NORTHERN TRIBUTARY - PARCELS 384/386 AND 393 INTERIM MEASURES WORK PLAN

GENERAL MOTORS POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

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LIST OF ACRONYMS/SHORT FORMS

AAQMP	-	Ambient Air Quality Monitoring Plan
AOC	-	Administrative Order on Consent
Bedford Facility	-	GM Powertrain Bedford Facility
CA	-	Corrective Action
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
Certification Report	-	Final Construction Certification Report
CN	-	cyanide
CRA	-	Conestoga-Rovers & Associates, Inc.
cy	-	cubic yards
EZ	-	Exclusion Zone
Facility	-	GM Powertrain Bedford Facility
GM	-	General Motors Corporation
HASP	-	Health and Safety Plan
IDEM	-	Indiana Department of Environmental Management
IM	-	Interim Measure
OSHA	-	Occupational Safety & Health Administration
PCBs	-	Polychlorinated Biphenyls
PRG	-	Preliminary Remediation Goal
QAPP	-	Quality Assurance Project Plan
RCRA	-	Resource Conservation and Recovery Act
SAP	-	Sampling and Analysis Plan
Site	-	Parcels 384, 386 and 393
SOPs	-	Standard Operating Procedures
SOW	-	Scope of Work
SVOC	-	Semi-Volatile Organic Compounds
TAL	-	Total Analyte List
TCL	-	Total Compound List
TSCA	-	Toxic Substances Control Act
TSP	-	Total Suspended Particulates
U.S. EPA	-	United States Environmental Protection Agency
VOC	-	Volatile Organic Compounds
WMP	-	Waste Management Plan
Work Plan	-	Northern Tributary Parcels 384/386 and 393 - Interim Measure Work Plan
WWTP	-	Wastewater Treatment Plant

1.0 INTRODUCTION

This Northern Tributary - Parcels 384, 386, and 393, Interim Measures Work Plan (Work Plan) presents the Scope of Work (SOW) to be completed as an Interim Measure (IM) for Parcels 384/386 and 393 (Site) which are located on the Northern Tributary adjacent to the General Motors Corporation (GM) Powertrain Bedford Facility located in Bedford, Indiana. Conestoga-Rovers & Associates Inc. (CRA) has prepared this Work Plan on behalf of GM in accordance with the Resource Conservation and Recovery Act (RCRA) Corrective Action (CA) activities being conducted under the Performance Based Agreement (effective March 20, 2001, as amended) between United States Environmental Protection Agency (U.S. EPA) and GM for the GM Powertrain Bedford Facility (Bedford Facility or Facility).

The location of Parcels 384/386 and 393 are presented on Figure 1.1. Site Plans for Parcels 384/386 and 393 are presented on Figures 1.2 and 1.3, respectively. Parcels 384/386 and 393 are owned by GM. Aerial photographs of each of the parcels are provided on Figures 1.4 and 1.5.

1.1 GENERAL

The purpose of this Work Plan is to present an overview of the current conditions and to provide the details related to the implementation of an IM for Parcels 384/386 and 393. The Work Plan also summarizes the information obtained during Site investigation activities conducted by GM.

This Work Plan includes the following components:

i) a review of the delineation of the extent of areas impacted by Polychlorinated Biphenyls (PCBs);

ii) description of remedy components for Parcels 384/386;

iii) Site preparation activities;

iv) construction support facilities;

v) environmental controls;

vi) Site safety and contingency plans;

vii) soil excavation, handling, and backfilling approaches for selected areas;

viii) transportation and staging requirements;

ix) quality assurance; and

x) IM implementation schedule.

1.2 WORK PLAN ORGANIZATION

The remainder of this Work Plan is organized as follows:

Section 2.0 – Review of Existing Conditions
This section presents a description of Parcels 384/386 and 393 and a review of previous investigations that have formed the basis for this Work Plan.

Section 3.0 –Parcel 384/386 Fill Area - IM Approach
This section presents a description of remedy components applicable to the fill area on Parcel 384/386.

Section 4.0 – Interim Measure Scope of Work
This section presents a description of the SOW for the IM to be completed under this Work Plan.

Section 5.0 - Approvals
This section outlines the approval requirements for construction within the flood plain as well as other approval requirements.

Section 6.0 – Reporting
This section presents the reporting activities required under the Work Plan.

Section 7.0 – Project Team
This section presents the Project Team and organizational structure for implementation of the activities required under the Work Plan.

Section 8.0 – Project Schedule
This section presents the schedule for implementation of the activities required under the Work Plan.

Section 9.0 – References
This section presents references cited in the Work Plan.

The existing Site-specific Consolidated Health and Safety Plan (HASP) (CRA, November 2004), Sampling and Analysis Plan (SAP) (CRA, May 2004), Waste Management Plan (WMP) (CRA, May 2004), and an Ambient Air Quality Monitoring

Plan (AAQMP) (CRA, May 2004) provided in the Downstream Parcels Removal Action Work Plan (CRA, May 2004), or approved amendments to these plans, will apply to Work Plan activities.

Also, the existing Quality Assurance Project Plan (QAPP) (CRA, August 13, 2003) for the RCRA CA activities will apply to all sampling and analysis activities at Parcels 384/386 and 393.

2.0 REVIEW OF EXISTING CONDITIONS

2.1 PARCEL DESCRIPTIONS

2.1.1 PHYSICAL SETTING

Parcels 384/386 are located on the north side of Breckenridge Road, north of the Facility. Parcel 393 is located on the south side of Broomsage Road, north of the Facility. These Parcels are located along a tributary to Bailey's Branch, referred to as the Northern Tributary. The Northern Tributary starts approximately at the southern boundary of Parcel 386 and flows to the northeast, ultimately discharging to Bailey's Branch on Parcel 23, just north of Broomsage Road, approximately 1,800 feet downstream from Parcel 393.

2.1.2 LAND USE

Parcels 384 and 386 are bordered to the north, east, and west by residential areas, and to the south by Breckenridge Road and the Facility. Parcel 393 is bordered by residential areas to the east and south. To the north, Parcel 393 is bordered by residential areas and Broomsage Road and to the west by a railway right-of-way.

2.1.3 NORTHERN TRIBUTARY HYDROLOGIC SETTING

The Northern Tributary begins at Parcel 386 as a shallow ditch and develops into a more defined ravine as it progresses through adjacent properties to the northeast. Flow in the Northern Tributary is primarily from surface water during storm events. The flow is therefore highly variable and intermittent in nature, particularly at the upper end of the tributary.

2.2 SITE CHARACTERIZATION ACTIVITIES

Surficial soil and sediment sampling has been completed throughout the Northern Tributary, including Parcels 384/386 and 393. Figures 2.1 and 2.2 identify the sampling locations on Parcels 384/386 and 393, respectively. The PCB data for Parcels 384/386 and 393 are presented both on Figures 2.1 and 2.2, respectively, and in Tables 2.1 and 2.2, respectively.

A fill area adjacent to Breckenridge Road covers a portion of Parcels 384/386 (Fill Area). Based on delineation activities completed to date, the fill material appears to be primarily soil, miscellaneous debris, and foundry sand. All PCB detections in the Fill Area were below 50 mg/kg with the exception of one 10-12 foot sample at TP-56 (297 mg/kg). In addition to the Fill Areas, three areas with PCB concentrations exceeding the Indiana Department of Environmental Management (IDEM) RISC generic residential soil cleanup criteria of 1.8 mg/kg were identified along the Northern Tributary on Parcel 386. In addition, three areas with PCB concentrations exceeding the soil cleanup criteria of 1.8 mg/kg were identified along the eastern portion of Parcel 393. Figures 2.3 and 2.4 identify the limits of PCBs exceeding the cleanup criteria on Parcels 384/386 and 393, respectively.

All characterization sample analysis and data validation has been completed in accordance with the approved QAPP.

2.3 EVALUATION OF APPLICABLE REGULATIONS

This section provides a review of applicable regulations that must be considered in implementing the IM for Parcels 386 and 393 applicable to the areas along the Northern Tributary. As discussed in Section 3.0, a complete visual removal of all fill from the Fill Area on Parcels 384/386 will be completed to address that area.

2.3.1 CLEANUP CRITERIA FOR EXCVATION OF PCB IMPACTED SOILS ALONG THE NORTHERN TRIBUTARY ON PARCELS 384/386 AND 393

U.S. EPA Region IX has developed a risk-based Preliminary Remediation Goal (PRG) for PCBs in soil (U.S. EPA 2004). Using conservative assumptions about potential residential exposures to soil and based on a lifetime incremental cancer risk of 10^{-5}, the U.S. EPA-derived PRG for PCBs is 2.2 mg/kg. This PRG has been used as a conservative screening criterion for the ongoing RCRA CA project, in advance of deriving a Site-specific risk-based cleanup criteria for the project to allow the expedited investigation and evaluation work to continue.

A Site-specific risk-based soil cleanup level has also been calculated for residential use. This cleanup criterion evaluates Site-specific factors and accounts for current and reasonably foreseeable potential exposures. Utilizing the Site-specific factors and potential exposures, a Site-specific risk-based cleanup criterion of 2 mg/kg has been developed for residential land use. The basis for the 2 mg/kg soil cleanup level is

presented in Appendix A to the Upstream Parcels Removal Action Work Plan (CRA, July 18, 2003, as amended). This discussion shows that estimates of cancer and non-cancer risks associated with exposures to soil with a statistically representative concentration of 2 mg/kg would be well within the ranges that U.S. EPA has established as acceptable for the protection of human health. Therefore, remedies that achieve the soil cleanup level of 2 mg/kg would be protective of human health under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), RCRA, and Section 761.61(c) of Toxic Substances Control Act (TSCA).

The cleanup criterion selected by U.S. EPA in the CERCLA Administrative Order on Consent (AOC) for floodplain soils along Pleasant Run, Bailey's Branch, and designated tributaries is 1.8 mg/kg total PCBs, based on the IDEM default residential cleanup criteria for unrestricted use (IDEM, February 2001). The 1.8 mg/kg criterion is also consistent with the Site-specific risk-based cleanup criterion discussed above. Therefore, it will be utilized as the cleanup criterion for the PCB impacted areas along the Northern Tributary in Parcels 386 and 393.

3.0 PARCEL 384/386 FILL AREA - IM APPROACH

In order to select the IM approach for the Fill Area, a detailed topographic survey of the fill area was completed. Figure 3.1 presents the existing conditions survey.

The Fill Area was originally part of a ravine. The IM approach for the Fill Area consists of complete excavation of fill material in the ravine area and consolidation of excavated material in the East Plant Area. Under this IM approach, the Fill Area on Parcels 384/386 would be completely excavated, using visual criteria down to native material and the area restored as a ravine. This methodology is appropriate given the low concentrations and obvious visual characteristics of the fill versus the surrounding clayey native soils. This process should attain the PCB cleanup criteria of 1.8 mg/kg in the most efficient and timely manner possible. Figure 3.2 presents the post-excavation contours. Based on these post-excavation contours, the volume of fill requiring removal was estimated. Approximately 25,300 cubic yards (cy) of material will be excavated. Should fill material extend to Breckenridge Road, an assessment will be made into whether any further action is required for the remaining fill material.

Excavated material will be stockpiled and sampled prior to being transported to the East Plant Area for use as grading fill as part of the East Plant Area IM, except for the material previously delineated to exceed 50 mg/kg. Soil materials delineated to be greater than or equal to 50 mg/kg will be placed in the on-Site landfill vault constructed as part of the East Plant Area IM.

This IM approach would require approximately 2-4 months to implement.

4.0 INTERIM MEASURE SCOPE OF WORK

This section presents the rationale and sequence of tasks for the IM. CRA, as designated in the Performance-Based Agreement, will direct and generally oversee activities on behalf of GM during the implementation of the IM, including collection and management of related data, and development and preparation of the Final Construction Certification Report. The Project Coordinator for CRA will provide overall project management and coordination between GM, CRA, the Bedford Facility, U.S. EPA, and IDEM.

The U.S. EPA and IDEM will be notified of the name and qualifications of the proposed contractor and significant subcontractors who will conduct activities in Parcels 384/386 and 393 at least 5 business days prior to the start of the field activities.

