIA. HQ COREHOLE			
30	LIMESTONE (SALEM FORMATION), 1/2" horizontal fracture, grannular, thick bedding (medium to coarse grained (comprised mostly of micro fossils and fossil fragments)), oolitic in texture, calcarenite			3	100	100
32	- thin horizontal fracture at 28.0ft BGS					
34	- 3.5" section of open vugs at 28.6ft BGS					
36	- 2" horizontal fracture at 30.9ft BGS					
38	- styloite at 32.6ft BGS					
40	- styloite at 33.8ft BGS					
42	- 1/2" thick open horizontal styloite at 38.9ft BGS			4	100	100
44	- styloite at 40.5ft BGS					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



GRAIN SIZE ANALYSIS



BEDROCK LOG 19868_20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 3 of 7

PROJECT NAME: GM BEDFORD RFI

PROJECT NUMBER: 013968

CLIENT: GENERAL MOTORS CORPORATION

LOCATION: BEDFORD, INDIANA

DRILLING CONTRACTOR: RDNP

HOLE DESIGNATION: MW-X143Y245D

DATE COMPLETED: April 2, 2002

DRILLING METHOD: 10-INCH TRI-CONE & HQ CORE

FIELD PERSONNEL: K. VANDER MEULEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	RQD %
42	- styloite at 41.4ft BGS					
44						
46	- open styloite at 45.2ft BGS					
48				5	100	100
50	- styloite at 50.7ft BGS					
52						
54						
56			4" DIA. HQ COREHOLE			
58	- styloite at 58.8ft BGS			6	100	100
60						
62	- styloite at 62.8ft BGS					
64	- 26' no fractures, have fossils at 63.5ft BGS					
66	- styloite, horizontal at 65.1ft BGS					
68	- styloite, horizontal at 67.2ft BGS			7	100	100
70						
72	- styloite, horizontal at 70.8ft BGS					
74						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



GRAIN SIZE ANALYSIS



BEDROCK LOG 13968_20030522.GPJ CRA_CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 4 of 7

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: MW-X143Y245D

PROJECT NUMBER: 013968

DATE COMPLETED: April 2, 2002

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 10-INCH TRI-CONE & HQ CORE

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	ROD %
78	- styloite, horizontal at 78.5ft BGS			8	100	100
80						
82						
84	- styloite, horizontal at 84.1ft BGS					
86						
88				9	100	100
90	- 1/2" thick open at 89.5ft BGS					
92	- open at 91.9ft BGS		4" DIA. HQ COREHOLE			
94	- styloite at 94.6ft BGS					
96	- thin horizontal fracture at 96.2ft BGS		DOW PACKER			
98				10	100	100
100	LIMESTONE (UPPER HARRODSBURG FORMATION), styloite, coarse grained, well cemented, bioclastic calcarenite with shale, interbedded with argillaceous limestone lenses, light grey	591.2				
102	- styloite at 101.1ft BGS					
104	- 2' highly fossilized (crinoid, brachiopods, abundant fan bryozoan), vuggy at 102.2ft BGS					
106	- styloite at 104.5ft BGS					
108	- styloite at 106.0ft BGS		SAMPLE ZONE 2			
110	- thin horizontal fracture at 108.7ft BGS			11	100	100
	- thin horizontal fracture at 110.4ft BGS		DOW PACKER			