Following review of the Work Plan by the U.S. EPA, and procurement of the necessary permits, approvals, waivers, and contractors, the IM field activities will be initiated. These activities include:

- coordinating Parcel access;
- utility locates;
- mobilization of construction facilities, material, equipment, and personnel necessary to perform the work;
- provision and maintenance of construction facilities and temporary controls;
- Site preparation including:
  - emergency first aid facility,
  - fire suppression equipment,
  - construction of decontamination facilities,
  - the provision of temporary utilities,
  - construction of access roads,
  - construction of soil staging areas,
  - clearing and grubbing of existing vegetation (as required), and
  - work zone identification;
- implementation of environmental and sediment erosion controls;
- implementation of a Site-specific HASP;
- implementation of stormwater controls;

- soil excavation, handling, and backfilling including:
  - layout of initial excavation limits,
  - excavation of impacted material,
  - stockpiling and sampling of <50 ppm PCB material, and
  - backfilling/grading, and restoration of excavated areas, as required, with appropriate material;
- transport and placement as part of the East Plant Area IM;
- removal of miscellaneous debris (e.g., tree stumps, rocks) that cannot be integrated into the grading layer in the East Plant Area, and staging and/or disposal at appropriate off-Site facilities (as required);
- real-time fugitive air emissions monitoring (TSP monitoring);
- ambient air quality monitoring (PCB monitoring);
- IM closeout activities including:
  - cleanup/restoration of support areas,
  - restoration of excavation areas by minimal backfilling (where appropriate), grading and seeding and erosion control,
  - final decontamination of construction equipment and temporary facilities, and
  - management of decontamination waste waters;
- demobilization of temporary facilities and equipment from the Site;
- monitoring of existing seeps and springs; and
- monitoring of establishment of vegetation in restored areas.

Due to the small amount of excavation and material handling required on Parcel 393, these items may be modified slightly for Parcel 393. To the extent practicable, the above items will be performed in a way to minimize disturbance to the Parcels and the surrounding community.

These tasks are discussed in detail in the following sections.

4.1 PROPERTY ACCESS

Parcels 384/386 and 393 are owned by GM and there are no residents on the properties.

4.2 SITE SECURITY

A temporary fence will be placed around unsecured active work areas and used as a security fence during the IM construction period. The contractor will be responsible for maintaining security at all times during the IM construction activities. The contractor will inspect, maintain, and repair the fencing, as necessary, to ensure protection of the public and security of the Parcel. The fence will be removed at the conclusion of the IM.

Access gates into the work areas will be kept closed and locked to prevent uncontrolled and/or unauthorized access to the work areas. Site security will be patrolled the area during non-working hours.

During active soil handling, or until soil materials are removed from Parcels 384/386 and 393, security will be provided including:

i) Limit vehicular access to the work areas to authorized vehicles and personnel only.

ii) Provide initial screening of all Site personnel and visitors. A list of authorized personnel and the name of their employer and documentation of appropriate health and safety training will be available at the construction support trailers.

iii) Maintain a security log in which documentation is provided of all work area personnel, visitors and deliveries, and any security incidents. This log will include the date, name, address, company, time in and time out for each employee and visitor. If unauthorized personnel are observed near the work areas of Parcels 384/386 or 393 and refuse to vacate the premises, appropriate law enforcement officials will be contacted.

iv) Maintain a visitor log at the access locations. Visitors will not be allowed to enter without the knowledge and approval of CRA. All visitors will be required to complete health and safety training in accordance with the HASP prior to gaining access to the secured areas.

v) Check that all installations are secure and intact on a daily basis. If warning signs are removed or the fencing damaged, measures will be taken to rectify the situation at the earliest possible opportunity. All forms of vandalism will be brought to the attention of the GM Project Manager.

4.3 CONSTRUCTION SUPPORT FACILITIES

The following sections outline the required construction support facilities for Parcels 384/386 and 393.

4.3.1 SITE OFFICE

Office facilities are in place on the east side of the Facility on GM Drive to support the IM.

4.3.2 EMERGENCY FIRST-AID FACILITY

The contractor will be required to supply and maintain a first-aid facility, which complies with the requirements of 29 CFR 1910.141, during the IM.

4.3.3 FIRE SUPPRESSION EQUIPMENT

The contractor will be required to provide necessary fire suppression equipment to ensure the safety of Site personnel and protection of the owner's property. Details of the fire suppression equipment are provided in the approved HASP. Coordination will be established with the local Fire and Police Departments to respond to emergencies.

4.3.4 DECONTAMINATION FACILITIES

Prior to commencing work in the Exclusion Zone (EZ) of a parcel, the contractor will be required to supply and operate a personnel hygiene/decontamination facility. At the support areas, personnel decontamination stations will be established for the removal of personal protective equipment. The contractor will also maintain an equipment decontamination area at the active work area suitable for the equipment utilized.

4.3.4.1 PERSONNEL HYGIENE/DECONTAMINATION FACILITY

The contractor will be required to supply and operate a personnel hygiene/decontamination facility that complies with the requirements of 29 CFR 1910.141.

Wastewater from the personnel hygiene/decontamination facility will be pumped to designated storage tanks. The collected water will be properly treated at the WWTP.

4.3.4.2 EQUIPMENT DECONTAMINATION FACILITY

The contractor will be required to supply and operate an equipment decontamination facility. The contractor will have sufficient pumping equipment, piping, and tanker trucks to collect and transport all wastewater from the decontamination pad for treatment at the Wastewater Treatment Plant (WWTP) in the East Plant Area.

All equipment leaving the EZ established for work zone access locations will be decontaminated on the decontamination pad and will be inspected by CRA prior to entering the Support Zone.

Sediments collected on the decontamination pad will be collected be used as part of the East Plant Area grading layer.

4.3.5 PORTABLE SANITARY FACILITIES

Portable toilet facilities will be provided and maintained by the contractor in an area outside the EZ. Sanitary wastes will be removed and disposed of off-Site on a periodic basis in accordance with applicable laws and regulations.

4.3.6 UTILITIES

The contractor will be required to locate and verify the capacity of all aboveground and underground utilities prior to commencing field activities.

Temporary utilities necessary for the completion of the IM will be provided by the contractor, either by temporary tie-in to existing utilities, or by provision of temporary facilities (e.g., generators, water tanks, etc.).

4.3.7 ACCESS ROADS/PARKING

Access roads will be constructed, as necessary, to allow for access and loading of material onto transportation vehicles and provide a route for transportation vehicles to pass through the decontamination area prior to leaving the excavation area.

The contractor's excavation operation will be organized to minimize the contamination of imported granular material used for the construction of access roads. Imported granular materials used for the construction of access roads, if any, which contacts contaminated soil will be excavated and disposed of off-Site.

Sufficient space for parking for Site personnel and visitors will be established by the contractor (This may be on Plant property and not the Parcels themselves as there will be limited space available).

4.4 CLEARING AND GRUBBING

The areas required for construction facilities, access, and the excavation area will be cleared to the extent required to implement the IM. Additional clearing beyond that anticipated may be conducted, as necessary, to complete the IM for the Parcel. Cleared above grade vegetation will be removed or chipped on-Site and used to support Site restoration activities or other uses. Above grade vegetation is defined as vegetation located 1 foot or more above grade. Tree stumps and below-grade vegetation removed will be disposed of off-Site as <50 mg/kg wastes, as required.

4.5 ENVIRONMENTAL CONTROLS

4.5.1 FUGITIVE PARTICULATE CONTROL

The contractor will implement fugitive particulate control measures in accordance with the provisions of the Indiana Administrative Code Title 326 Article Rule 4 (Fugitive Dust Emissions), the current approved Ambient Air Quality Monitoring Plan, and approved addendum(s). The particulate control measures will be designed to limit the emissions of total suspended particulates (TSPs) that are likely to remain airborne and be carried out of the work areas (Parcels 384/386 and 393).

Excavation on Parcel 393 will be limited to three small areas. Due to these small excavation areas and the short duration of excavation activities, only real-time TSP monitoring will take place.

Excavation on Parcels 384/386 is expected to cover a larger area and have a longer duration. As a result, perimeter PCB monitoring will take place in addition to real-time TSP monitoring.

During the performance of the IM, the contractor will be responsible for the control of fugitive particulates generated by excavation, transportation, and backfilling of soil. This may involve the following:

- maintaining fugitive air emissions control measures such as a water misting system to prevent the generation of fugitive air emissions;
- use of potable water for fugitive air emissions controls;
- the contractor will not use any chemical means for dust and particulate control with out prior review and approval by the U.S. EPA;
- use appropriate covers on trucks hauling impacted or unimpacted material; and
- in the event that the contractor's dust control is not sufficient to control dust from the Site, work will be stopped and changes to the operations will be made prior to resuming work.

4.5.2 EROSION CONTROL

The contractor will plan and execute construction methods to minimize the amount of soil that requires excavation to be exposed at one time, to the extent practical. In areas where slopes exceed 5 percent grade, the contractor will insure soil erosion control through the use of silt fences, straw bales, riprap, sod, or erosion mats, as directed by CRA to prevent erosion and migration of silt, mud, sediment, and other debris out of the work areas.

4.5.3 STORMWATER CONTROL

Although it is anticipated that this IM will be conducted during a dry weather period, appropriate stormwater controls will be utilized in the event a storm event occurs.

Stormwater controls, including check dams, diversion dikes and drainage swales to control run-on from upland areas, will be constructed prior to initiating significant excavation. Construction of stormwater controls prior to initiating excavation will control the potential for off-Site releases and minimize the amount of stormwater that contacts contaminated material.

The contractor will be required to control stormwater runoff in order to meet the following requirements:

i) prevent surface water runoff from flowing from contaminated areas to clean areas;

ii) minimize stormwater entering a work zone from adjacent areas and ponding on-Site in excavated areas through use of temporary berms/swales, proper grading, and by expediting backfilling of excavations; and

iii) ensure that IM activities do not impact stormwater runoff quality to the Northern Tributary.

Stormwater flowing toward the work zones will be redirected, to the extent practical, through the use of dikes/swales/dams to minimize potential for stormwater to come in contact with potentially contaminated materials, surface water, and/or stormwater runoff.

The contractor will be required to contain and collect stormwater from the decontamination pad by providing curbing and positive drainage to a collection sump. This stormwater will be transferred from the sump to the contractor's temporary storage tank.

4.6 SITE-SPECIFIC HEALTH AND SAFETY AND CONTINGENCY AND EMERGENCY RESPONSE PLAN

A Site-specific HASP meeting the requirements of the RCRA Performance-Based Agreement is required to ensure that all IM construction activities are performed safely and in accordance with applicable regulatory requirements; and that all persons on-Site, the general public, and the environment are protected from exposure to Site-related material during implementation of the IM construction activities at the Site. Each contractor involved in IM construction activities at the Site will be required to develop, implement, and maintain their own Site-specific HASP for activities they will perform at

the Site. An approved Consolidated HASP has been created to cover the activities of CRA and CRA Services.

The basis for the HASP is the Occupational Safety and Health Administration (OSHA) Standards and Regulations contained in Title 29, Code of Federal Regulations, Parts 1910 and 1926 (29 CFR 1910 and 1926). The HASP also reflects the U.S. EPA guidance's regarding procedures required to insure safe operations at sites containing hazardous or toxic materials.

The HASP addresses the following:

i) worker medical surveillance;

ii) worker training and site orientation;

iii) Site Safety Officer designation and responsibilities;

iv) work area designations;

v) the planned movement of labor, equipment, and materials from and between work areas as work progresses;

vi) personnel and equipment decontamination facilities including planned disposal of decontamination waters and wastes;

vii) air monitoring program(s) for the various work areas;

viii) personal protective equipment to be used;

ix) personal hygiene and decontamination procedures;

x) respirator protection program and procedures;

xi) emergency and first-aid equipment;

xii) dust and particulate emission controls;

xiii) monitoring and mitigation of worker heat and cold stress;

xiv) safety meetings;

xv) site communications and posted notices; and

xvi) site security.

A confined space entry program will be developed if confined space entry is required to implement this IM.

The HASP will be maintained at the Site at all times during the performance of the IM and will be made available to all Site personnel and visitors permitted to enter the EZ.

In addition, the HASP includes emergency response activities and contingency planning, as necessary, to ensure that there are specific sets of standard operating procedures (SOPs) to be followed for different types of emergencies. The emergency response activities have been designed to safeguard on-Site personnel, the public, and the environment in the event of an emergency.

The on-Site contingency and emergency response plan includes SOPs for the following potential emergencies:

i) injury to on-Site personnel;

ii) detecting gases or vapors at stop work levels as defined in the HASP in an excavation area;

iii) fire on the Site;

iv) the unlikely event of a leak of toxic gases from unknown sources such as rupturing of compressed gas cylinders or gas lines during excavation;

v) severe weather events and/or flooding; and

vi) utility breakage (e.g., high pressure gas line).