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



GRAIN SIZE ANALYSIS



BEDROCK LOG 13968 20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 5 of 7

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: MW-X143Y245D

PROJECT NUMBER: 013968

DATE COMPLETED: April 2, 2002

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 10-INCH TRI-CONE & HQ CORE

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	RQD %
112	- shale, thin horizontal fracture at 110.7ft BGS					
	- styloite at 112.7ft BGS					
114	- 3" of highly fractured rock, horizontal at 113.7ft BGS					
116						
	- styloite at 117.0ft BGS					
118	- shale parting, black at 117.1ft BGS			12	100	100
	- shale parting, black at 118.0ft BGS					
	- shale parting, black at 118.6ft BGS					
120	- shale parting, black at 118.9ft BGS					
	- shale parting, black at 119.2ft BGS					
	- 1/2" shale parting at 121.1ft BGS					
122	- styloite at 122.2ft BGS					
124						
	- near horizontal fracture at 125.1ft BGS					
126			4" DIA. HQ COREHOLE			
128	- horizontal fracture at 128.7ft BGS			13	100	100
130						
	- horizontal fracture at 131.0ft BGS					
132	- horizontal fracture at 132.2ft BGS					
134	- styloite at 134.1ft BGS					
	- styloite at 135.4ft BGS					
136	- styloite at 135.7ft BGS					
	- styloite at 136.5ft BGS					
	- styloite at 137.5ft BGS					
138	- styloite at 138.0ft BGS		NON-MONITORING ZONE	14	100	100
	- styloite at 138.5ft BGS					
	- styloite at 138.9ft BGS					
140	- styloite at 139.6ft BGS					
	- styloite at 141.0ft BGS					
142	- open styloite at 141.5ft BGS					
	- styloite at 142.7ft BGS					
	- open styloite at 143.0ft BGS					
144	LIMESTONE (LOWER HARRODSBURG FORMATION), styloite, horizontal, medium to coarse grained, mostly argillaceous with shale	546.2				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



GRAIN SIZE ANALYSIS



BEDROCK LOG 13968_2003052.GPJ CRA CORP GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 6 of 7

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: MW-X143Y245D

PROJECT NUMBER: 013968

DATE COMPLETED: April 2, 2002

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 10-INCH TRI-CONE & HQ CORE

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	RQD %
148	lenses, calcareous, abundant geodes and siliceous towards the bottom, light to dark grey - shale parting at 145.0ft BGS - thin horizontal fracture at 145.7ft BGS - open styloite at 147.2ft BGS - open styloite at 147.8ft BGS			15	100	100
150	- 2" geode with quartz crystal fillings at 149.4ft BGS - styloite at 150.0ft BGS - open styloite at 152.0ft BGS					
152						
154	- open styloite at 154.8ft BGS					
156						
158	- styloite at 157.5ft BGS - open styloite at 158.4ft BGS			16	100	100
160	- open styloite at 159.8ft BGS - 2' highly fractured, horizontal at 160.7ft BGS					
162						
164	- 2' interbedded shale beds at 163.6ft BGS					
166	LIMESTONE (RAMP CREEK FORMATION), very fine grained, contains small amounts of shale, 1" geode	524.2				
168	- 10' numerous geodes with calcite fillings at 167.7ft BGS			17	100	100
170						
172	- 2" geodes, calcite fillings at 171.8ft BGS - 2" geodes, calcite fillings at 172.5ft BGS					
174	- 2" geodes, calcite fillings at 173.6ft BGS					
176	- open fracture at 175.5ft BGS - 1" geode, quartz filled at 176.7ft BGS - 3" interbedded shale at 177.0ft BGS					
178				18	100	100
180						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



GRAIN SIZE ANALYSIS



BEDROCK LOG - 3968, 20030522.GPJ CRA_CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: B-X148Y233

PROJECT NUMBER: 013968

DATE COMPLETED: February 22, 2002

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 4 1/4-INCH HSA

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	N' VALUE	PID (ppm)
	GROUND SURFACE	695.6						
2	SW-GW SAND AND GRAVEL (FILL), rock fragments, compact, medium to coarse grained, well graded	693.6		1	X	2.0	25	0
4	CL-CLAY, little silt, very stiff, low to medium plasticity, 10YR 4/8 (red), iron staining, moist			2	X	2.0	22	0
6	- 2.5YR 4/8 (red) at 6.0ft BGS			3	X	2.0	23	0
8				4	X	2.0	24	0
10				5	X	2.0	28	0
12	ML-SILT, trace clay, compact, 2.5YR 6/2 (pale red), very moist to wet	684.6		6	X	2.0	22	0
14	CL-CLAY, little silt, firm, medium plasticity, 5YR 5/8 (yellowish red), moist	683.1		7	X	2.0	10	0
16	BEDROCK, refusal	681.1		8	X	1.0	>50	0
16	END OF BOREHOLE @ 15.0ft BGS	680.6						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ☐

OVERBURDEN LOG 13968 20030522.GPJ CRA_CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: B-X169Y248

PROJECT NUMBER: 013968

DATE COMPLETED: February 21, 2002

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 4 1/4-INCH HSA

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	N VALUE	FID (ppm)
	GROUND SURFACE	690.9						
2	SW-GW SAND AND GRAVEL (FILL), little silt, dense, fine to coarse grained, well graded, grey, moist, rock fragments	689.4		1	X	2.0	44	0
4	CL-CLAY (FILL), little silt, trace gravel, very stiff, low to medium plasticity, 5YR 4/6 (yellowish red), moist	686.9		2	X	2.0	19	0
	wood fragments	686.4		3	X	2.0	22	0
6	SP-SAND (FILL), little gravel, trace silt, compact, fine grained, poorly graded, grey/black, moist, (foundry sand)			4	X	2.0	32	0
8	- black/light grey, reddish brown/yellow and light blue, faint odor, loose at 6.0ft BGS			5	X	2.0	6	0
10				6	X	2.0	6	0
12				7	X	2.0	4	0.9
14				8	X	2.0	4	1.3
16				9	X	2.0	10	0
18				10	X	2.0	8	0
20	CL-CLAY, little silt, rootlets, firm, low to medium plasticity, brown with some black staining, very moist	670.9		11	X	2.0	8	0
22	- yellowish red at 22.0ft BGS			12	X	2.0	11	0
24	BEDROCK	666.4		13	X	1.0	>50	0
26	END OF BOREHOLE @ 25.0ft BGS	665.9						
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ○

OVERBURDEN LOG 13968_20030522.GPJ GRA CORP GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 3

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: B-X177Y252D

PROJECT NUMBER: 013968

DATE COMPLETED: March 3, 2003

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 4 1/4-INCH HSA & HQ CORE

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	ANGLE BORING	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	"N" VALUE	PID (ppm)
	GROUND SURFACE	681.7						
	TOPSOIL	681.4						
2	CL-CLAY (FILL), trace silt, soft, yellowish red (5 YR 4/6), moist	679.7		1	P/S	1.5		0.4
4	SP-SAND (FILL), fine grained, poorly graded, loose, dark reddish brown (5 YR 4/4), moist			2	P/S	0.9		0.2
6	- reddish brown (5 YR 4/4) at 5.0ft BGS			3	P/S	0.5		0.2
8				4	P/S	1.5		0.2
10	SC-SANDY CLAY (FILL), soft, brown (7.5 YR 4/4), moist	671.7		5	P/S	0.9		0.3
12	Gravel layer	670.7		6	P/S	0.9		0.5
14	SP-SAND (FILL), fine grained, poorly graded, loose, very dark brown (7.5 YR 2.5/2), moist, yellow & orange layers	669.5		7	P/S	1.5		0.2
16				8	P/S	1.7		0.8
18	- black (7.5 YR 2.5/1), no odor and colors present at 18.5ft BGS			9	P/S	1.7		2.4
20				10	P/S	1.8		4.0
22	CL-CLAY, trace silt and sand, soft, low plasticity, dark grayish brown (2.5 Y 3/2), moist, black stains, odor	661.7		11	P/S	2.0		0.4
24	- no black stains present at 21.0ft BGS			12	P/S	1.7		0.2
26	- no silt and sand, dark yellowish brown (10 YR 3/6), stiff at 21.5ft BGS			13	P/S	1.0		0.5
28	- very stiff, rock chips at 23.0ft BGS							
30	- refusal at 24.5ft BGS							
32	END OF OVERBURDEN HOLE @ 25.0ft BGS							
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

OVERBURDEN LOG - 13968 - 20030522 GPJ CRA CORP GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 2 of 3