4.7 SOIL EXCAVATION, HANDLING AND BACKFILLING

4.7.1 SOIL EXCAVATION

The limits of soil excavation from Parcels 384/386 and 393 have been established based on the delineation of the extent of fill material and PCBs above the clean-up criteria. The expected volume of soil to be excavated from Parcels 384/386 outside of the Fill Area is approximately 168 cubic yards, and from Parcel 393 is approximately 211 cubic yards. This estimate is based on an excavation depth of 1 foot. The total volume of fill to be removed from the Fill Area on Parcels 384/386 is estimated at 25,300 cy.

The layout of the initial excavation limits will be established prior to initiating excavation activities. The contractor will be required to perform Site excavation activities according to the following requirements:

i) perform tasks in an orderly and safe manner such that the movement and multiple handling of materials is minimized;

ii) to the extent possible, excavation will proceed from upstream to downstream and where possible, proceed from high ground to lower areas to prevent stormwater runoff being directed from an impacted area to a remediated area;

iii) grade excavation areas to direct stormwater runoff away from excavations;

iv) excavate around remaining trees in a manner which minimizes the potential to damage the trees; and

v) carry out measures necessary for dust emission control from excavation, soil handling, and transportation activities.

The scheduling of excavation activities will be coordinated so that activities may be completed promptly following construction of stormwater controls based on weather/seasonal conditions.

The strategy and sequencing for excavation of material from the Fill Area on Parcels 384/386 is as follows:

1) remove and clear all miscellaneous surface debris in and around the areas to be excavated;

2) all fill material will be excavated based on visual inspection;

3) excavated fill which, based on delineation sampling, contains concentrations of PCBs less than 50 mg/kg, will be excavated, stockpiled, and sampled prior to loading into a transport vehicle for placement as grading fill in the East Plant Area;

4) excavated fill which, based on delineation sampling, contains concentrations of PCBs greater than or equal to 50 mg/kg will be excavated, and directly loaded into a transport vehicle for placement in the landfill vault constructed in the East Plant Area;

5) the horizontal and vertical limits of excavation will be extended, if necessary, in the areas where additional fill materials are observed and in areas where the verification samples exceed the specified cleanup criteria; and

6) any groundwater encountered during excavation and any surface water that enters the excavation will be collected for treatment or disposal at an appropriate facility.

The strategy and sequencing for excavation and verification sampling of the PCB impacted soils along the Northern Tributary in Parcels 386 and 393 is as follows:

1) remove and clear all miscellaneous surface debris in and around the areas to be excavated;

2) all soils will be excavated from the discrete depth intervals to the limits of excavation established based on the delineation activities;

3) once the limits of the initial excavation, determined based on the delineation, have been reached, verification soil samples will be collected in accordance with the approved SAP (CRA, May 2004) from excavation sidewalls and base to determine if remaining soils meet or exceed the specified cleanup criteria. If bedrock is encountered prior to achievement of the final cleanup goal, verification that no significant visible soil remains will be completed on a visual basis. U.S. EPA will be notified a minimum of 24 hours prior to each sampling event. The specific protocols for determining the number and location of the verification samples is provided in Section 4.7.3. The verification samples may be split with the U.S. EPA or IDEM representatives, at the discretion of the U.S. EPA/IDEM;

4) the horizontal and vertical limits of excavation will be extended, if necessary, in the areas where verification soil samples indicate that remaining soils are above specified cleanup criteria on a statistical basis (see Section 4.7.3). The horizontal and vertical extent of additional excavation will be determined by CRA's field representative, based upon an evaluation of the soil conditions, locations of samples which exceed the specified cleanup criteria, and their respective concentrations;

5) any groundwater encountered during excavation and any surface water that enters the excavation will be collected for treatment or disposal at an appropriate facility;

6) repeat steps 3), 4), and 5) until verification soil sampling demonstrates that remaining soils are statistically at or below specified cleanup criteria; and

7) material which is determined to require cleanup in Parcels 386 and 393, and contains concentrations of PCBs less than 50 mg/kg but greater than or equal to

the cleanup criteria, will be excavated, stockpiled, and sampled prior to loading into a transport vehicle for placement as grading fill in the East Plant Area.

The contractor will only be allowed to backfill the excavation with clean fill material when it has been demonstrated that the excavated area meets the verification and cleanup criteria as described in Section 4.7.3 and all quality assurance requirements of the project QAPP.

4.7.2 SOIL HANDLING

Soil handling will be kept to a minimum to minimize potential fugitive emissions. Soil handling will be limited to necessary screening/segregation of debris that may not be directly placed into transportation units.

Soil identified to contain greater than 1.8 mg/kg total PCB concentrations, but less than 50 mg/kg total PCB, will be excavated, stockpiled, sampled before being loaded onto transport vehicle for placement as grading fill in the East Plant Area. The staging may occur within the excavation limits or at a specially constructed soil staging pad. The staged material will be sampled consistent with the procedures outlined in the Parcel 22 Removal Action Work Plan Addendum 1 that was submitted to the U.S. EPA on 04/26/2005.

Material excavated from areas believed to be greater than 50 mg/kg based on the enclosed delineation sampling results will be direct loaded into a transport vehicle for placement in the landfill vault constructed in the East Plant Area. Whenever possible, the contractor will place excavated fill directly into transportation units to minimize fugitive emissions and multiple handling. Care will be taken when transporting fill from the active work zones to prevent soil tracking.

4.7.3 SOIL CLEANUP GOALS/VERIFICATION SAMPLING

Throughout the soil excavation phase, verification sampling will be conducted in the areas outside the Fill Area to evaluate the limits of the excavation and confirm cleanup goals are met. Soil samples collected from the Parcels will be analyzed for PCBs to determine if the applicable cleanup criterion for PCBs of 1.8 mg/kg has been achieved. A rapid turnaround time for PCB analysis will be utilized for all verification sample analysis to minimize the time that the excavated area is required to remain open. A

minimum of three, 5-point composite samples will be collected from the excavation base (unless bedrock is encountered in the excavation). Where the depth of the outermost sidewall of the excavation is greater than 6 inches, soil samples will also be collected from the side walls. For every 25 linear foot section, a 5-point composite sample with sample aliquots collected approximately every 5 linear feet of sidewall will be collected and analyzed. Additional 5-point composite floor samples will be collected from the excavation floor as necessary so that a minimum 8 samples are collected from each excavation. If one or more composite samples exceed 5 mg/kg PCBs, additional excavation will be completed and the area re-sampled. Statistical analysis of the samples will be completed for all excavations where a minimum of 8 samples are collected. In the event that 8 samples cannot be collected due to the presence of bedrock, verification sampling shall be considered to be complete if all samples are less than 1.8 mg/kg PCBs. Soil verification areas will match the excavation limits unless the excavation size exceeds 7,500 square feet.

If the excavation size exceeds 7,500 square feet, 50 x 50 foot grids will be established and the sampling completed as defined below. All samples collected will be analyzed for PCBs in accordance with the QAPP. The grid will be deemed to meet the cleanup goals if all samples are below the cleanup goal. The statistical analysis of the verification sample results utilized as part of the IM is appropriate for use on Parcel 393, however, it may not be practical due to the small size of the excavation areas.

The proposed procedure for verification sampling involves the following steps:

1) Within each 50-foot by 50-foot grid area, excavate soil from the location where existing site characterization data show PCBs at concentrations exceeding 1.8 mg/kg. Excavation will be conducted to the extent appropriate to achieve a PCB concentration of 1.8 mg/kg or less in each of the post-excavation samples for the grid area. Post-excavation samples for each grid area will consist of one 5-point composite sample collected from the top 4 inches of the ground surface within the grid area. Grids excavated entirely to bedrock, and visually free of soil, will be considered to have zero residual PCBs.

2) Where the depth of the outermost sidewall of the excavation is greater than 6 inches, soil samples will also be collected from the side walls. For every 25 linear foot section, a 5-point composite sample with sample aliquots collected approximately every 5 linear feet of sidewall will be collected and analyzed.

3) Additional 5-point composite floor samples will be collected on a random basis, if necessary, to provide a minimum of 8 samples.

4) If one or more composite samples exceed 5 mg/kg PCBs, additional excavation will be completed and the area re-sampled.

5) If 8 or more samples are collected, and all samples are below 5 mg/kg PCBs, statistical evaluation of the data will be completed. If 8 samples cannot be collected due to the presence of bedrock, verification sampling shall be deemed complete if all samples are below 1.8 mg/kg PCBs.

4.7.4 BACKFILLING/FINAL GRADING

Excavations will be backfilled with clean fill from an off-Site source, as necessary (the Fill Area on Parcels 384/386 will not be backfilled after removal of the fill, but rather graded and seeded at the final elevation). Backfill material will be characterized prior to importation to ensure it is acceptable, based on Target Compound List (TCL), Volatile Organic Compounds (VOCs), TCL Semi-Volatile Organic Compounds (SVOCs), Total Analyte List (TAL), Metals, Cyanide (CN), Herbicides and Pesticides, and PCB analysis. Fill material will be placed in excavations to restoration design grades and compacted using appropriate compaction equipment as directed by CRA's representative. The surface will be backfilled with topsoil. The final grading will be consistent with pre-existing conditions (i.e., ravine) to match the grades outside the limits of excavations, and promote appropriate surface water drainage. Following completion of backfilling activities, the disturbed areas will be restored with vegetation. Appropriate erosion controls will be utilized until the vegetation has been established to provide erosion control.

Once an excavation area has been determined to meet the cleanup goal, the excavation will be backfilled as soon as is practical. Following backfilling, restoration activities will be completed as soon as practical, utilizing appropriate species of grasses and trees. Final restoration activities, including tree planting and seeding, will occur during within the recommended planting season. Temporary erosion control measures (e.g., planting rye grass, straw cover) will be implemented until the appropriate planting season is reached.

4.8 TRANSPORTATION AND STAGING

This section describes the procedures to be employed during the IM to ensure compliance with appropriate federal, state, and local regulations for any material that is

removed, transported, and staged. Procedures outlined in the approved Site WMP will be followed for the transportation, staging, and disposal of materials from the parcels.

A material tracking form will be used to track the movement of each load of excavated material after it leaves the support facility(s) for each parcel. Transport vehicles appropriately licensed to transport designated materials will be utilized to transport material over public roads.

During the transportation activities over public roads, the contractor will ensure that the transportation is conducted in compliance with federal, state, and local regulation concerning shipping materials, including the following:

- the number for each transport vehicle/container is displayed properly;
- the box of the transport vehicle/container is clean of loose debris or foreign material prior to loading;
- for vehicles transporting PCB impacted material: the receiving box or container will be lined with a minimum of one layer of 6 mil polyethylene sheeting continuous along the bottom and sides. The liner shall be placed on the floor, run up the sides, and draped over the sideboards. The liner will be neatly pushed into the corners to prevent tearing during loading and transport. If the contractor can demonstrate that the receiving box is of leakproof construction, an impermeable cover is placed over the container, and that the receiving box or container is made of materials which can be decontaminated, then the lining requirements can be waived;
- materials are loaded in a manner which will not damage the properly placed polyethylene liner; and
- following loading, the liner will be folded over the loaded materials prior to securing with an approved tarpaulin in a manner to prevent loss of materials or fugitive dust emissions.

Flag persons shall be employed as necessary to ensure safe entrance to and exit from public roadways.

Prior to leaving the Site, each transport vehicle that has entered the exclusion zone and has come in contact with potentially impacted material will be decontaminated. The decontamination will be conducted to remove all material on the vehicle exterior (sides, tailgates, etc.), tires, and axles resulting from loading operations. Transportation vehicles will also be decontaminated following off-loading at the staging area or disposal facility, if the vehicle has come in contact with potentially impacted material.

Material removed from the Site will be transported directly to the staging area or disposal facility without change to either the route or mode of transportation. The transportation will be conducted to comply with the requirements outlined in the WMP. Transport vehicles will be marked and placarded in accordance with applicable regulations as outlined in the WMP.

The contractor will prepare daily reports summarizing all materials transported from the Parcel to the staging area or disposal facility including total volume of material transported, and descriptions of the materials transported with material tracking forms. Any total volume of material transported to the staging area will be estimated based on the average volume of the transport vehicle. Any material transported off-Site for disposal will be manifested, as appropriate, and the signed manifests tracked. Notification of receipt of material that has been shipped off-site will be conducted through signed material tracking forms.