PROJECT NAME: GM BEDFORD RFI

PROJECT NUMBER: 013968

CLIENT: GENERAL MOTORS CORPORATION

LOCATION: BEDFORD, INDIANA

DRILLING CONTRACTOR: RDNP

HOLE DESIGNATION: B-X177Y252D

DATE COMPLETED: March 3, 2003

DRILLING METHOD: 4 1/4-INCH HSA & HQ CORE

FIELD PERSONNEL: K. VANDER MEULEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	ANGLE BORING	RUN NUMBER	CORE RECOVERY %	RQD %
	- refusal at 24.5ft BGS					
	LIMESTONE (ST. LOUIS FORMATION)	656.7				
26						
	SHALE, soft, green / blue	655.2				
	- 2-inch void at 27.1ft BGS	654.7				
28	LIMESTONE (ST. LOUIS FORMATION), coarse grained, fossils, beige micritic limestone	654.1		1	100	100
30	LIMESTONE (SALEM FORMATION), fine to medium grained, granular, very thick bedding, fossils, styloites, grey					
32	- 6-inch tan section at 30.0ft BGS					
	- grey at 30.6ft BGS					
	- styloite at 31.0ft BGS					
	- tan at 31.6ft BGS					
34	- grey at 32.5ft BGS					
	- styloite at 32.7ft BGS					
	- tan, fracture at 33.2ft BGS					
36	- grey at 34.1ft BGS					
	- styloite, white / grey at 35.4ft BGS					
	- fracture at 36.6ft BGS					
38	- fracture at 37.2ft BGS					
	- styloite at 37.7ft BGS					
	- fracture at 38.0ft BGS					
40	- styloite at 38.7ft BGS					
	- open styloite at 39.8ft BGS					
	- 1-inch fracture at 39.9ft BGS					
42	- open styloite at 40.0ft BGS					
	- styloite at 41.9ft BGS					
	- fracture at 42.5ft BGS					
44						
	- fracture at 45.2ft BGS					
46	- fracture at 45.6ft BGS					
	- styloite at 46.5ft BGS					
48						
50	- half-inch fracture at 50.2ft BGS					
52						
	- open styloite at 53.2ft BGS					
54	- open styloite at 53.6ft BGS					
56						
58	- open styloite at 57.4ft BGS					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

BEDROCK LOG 13968_20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 3 of 3

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: B-X177Y252D

PROJECT NUMBER: 013968

DATE COMPLETED: March 3, 2003

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 4 1/4-INCH HSA & HQ CORE

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	ANGLE BORING	RUN NUMBER	CORE RECOVERY %	RQD %
60						
62	- stiloite at 61.6ft BGS END OF BOREHOLE @ 61.9ft BGS	619.8	4" DIA. HQ COREHOLE	6	100	100
64	Boring drilled on an 30 degree angle from vertical (all depths not in relation to vertical)					
66	Overburden pilot boring advanced utilizing 4-1/4 inch hollow stem augers and samples collected by Split-spoon					
68						
70						
72						
74						
76						
78						
80						
82						
84						
86						
88						
90						
92						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

BEDROCK LOG 13968_20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: GM BEDFORD RFI
PROJECT NUMBER: 013968
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: BEDFORD, INDIANA
DRILLING CONTRACTOR: RDNP

HOLE DESIGNATION: B-X193Y251
DATE COMPLETED: March 4, 2002
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: M. GROVES

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	N VALUE	PID (ppm)
	GROUND SURFACE	685.4						
	TOPSOIL	685.2						
2	CL-CLAY (FILL), trace silt, stiff, yellowish brown (10YR 5/6), moist			1	P/S	2.0		0
4	SP-SAND (FILL), trace gravel, loose, fine grained, poorly graded, olive brown (2.5Y 4/4), moist	682.4		2	P/S	2.0		0
6	- trace gravel at 5.0ft BGS			3	P/S	2.0		<1
8	- black (GLE1 2.5/N) at 6.0ft BGS			4	P/S	2.0		<1
10				5	P/S	2.0		<1
12				6	P/S	2.0		<1
14				7	P/S	2.0		<1
16				8	P/S	2.0		<1
18				9	P/S	2.0		<1
20				10	P/S	2.0		<1
22				11	P/S	2.0		<1
24				12	P/S	2.0		<1
26				13	P/S	2.0		0
28	- becomes wet, heaving sands at 28.0ft BGS			14	P/S	2.0		0
30				15	P/S	2.0		0
32				16	P/S	2.0		0
34	- dark greenish gray (GLE1 4/5GY) at 33.5ft BGS			17	P/S	1.0		0
	- Refusal at 34.0ft BGS	651.4						

BENTONITE CHIPS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ☐

OVERBURDEN LOG 13968 20030522 GPJ CFA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: B-X193Y251

PROJECT NUMBER: 013968

DATE COMPLETED: March 4, 2002

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: GEOPROBE

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: M. GROVES

DRILLING CONTRACTOR: RDNP

DRAFT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	N' VALUE	PID (ppm)
	END OF BOREHOLE @ 34.0ft BGS							
36								
38								
40								
42								
44								
46								
48								
50								
52								
54								
56								
58								
60								
62								
64								
66								
68								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ☐

OVERBURDEN LOG 13968, 20030522.GPJ CRA_CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: B-X219Y249

PROJECT NUMBER: 013968

DATE COMPLETED: February 26, 2002

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 4 1/4-inch HSA

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	N VALUE	PID (ppm)
	GROUND SURFACE	679.6						
	TOPSOIL	679.4		1	X	2.0	9	0
2	CL-CLAY (FILL), little to some silt, little gravel, stiff, low plasticity, brown, moist			2	X	2.0	22	0
4	GW-GRAVEL (FILL), some sand, compact, medium to coarse grained, well graded, gray, moist	676.6 675.6		3	X	2.0	14	0
6	CL-CLAY (FILL), some silt, stiff, medium plasticity, brown, moist			4	X	2.0	32	0
8	SP-SAND (FILL), some silt, trace gravel, compact, fine grained, poorly graded, black, wet, bits of wood and plastic	673.6		5	X	2.0	25	0
10	- trace to little clay, dense, moist at 8.0ft BGS			6	X	2.0	44	0
12	- bricks, rock fragments at 11.0ft BGS			7	X	2.0	47	0
14	- rock fragments, bits of metal at 15.0ft BGS			8	X	2.0	42	0
16				9	X	2.0	27	0
18	- compact at 18.0ft BGS			10	X	2.0	13	0
20				11	X	2.0	12	0
22	CL-CLAY (NATIVE), rock fragments, some silt, very stiff, low plasticity, brown, moist	657.6		12	X	2.0	>50	0
24	BEDROCK, refusal	656.1 655.6						
	END OF BOREHOLE @ 24.0ft BGS							

CEMENT /
BENTONITE
GROUT

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

OVERBURDEN LOG 13968 20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 6

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: B-X223Y247D

PROJECT NUMBER: 013968

DATE COMPLETED: February 4, 2003

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 7 7/8-INCH TRI-CONE & HQ CORE

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN / M. GROVES

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	ANGLE BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	N' VALUE	PID (ppm)
	GROUND SURFACE	676.2						
	TOPSOIL, with roots	675.9						
2	CL-CLAY (FILL), trace silt, stiff, low plasticity, strong brown (7.5 YR 5/8), moist	674.4		1	X	1.0		0.1
4	SP-SAND (FILL), fine grained, poorly graded, loose, dark reddish brown (5 YR 3/2), moist			2	X	1.2		0.2
6	- rock fragments at 6.0ft BGS			3	X	0.5		0.6
8				4	X	1.0		0.5
10	CL-CLAY (FILL), trace sand and gravel, medium plasticity, soft, dark yellowish brown (10 YR 9/7), moist	668.2		5	X	0.5		NA
12	- no gravel at 12.5ft BGS			6	X	0.6		0.2
14				7	X	0.5		1.0
16				8	X	1.3		0.5
18	- 2-inch section of gravel fragments at 17.0ft BGS			9	X	0.6		1.1
20	- trace sand at 18.0ft BGS			10	X	1.0		0.8
22	SC-CLAYEY SAND (FILL), non-plastic, soft, black (5 YR 2.5/2), moist	655.2		11	X	1.5		0.5
24	SP-SAND (FILL), fine grained, poorly graded, compact, black (5 YR 2.5/2), moist	654.2		12	X	1.0		3.3
26				13	X	1.7		2.4
28	SC-CLAYEY SAND (FILL), same as above	649.7		14	X	1.7		1.9
30	CL-CLAY, trace sand and silt, low plasticity, dark reddish brown (5 YR 3/2), moist	646.7		15	X	2.0		2.0
32	SC-CLAYEY SAND (FILL), same as above	645.2		16	X	2.0		1.7
34				17	X	1.5		1.0
		641.7		18	X	1.0		1.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ☐