4.9 FUGITIVE AIR EMISSIONS MONITORING

For Parcels 384/386 and 393, the contractor will be required to monitor for fugitive air emissions from soil excavation, handling, and backfilling operations. Air monitoring at the work zone boundary locations will be monitored in accordance with Section 12.0 of the HASP. If the real-time monitoring of TSP concentrations, identified the approved AAQMP or amendments to the plan, are exceeded at the work zone boundary locations for Parcels 384/386 and 393, particulate control measures will be implemented. Control measures may include:

- monitoring weather conditions and forecasts;
- installing tire wash station for haul trucks leaving the staging pad area;
- replacing gravel entrances to work areas;
- wetting on-Site haul roads;
- adjusting construction techniques;
- restricting vehicle and truck speed; and
- increasing street sweeping activities.

4.10 SEEPS AND SPRINGS MONITORING

Seep 5013A, and Seep 5013B, located on Parcel 386, were identified during the Phase I Monitoring Program of the Site Source Control Work Plan. Both Seep 5013A and Seep 5013B are located within the Fill Area excavation limit and will be removed as part of the soil excavation activities.

If the seeps were to re-establish after the excavation, CRA will continue the seeps/springs monitoring program to identify the potential for the seeps to contain PCBs that could re-contaminate the creek. Necessary controls will be implemented should the seeps contain PCB levels above the specified criteria.

4.11 WATER MANAGEMENT DURING CONSTRUCTION

If necessary, the contractor will provide an on-Site surface water runoff collection and on-Site storage system for the following:

i) surface water and/or stormwater contacting disturbed work areas;

ii) water collected from construction dewatering;

iii) groundwater entering excavation areas;

iv) surface water collected from the temporary soil stockpile facility; and

v) wastewater from the personnel and equipment decontamination facilities.

Once a sufficient volume of water has been collected, the water will be transported for treatment in the WWTP.

Solids that collect in the tanks will be removed, as necessary, characterized, and properly disposed of in accordance with approved procedures.

5.0 APPROVALS

Due to the size of the work area at Parcel 393 (approximately 0.13 acres), the work at Parcel 393 is exempt from Rule 5 erosion protection permit requirements (minimum 1 acre disturbed area). The work on Parcels 384/386 will be subject to Rule 5 erosion control permit requirements. No other state or federal approvals are required for this activity.

Although there are no required approvals for road use for the City of Bedford, CRA will document road conditions, and will periodically monitor roads and advise the County and City engineers of work progress. Transport vehicle weights will be monitored and limited to levels that do not exceed the load requirements for the applicable transport routes. Should any damage to the road system, related to the remediation, occur, the damage will be repaired.

6.0 REPORTING

Weekly construction meetings will be conducted at the Site during active Site operations. Anticipated participants would include the CRA oversight engineer, the contractor's superintendent, and the Site Health and Safety Officer. Meetings may also include the GM Project Manager and U.S. EPA and IDEM representatives. Minutes of the weekly meetings will be prepared by CRA and distributed to the U.S. EPA, IDEM, and GM.

6.1 PROGRESS REPORTS

Progress reports on the IM will be submitted as part of the quarterly progress report required under the Performance-Based Agreement. The progress reports will contain the following information regarding the IM:

- a description of all significant developments during the reporting period;
- a description of work performed and any problems encountered;
- a summary, including daily and cumulative totals, of all material excavated, staged, and disposed during the reporting period;
- final validated analytical data received during the reporting period; and
- developments anticipated during the next reporting period, including a schedule of work to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

6.2 FINAL CONSTRUCTION CERTIFICATION REPORT

A Final Construction Certification Report for the IM (Certification Report) will be submitted to U.S. EPA for review within 90 calendar days after the completion of all IM activities on Parcels 384/386 and 393 and final validated analytical data. The Certification Report will contain the following:

- a description of the nature and extent of the contamination at the parcels;
- a summary of actions taken to complete the IM;
- a listing of quantities and types of materials removed off-Site for disposal;
- a summary of any field observations made during sampling activities;

- a summary of the analytical results of all sampling and analyses performed;
- Pictures depicting the removal of all visual fill materials;
- a listing of the ultimate destinations of the materials removed;
- copies of all material tracking forms and manifests (if required for material disposed of off-Site) for the materials removed; and
- appendices containing relevant documentation generated during the IM.

The Certification Report will include the start and completion dates of significant activities.

7.0 PROJECT TEAM

A generalized Project Team organization chart is presented on Figure 7.1. The GM Project Manager will coordinate all activities with the U.S. EPA, IDEM, CRA, GM, and the contractor. CRA will provide oversight and third party certification that the construction activities conducted at the Site are in accordance with the Work Plan. CRA will coordinate with contractors and project laboratories to provide additional technical support to the Project Team during the implementation of the Work Plan.

8.0 PROJECT SCHEDULE

A Project schedule for Parcels 384/386 and 393 is presented on Figure 8.1. The schedule presents project tasks in a sequence that will expeditiously implement each Parcel's IM activities once initiated. These activities will be scheduled to coincide with the filling of the East Plant Area vault and placement of grading fill.

9.0 REFERENCES

Conestoga-Rovers & Associates, Inc., Consolidated Health and Safety Plan (HASP), November 2004.

Conestoga-Rovers & Associates, Inc., Quality Assurance Project Plan (QAPP), August 13, 2003.

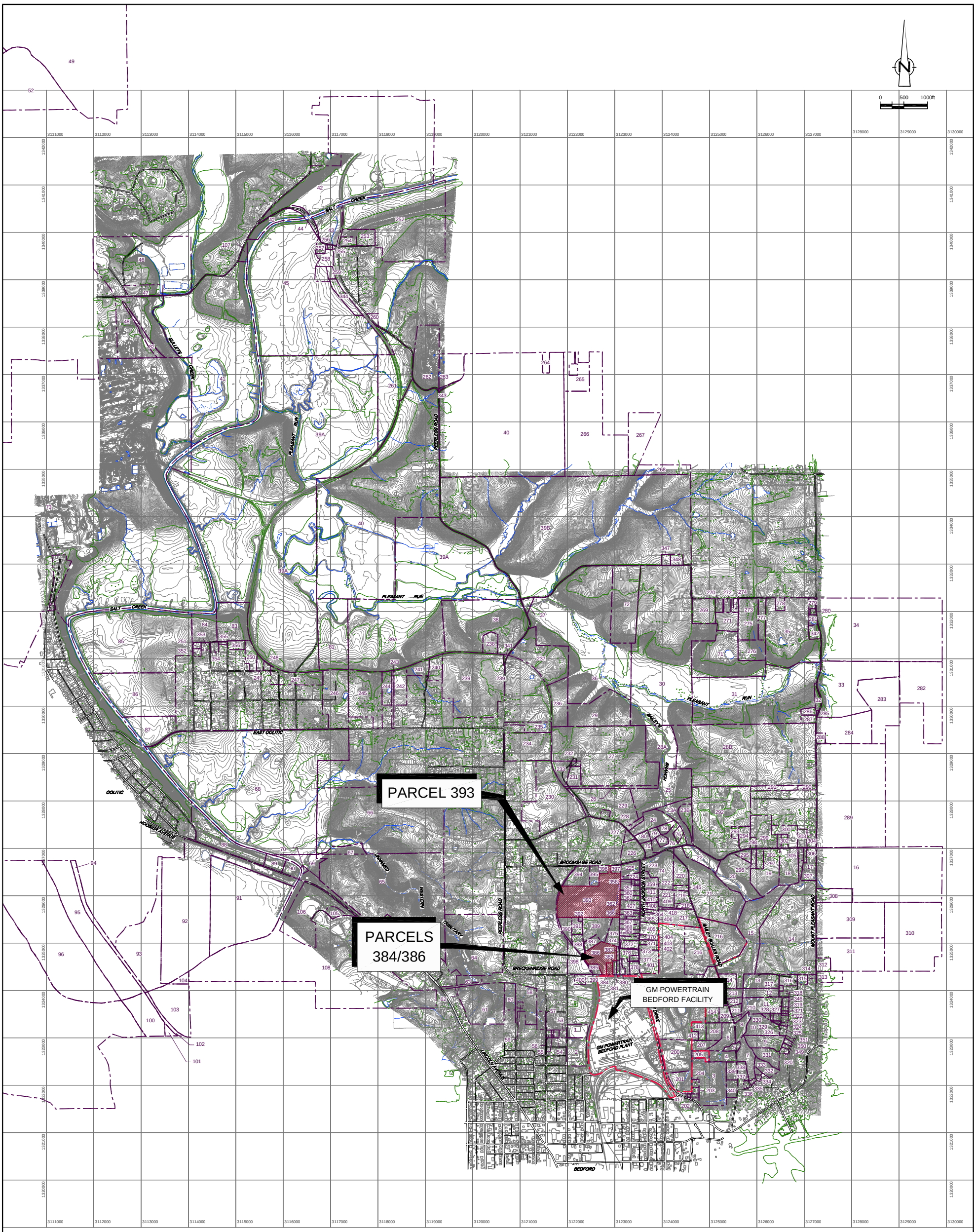
Conestoga-Rovers & Associates, Inc., Upstream Parcels Removal Action Work Plan, July 18, 2003.

Conestoga-Rovers & Associates, Inc., Downstream Parcels Removal Action Work Plan, May 28, 2004.

Indiana Department of Environmental Quality (IDEM). February 2001, Risk Integrated System of Closure Technical Resource Guidance Document.

U.S. Environmental Protection Agency (U.S. EPA). 2004. Region 9. "Preliminary Remediation Goals".

U.S. Environmental Protection Agency (U.S. EPA). 2002. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10. December.



LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / PAVED AREAS
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE PARCEL BOUNDARY
- APPROXIMATE GM PROPERTY BOUNDARY
- APPROXIMATE STUDY AREA

NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

Nº	Revision	Date	Initial

SCALE VERIFICATION

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

Approved

GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

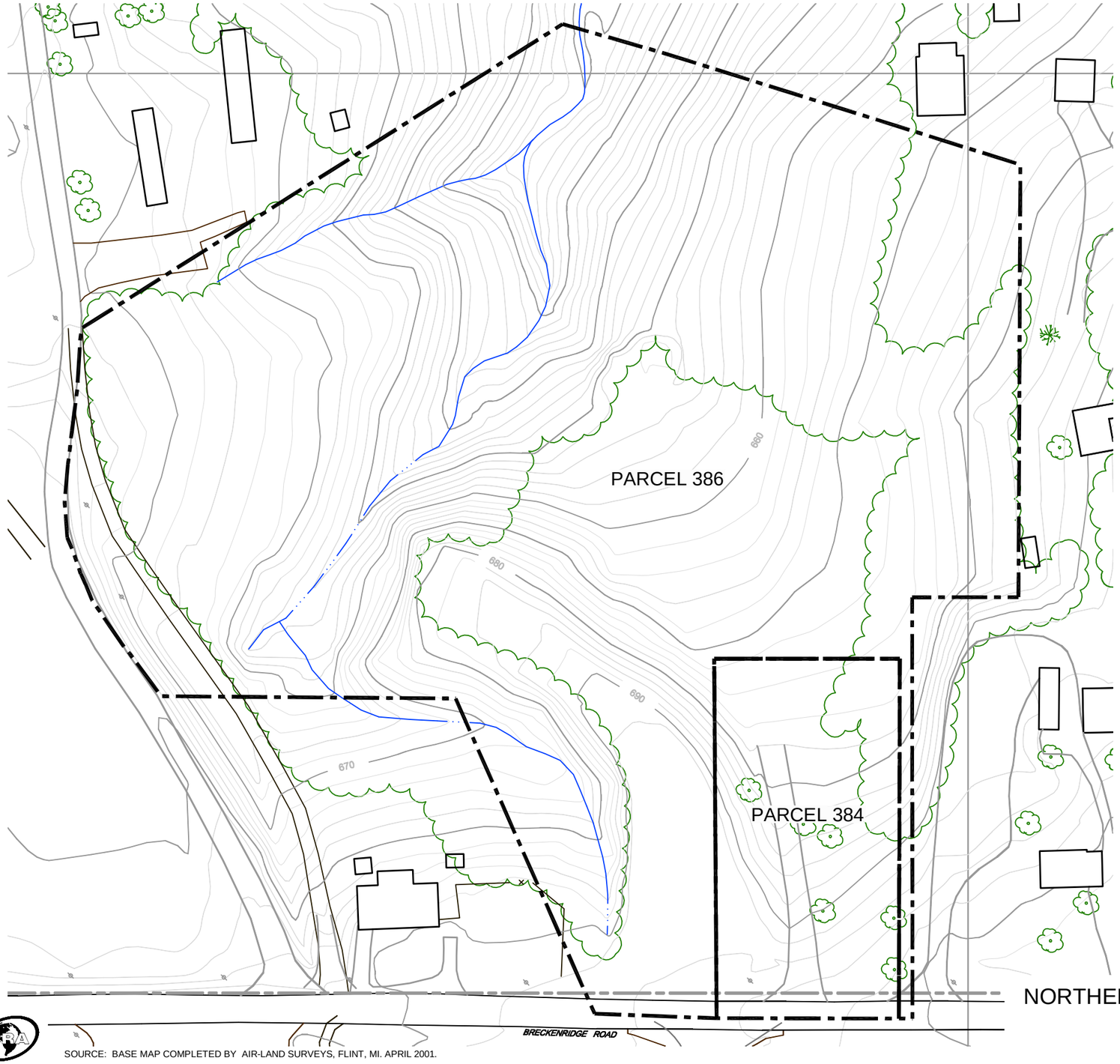
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN

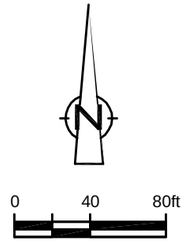
SITE LOCATION

CONESTOGA-ROVERS & ASSOCIATES

Source Reference: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001

Project Manager:	Reviewed By:	Date:	
J.D.	J.S.	JANUARY 2006	
Scale: AS SHOWN	Project Nº: 13968-00	Report Nº: 098	Drawing Nº: figure 1.1





LEGEND

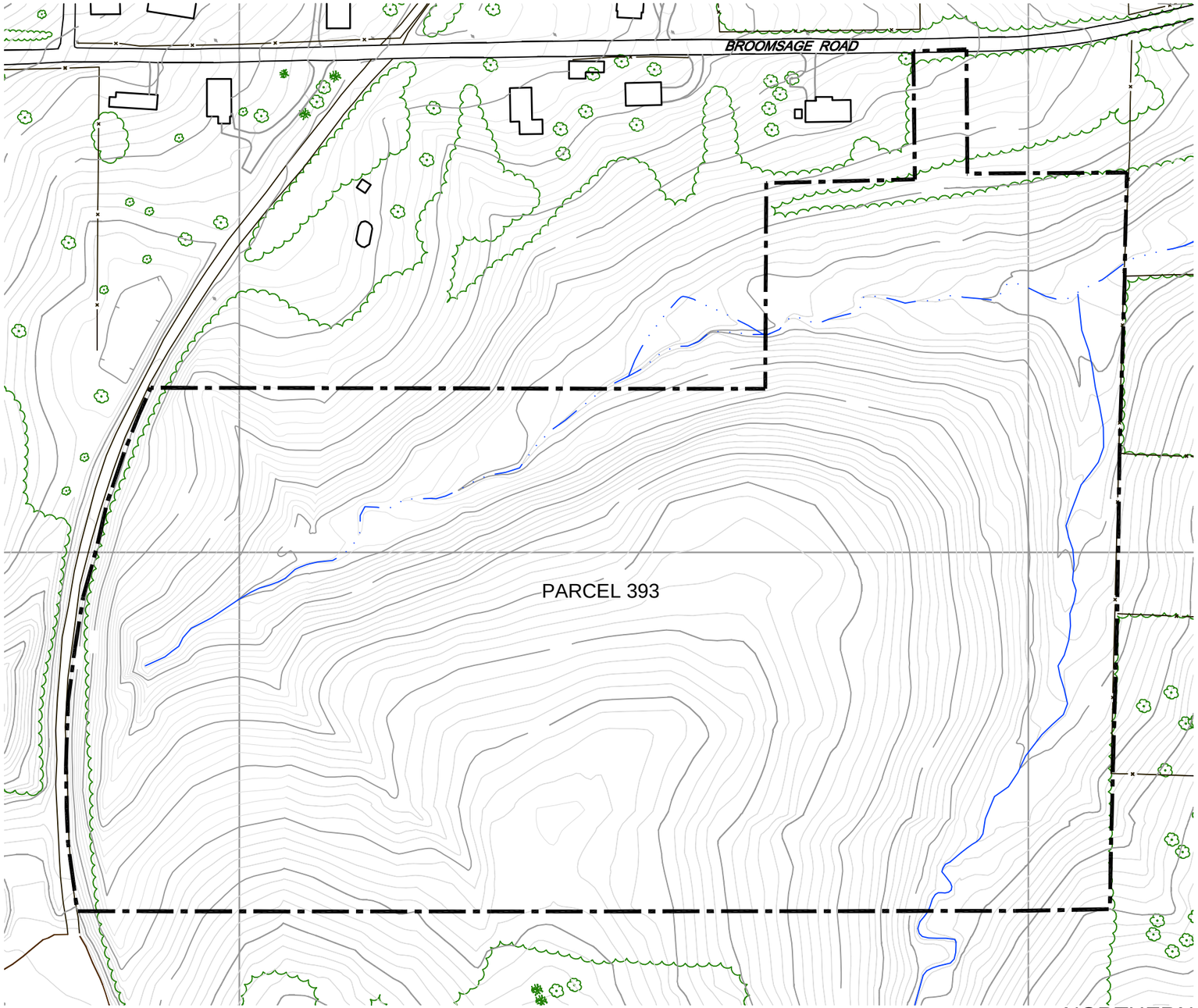
- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / UNPAVED AREAS
- ROADS / PAVED AREAS
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE PARCEL BOUNDARY

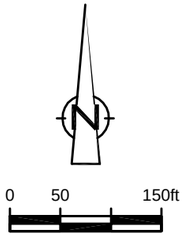
NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001.

figure 1.2

SITE PLAN
PARCELS 384/386
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana





LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / UNPAVED AREAS
- ROADS / PAVED AREAS
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE PARCEL BOUNDARY

NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

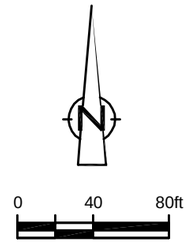
SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001.

figure 1.3

SITE PLAN
PARCEL 393
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana

13968-00(098)GN-WA003 NOV 29/2005

SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001.



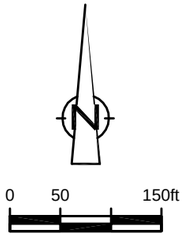
LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / UNPAVED AREAS
- ROADS / PAVED AREAS
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE PARCEL BOUNDARY

NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

figure 1.4

AERIAL PHOTOGRAPH
PARCELS 384/386
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana



LEGEND

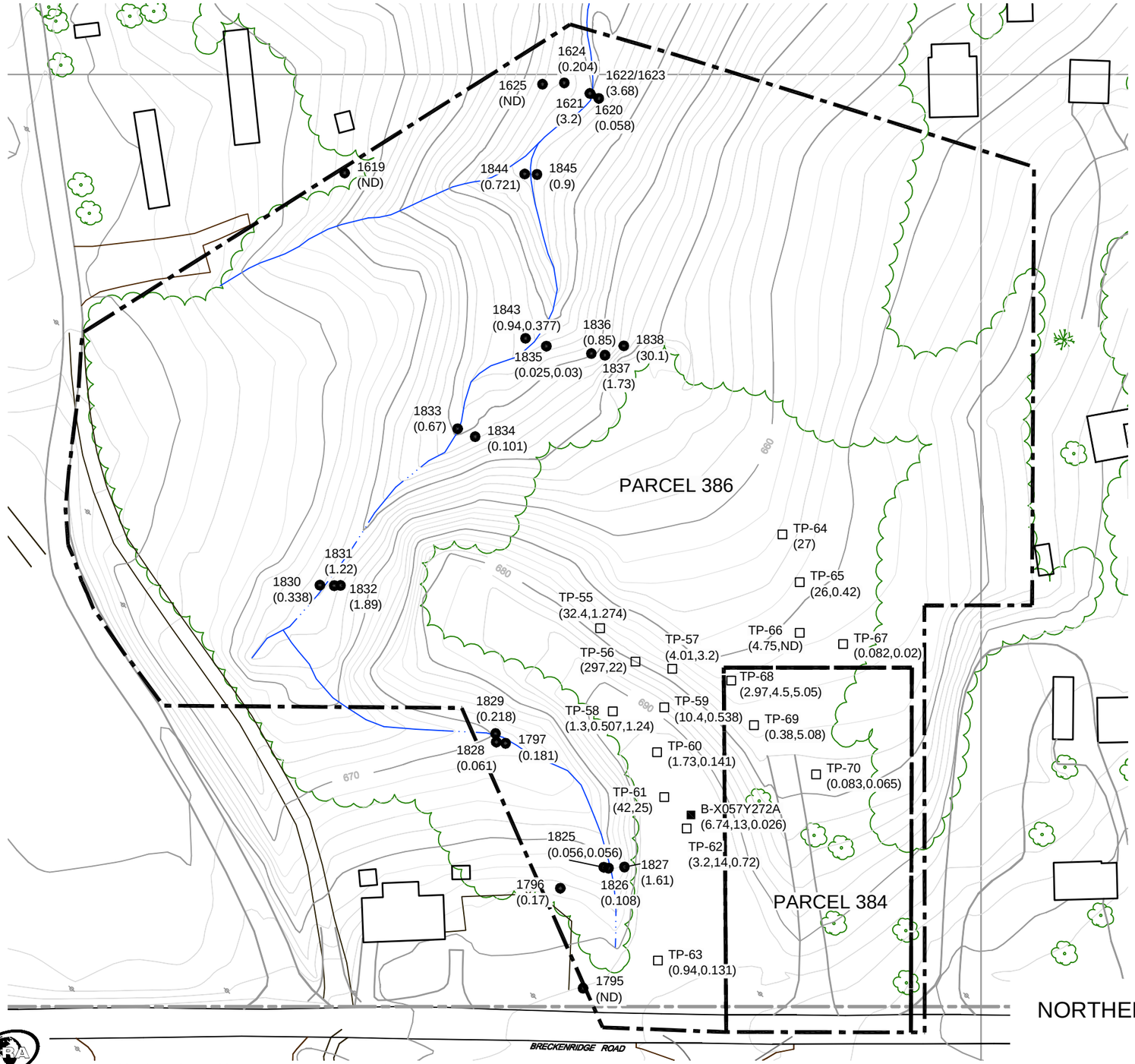
- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / UNPAVED AREAS
- ROADS / PAVED AREAS
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE PARCEL BOUNDARY

NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001.

figure 1.5

AERIAL PHOTOGRAPH
PARCEL 393
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana



NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001.

figure 2.1

SAMPLING LOCATIONS AND RESULTS
PARCELS 384/386
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana

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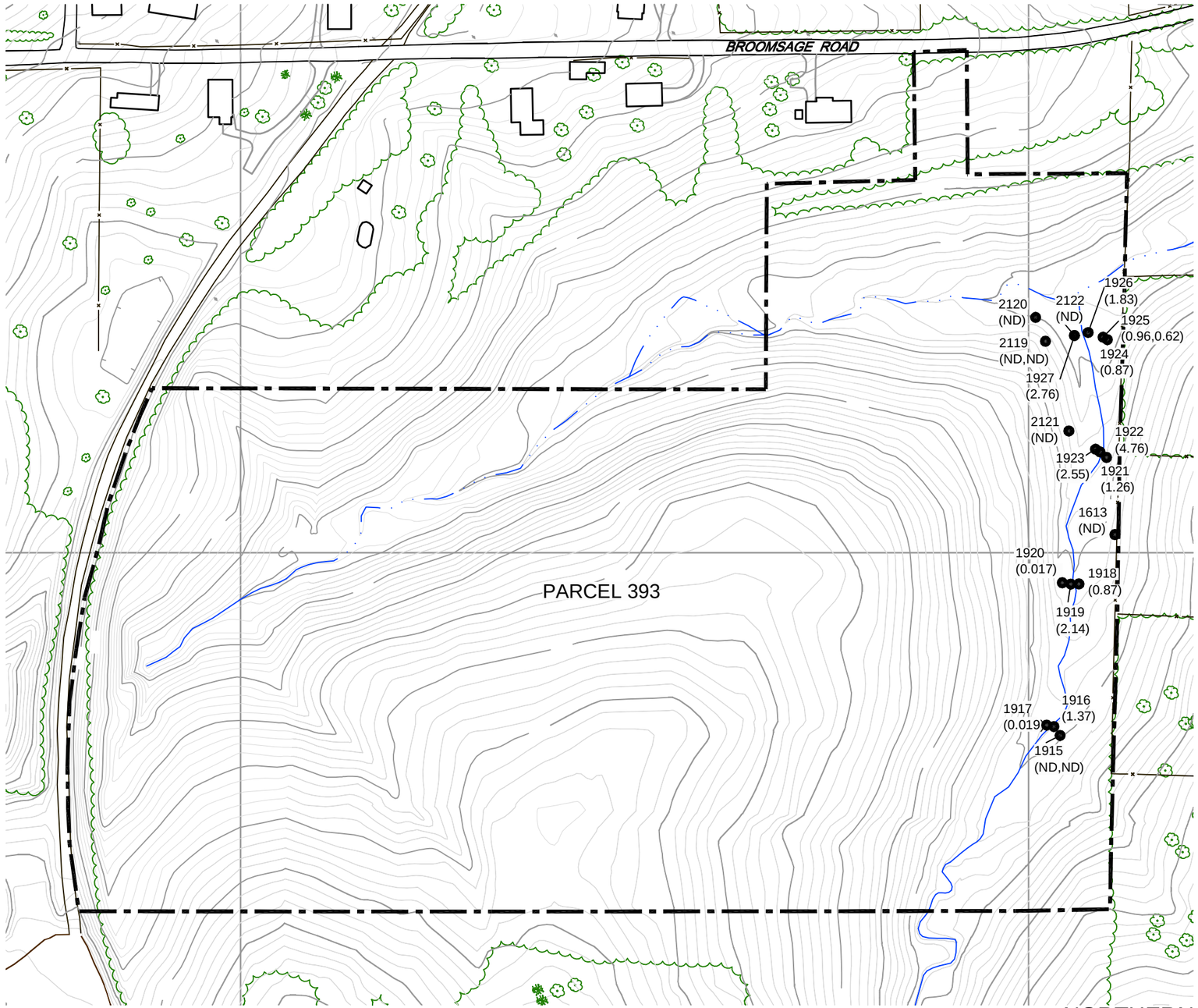
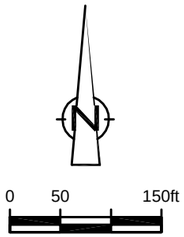




LEGEND

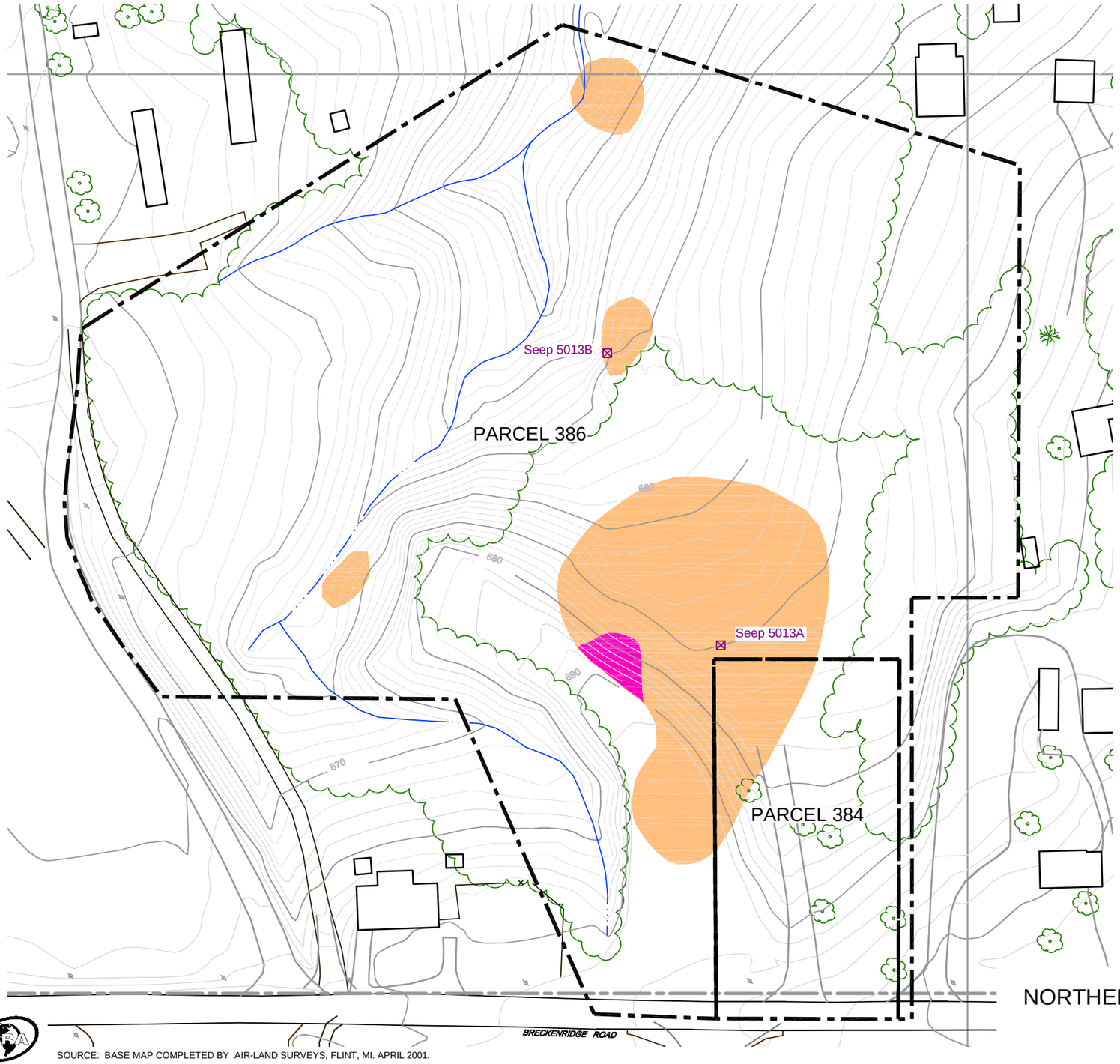
- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / UNPAVED AREAS
- ROADS / PAVED AREAS
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE PARCEL BOUNDARY
- 1925 — SOIL SAMPLE LOCATION (2002)
- (0.87) — PCB CONCENTRATION (ppm)

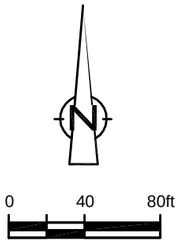
NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001.

figure 2.2

SAMPLING LOCATIONS AND RESULTS
PARCEL 393
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana





LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / UNPAVED AREAS
- ROADS / PAVED AREAS
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE PARCEL BOUNDARY
- RED INDICATES SOIL SAMPLE RESULT EQUAL TO OR GREATER THAN 50 PPM (2004)
- ORANGE INDICATES SOIL SAMPLE RESULT EQUAL TO OR GREATER THAN 1.8 PPM AND LESS THAN 50 PPM (2004)
- SEEP SAMPLE LOCATION

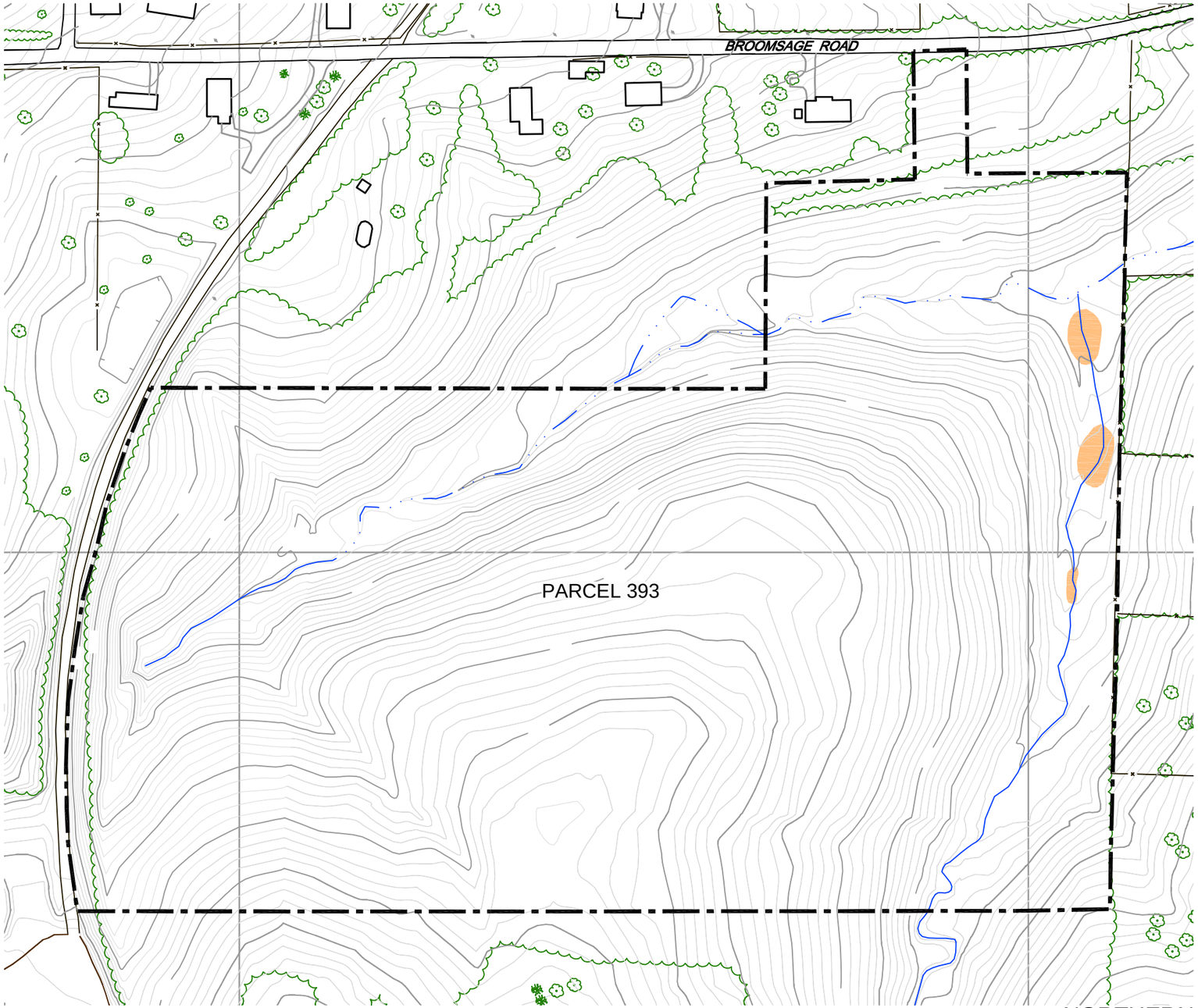
NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001.

figure 2.3

PCB ISOCONCENTRATIONS
PARCELS 384/386
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana

13968-00(098)GN-WA008 DEC 19/2005



N

0 50 150ft

LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / UNPAVED AREAS
- ROADS / PAVED AREAS
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE PARCEL BOUNDARY
- ORANGE INDICATES SOIL SAMPLE RESULT EQUAL TO OR GREATER THAN 1.8 PPM AND LESS THAN 50 PPM (2002)

NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001.

figure 2.4

PCB ISOCONCENTRATIONS
PARCEL 393
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana

13968-00(098)GN-WA009 NOV 29/2005

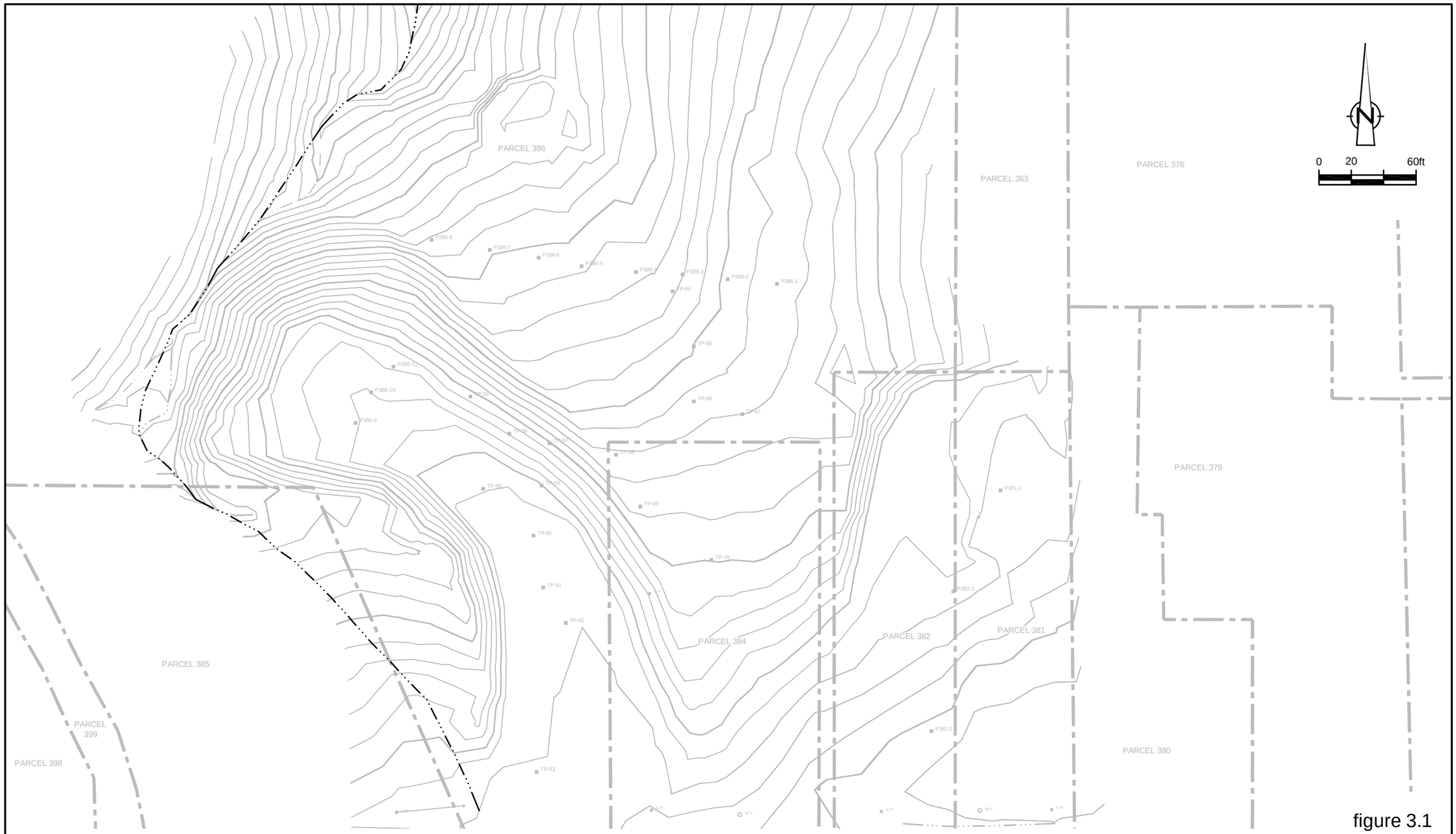


figure 3.1

LEGEND

EXISTING GROUND CONTOURS

EXISTING CONDITIONS
REGRADING/CAPPING OF PARCELS 384/386
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana

13968-00(098)GN-WA018 NOV 29/2005

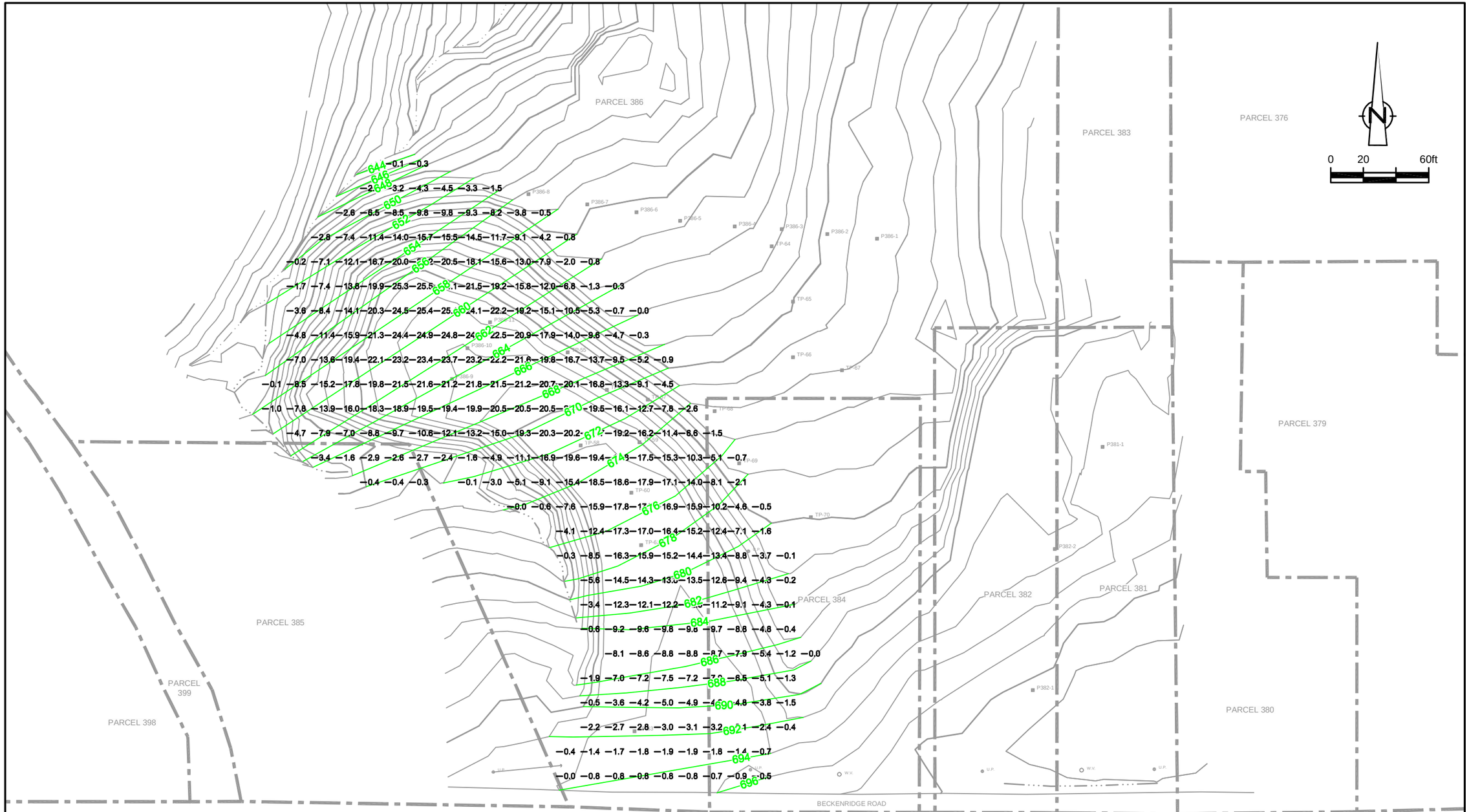


figure 3.2

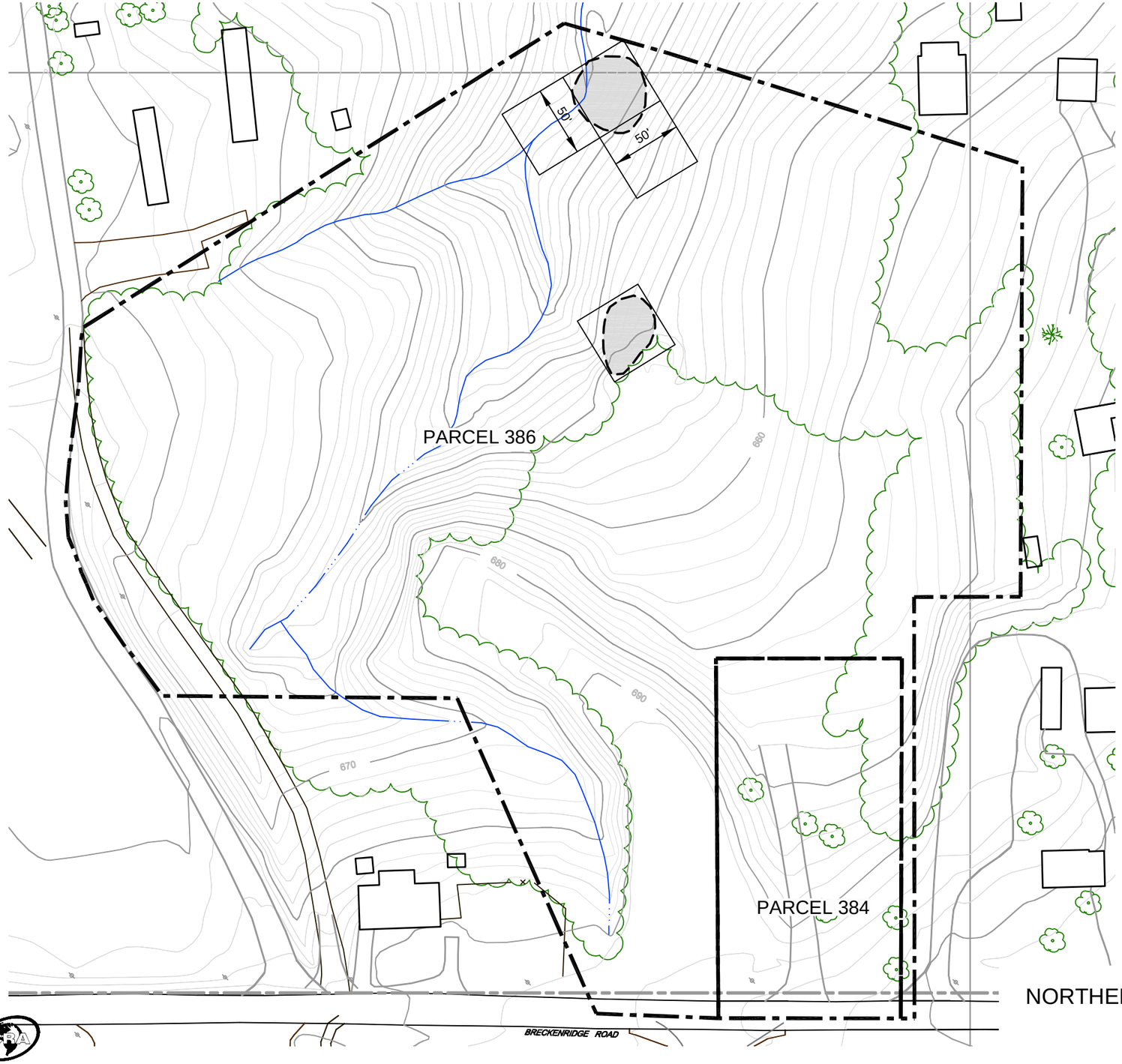
PROPOSED GRADING FOLLOWING EXCAVATION
OF FILL AREA ON PARCELS 384 AND 386
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana

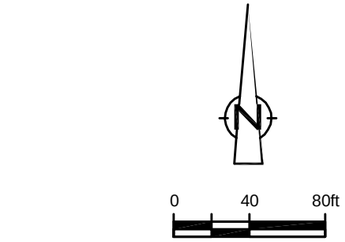
LEGEND

EXISTING GROUND CONTOURS
PROPOSED EXCAVATION CONTOURS

NOTE:
VOLUME OF MATERIAL REQUIRING EXCAVATION=25 300 CUBIC YARDS.