OVERBURDEN LOG 13968 20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 2 of 6

PROJECT NAME: GM BEDFORD RFI

PROJECT NUMBER: 013968

CLIENT: GENERAL MOTORS CORPORATION

LOCATION: BEDFORD, INDIANA

DRILLING CONTRACTOR: RDNP

HOLE DESIGNATION: B-X223Y247D

DATE COMPLETED: February 4, 2003

DRILLING METHOD: 7 7/8-INCH TRI-CONE & HQ CORE

FIELD PERSONNEL: K. VANDER MEULEN / M. GROVES

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	ANGLE BOREHOLE	RUN NUMBER	CORE RECOVERY %	RQD %
36	CL-CLAY, trace silt, low plasticity, soft, strong brown (7.5 YR 5/2), moist	641.7				
36	LIMESTONE (SALEM FORMATION), innerbedded tan/gray top 1.1 feet, fine to coarse grained, massive, granular, very thick bedding	641.2				
38	- fracture at 37.1ft BGS			1	100	100
38	- styloite at 37.7ft BGS					
40	- fracture, tan, mud filling at 37.8ft BGS					
40	- coarse grained, gray at 38.6ft BGS					
42	- tan, styloite at 39.7ft BGS					
42	- styloite at 41.1ft BGS					
42	- gray at 41.4ft BGS					
44	- tan at 41.6ft BGS					
44	- gray at 42.4ft BGS					
46	- styloite at 44.4ft BGS			2	100	100
48	- styloite at 46.3ft BGS					
48	- styloite at 46.7ft BGS					
50	- open styloite at 47.4ft BGS					
52	- fracture at 48.9ft BGS					
54	- styloite at 50.8ft BGS					
56	- styloite at 51.1ft BGS					
58	- tan, fossils (bryozoan) at 51.4ft BGS			3	100	100
60	- gray at 59.3ft BGS					
62						
64						
66				4	100	100
68	- styloite at 68.0ft BGS					
68	- half-inch calcite filled vug at 68.2ft BGS					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

BEDROCK LOG 13968_20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 3 of 6

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: B-X223Y247D

PROJECT NUMBER: 013968

DATE COMPLETED: February 4, 2003

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 7 7/8-INCH TRI-CONE & HQ CORE

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN / M. GROVES

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	ANGLE BOREHOLE	RUN NUMBER	CORE RECOVERY %	RQD %
70						
72	- styloite at 71.6ft BGS					
74						
76				5	100	100
78	- styloite at 77.3ft BGS					
80	- fracture at 78.6ft BGS - fracture at 79.7ft BGS					
82						
84	- styloite at 83.3ft BGS - styloite at 84.1ft BGS			6	100	100
86	- fracture at 85.6ft BGS					
88	- fracture at 87.2ft BGS					
90	- styloite at 89.1ft BGS					
92	- styloite at 90.6ft BGS - fracture at 91.4ft BGS					
94	- styloite at 92.5ft BGS - open styloite at 93.1ft BGS - styloite at 93.3ft BGS LIMESTONE (UPPER HARRODSBURG FORMATION), coarse, gray, fossils well cemented bioclastic (bryozoan & brachipods) calcarenite and calcirudite limestone	582.8		7	100	100
96	- fracture at 94.6ft BGS					
98	- styloite at 95.8ft BGS - styloite at 96.6ft BGS - fracture at 97.1ft BGS					
100	- fracture at 98.8ft BGS - styloite at 99.1ft BGS - fracture at 99.4ft BGS					
102	- styloite at 100.3ft BGS - styloite at 100.8ft BGS					
	- styloite at 103.3ft BGS					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

BEDROCK LOG 13968_2003052 GPJ CRA_CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 4 of 6

PROJECT NAME: GM BEDFORD RFI

PROJECT NUMBER: 013968

CLIENT: GENERAL MOTORS CORPORATION

LOCATION: BEDFORD, INDIANA

DRILLING CONTRACTOR: RDNP

HOLE DESIGNATION: B-X223Y247D

DATE COMPLETED: February 4, 2003

DRILLING METHOD: 7 7/8-INCH TRI-CONE & HQ CORE

FIELD PERSONNEL: K. VANDER MEULEN / M. GROVES

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	ANGLE BOREHOLE	RUN NUMBER	CORE RECOVERY %	RQD %
106	- fracture, shale parting at 103.4ft BGS - fracture at 104.1ft BGS - styloite at 106.8ft BGS	566.8		8	100	100
108	- fracture, shale parting at 108.0ft BGS - styloite at 108.2ft BGS - fracture at 108.8ft BGS			9	100	100
110	- fracture, shale parting at 109.2ft BGS LIMESTONE (LOWER HARRODSBURG FORMATION), fine grained, white, abundance of fine fossils, trace calcite					
112	- half-inch vug at 110.7ft BGS					
114	- styloite at 113.4ft BGS - styloite at 114.3ft BGS - styloite at 114.8ft BGS					
116	- styloite at 115.5ft BGS					
118	- fracture at 118.1ft BGS - fracture at 118.5ft BGS - fracture, shale parting at 119.3ft BGS			10	100	100
120	- light gray, styloite at 120.0ft BGS					
122	- styloite at 121.2ft BGS - styloite at 121.8ft BGS					
124	- open styloite at 123.2ft BGS					
126	- 1.5 foot section of abundance of fossils at 124.3ft BGS - fracture at 125.4ft BGS - fracture at 126.1ft BGS - open styloite at 126.5ft BGS					
128	- 1.8 foot of porous vuggy calcite filled section containing fossils at 127.0ft BGS - open styloite at 129.0ft BGS			11	100	100
130	- open styloite at 130.0ft BGS					
132	- open styloite at 132.8ft BGS					
134	- styloite at 134.5ft BGS					
136	- open styloite at 135.7ft BGS - open styloite at 136.1ft BGS					
138	- styloite at 137.6ft BGS - open styloite at 138.0ft BGS					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

BEDROCK LOG 13968_20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 5 of 6

PROJECT NAME: GM BEDFORD RFI

PROJECT NUMBER: 013968

CLIENT: GENERAL MOTORS CORPORATION

LOCATION: BEDFORD, INDIANA

DRILLING CONTRACTOR: RDNP

HOLE DESIGNATION: B-X223Y247D

DATE COMPLETED: February 4, 2003

DRILLING METHOD: 7 7/8-INCH TRI-CONE & HQ CORE

FIELD PERSONNEL: K. VANDER MEULEN / M. GROVES

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	ANGLE BOREHOLE	RUN NUMBER	CORE RECOVERY %	RQD %
140						
142	- fracture at 142.0ft BGS					
144				12	100	100
146						
148	- fracture, blue shale parting at 148.2ft BGS					
150	- 7-inches of fractures with blue shale partings at 149.3ft BGS					
152	- styloite at 150.7ft BGS					
152	- fracture, shale parting at 150.8ft BGS					
152	- open styloite at 151.6ft BGS					
152	- styloite at 152.2ft BGS					
152	- open styloite at 153.3ft BGS					
154	- styloite at 154.3ft BGS			13	100	100
156	- styloite at 155.2ft BGS					
156	- fracture, shale parting at 156.4ft BGS					
158	- fracture, shale parting at 157.7ft BGS					
160	- fracture, shale parting at 159.1ft BGS					
160	- styloite at 159.4ft BGS					
160	- styloite at 160.0ft BGS					
162	- 2-foot section of interbedded shale at 160.9ft BGS					
164	- open fracture, shale parting at 164.5ft BGS			14	100	100
166	- open fracture, shale parting at 165.6ft BGS					
166	- fracture at 165.9ft BGS					
168	- fracture at 167.2ft BGS					
168	- styloite at 168.0ft BGS					
170						
172	- shale seam at 171.5ft BGS					
	- 1.5-inch calcite filled vug at 173.2ft BGS	503.2				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

BEDROCK LOG 13968 20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

Page 6 of 6

PROJECT NAME: GM BEDFORD RFI

HOLE DESIGNATION: B-X223Y247D

PROJECT NUMBER: 013968

DATE COMPLETED: February 4, 2003

CLIENT: GENERAL MOTORS CORPORATION

DRILLING METHOD: 7 7/8-INCH TRI-CONE & HQ CORE

LOCATION: BEDFORD, INDIANA

FIELD PERSONNEL: K. VANDER MEULEN / M. GROVES

DRILLING CONTRACTOR: RDNP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	ANGLE BOREHOLE	RUN NUMBER	CORE RECOVERY %	RQD %
176	LIMESTONE (RAMP CREEK), 1.4 foot section of interbedded shale with vugs, very fine grained, contains small amounts of shale, even bedded - shale seam at 174.7ft BGS - 9-inch of interbedded shale at 177.0ft BGS			15	100	100
178						
180	- large fracture at 179.9ft BGS - high shale content at 180.0ft BGS - half-inch vug at 181.1ft BGS					
182						
184	- 1-inch vug at 184.8ft BGS			16	100	100
186						
188	- 2-inch geode at 187.5ft BGS					
190	- 1.7 feet of interbedded shale at 190.0ft BGS - fracture, shale seam at 191.0ft BGS					
192						
194				17	100	100
196						
198		477.6				
200	SHALE (EDWARDSVILLE FORMATION), light blue END OF BOREHOLE @ 200.0ft BGS	476.2				
202	Boring drilled on an 30 degree angle from vertical (all depths not in relation to vertical)					
204	Overburden pilot boring advanced utilizing 4-1/4 inch hollow stem augers and samples collected by STP method					
206						
208						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

BEDROCK LOG 13968_20030522.GPJ CRA CORP.GDT 5/22/03



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: GM BEDFORD RFI

PROJECT NUMBER: 013968

CLIENT: GENERAL MOTORS CORPORATION

LOCATION: BEDFORD, INDIANA

DRILLING CONTRACTOR: RDNP

HOLE DESIGNATION: B-X243Y257

DATE COMPLETED: March 5, 2002

DRILLING METHOD: GEOPROBE

FIELD PERSONNEL: M. GROVES

DRAFT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	N' VALUE	PID (ppm)
	GROUND SURFACE	654.7						
	TOPSOIL	654.5						
2	CL-CLAY (FILL), trace silt, soft, low plasticity, 7.5YR 4/6 (strong brown), moist			1	P/S	2.0		0
4	- 2.5Y 4/4 (olive brown) at 3.0ft BGS			2	P/S	2.0		0
6		648.7		3	P/S	2.0		<1
8	SP-SAND (FILL), loose, fine grained, poorly graded, GLEY2 2.5/5PB (bluish black), moist	647.2		4	P/S	2.0		<1
10	CL-CLAY, some sand, soft, low plasticity, 2.5Y 3/2 (very dark grayish brown)			5	P/S	2.0		<1
12	- trace sand at 9.5ft BGS			6	P/S	2.0		<1
14	- no sand at 10.5ft BGS			7	P/S	2.0		0
16	- 7.5YR 4/6 (strong brown) at 11.5ft BGS			8	P/S	2.0		0
18	Fractured rock and rock fragments	638.7		9	P/S	1.0		0
20	- Refusal at 17.0ft BGS	637.7						
22	END OF BOREHOLE @ 17.0ft BGS							
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

OVERBURDEN LOG 13968 20030522 GPJ CRA CORP GDT 5/22/03