13968-00(098)GN-WA017 NOV 29/2005





LEGEND

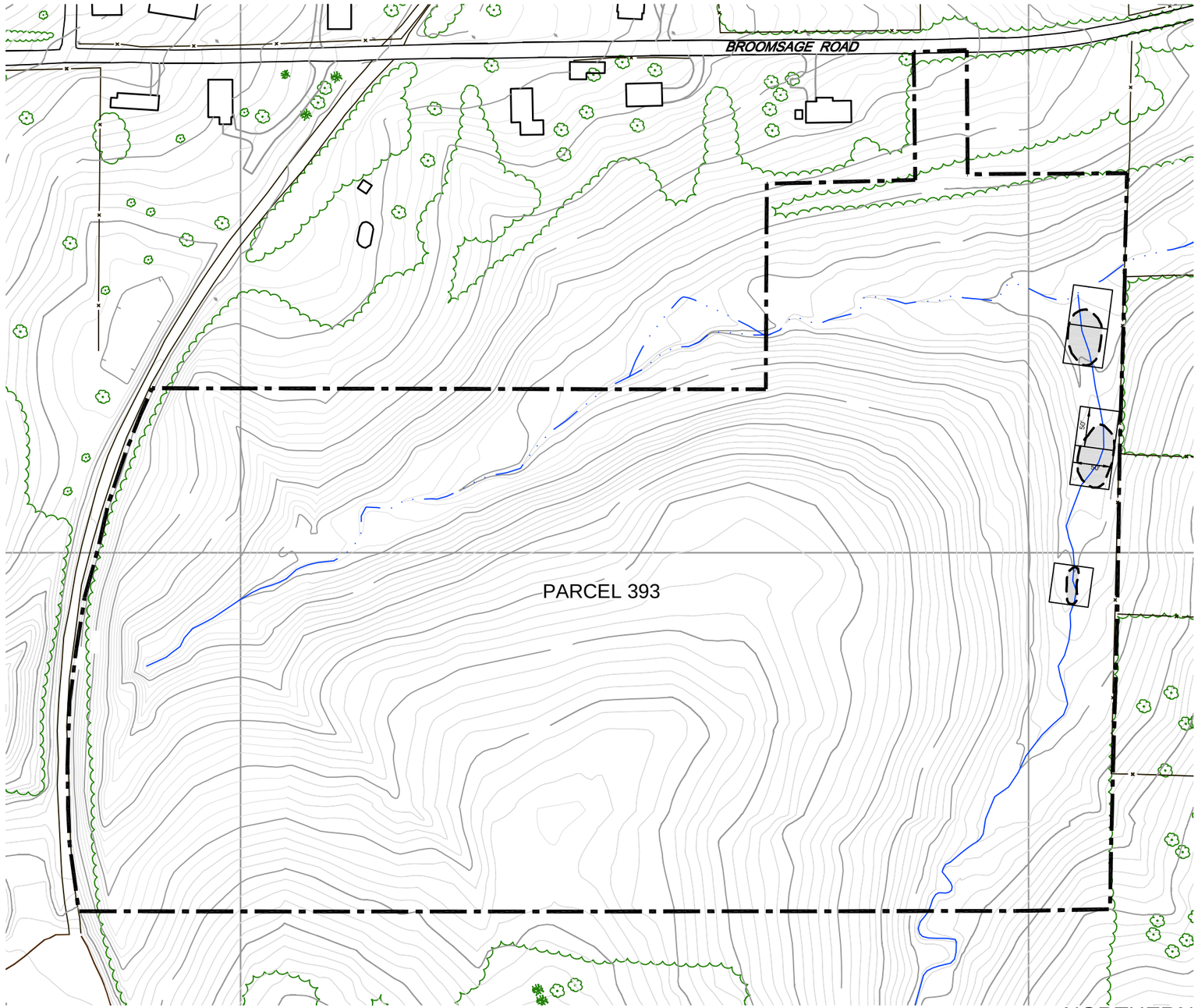
- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / UNPAVED AREAS
- ROADS / PAVED AREAS
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE PARCEL BOUNDARY
- ANTICIPATED AREA OF SOIL EXCAVATION
- SOIL VERIFICATION SAMPLING GRID
- TYPICAL 5-POINT COMPOSITE SAMPLING PLAN
- VERIFICATION AREA

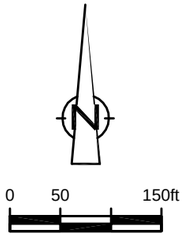
NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

figure 4.1

SOIL VERIFICATION SAMPLING GRID
PARCELS 384/386
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILTY
Bedford, Indiana

13968-00(098)GN-WA010 NOV 29/2005





LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / UNPAVED AREAS
- ROADS / PAVED AREAS
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE PARCEL BOUNDARY
- ANTICIPATED AREA OF SOIL EXCAVATION
- SOIL VERIFICATION SAMPLING GRID
- TYPICAL 5-POINT COMPOSITE SAMPLING PLAN

NOTE: PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001.

figure 4.2

SOIL VERIFICATION SAMPLING GRID
PARCEL 393
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana

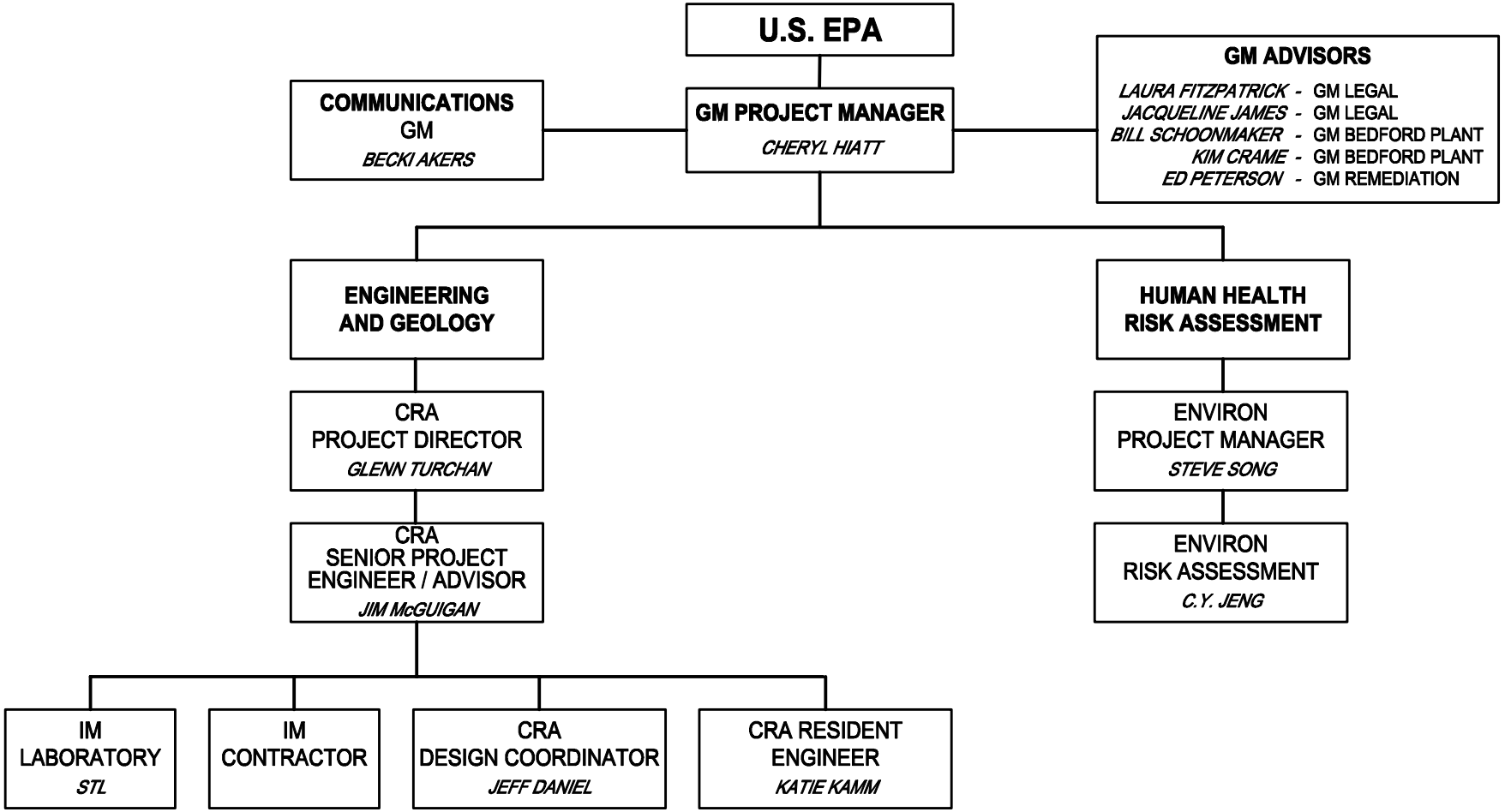
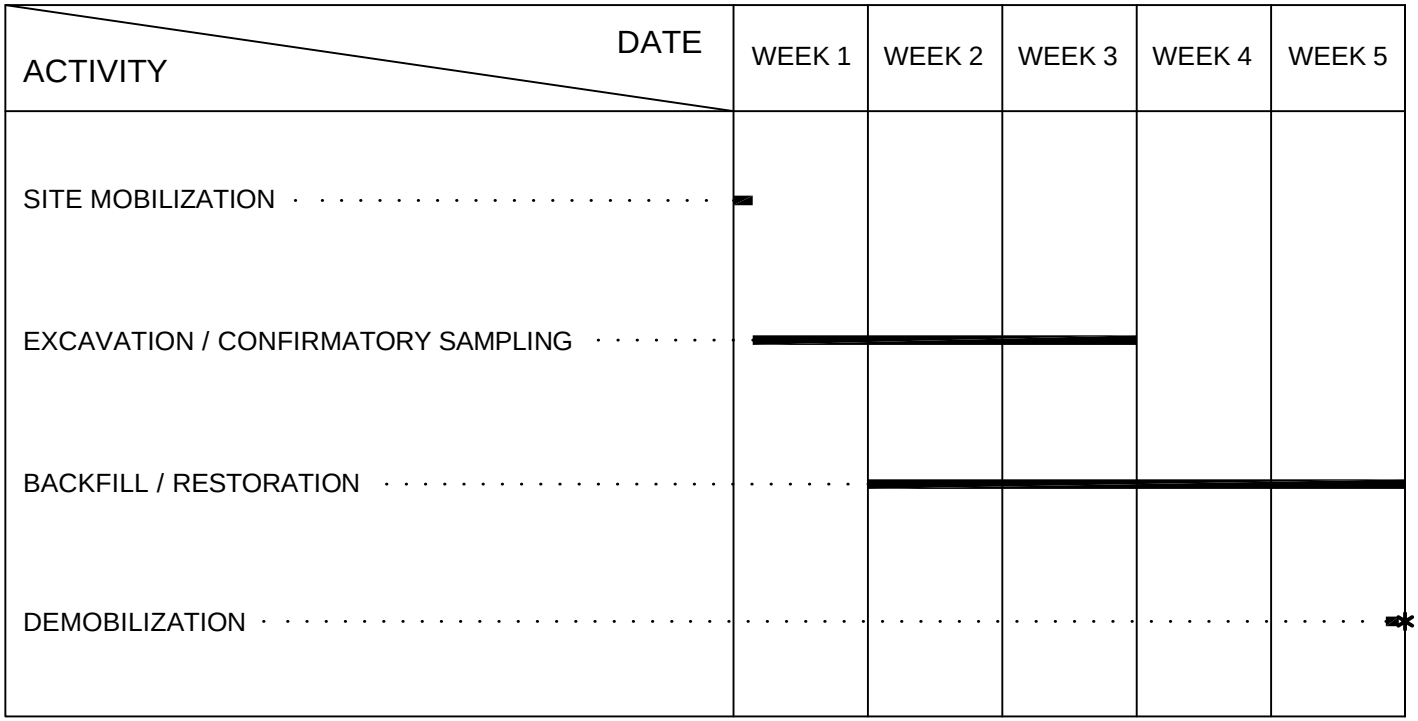


figure 7.1

PROJECT TEAM ORGANIZATION
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana



NOTES

SCHEDULE FOR IMPLEMENTATION AND COMPLETION IS DEPENDENT UPON THE FOLLOWING FACTORS:

a) INCLEMENT WEATHER CONDITIONS DURING EXCAVATION WORK (e.g. RAIN, SEVERE WEATHER).

b) PLANTING ACTIVITIES MAY CONTINUE BEYOND THE REFERENCED SCHEDULE, AS REQUIRED.

c) IF PCB IMPACTED SPRING IS ENCOUNTERED, ADDITIONAL TIME WILL BE REQUIRED FOR CONTROL AND MONITORING.

d) DOES NOT INCLUDE POST-CONSTRUCTION MONITORING, IF REQUIRED.

e) SCHEDULE IS BASED ON COMPLETING ACTIVITIES SEQUENTIALLY. ACTIVITIES ON EACH PARCEL MAY BE CONDUCTED CONCURRENTLY TO REDUCE SCHEDULE TIME.

LEGEND

CONTINUOUS ACTIVITY

* MAJOR MILESTONE

figure 8.1

PROJECT SCHEDULE
NORTHERN TRIBUTARY INTERIM MEASURE WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
Bedford, Indiana

TABLE 2.1

ANALYTICAL RESULTS SUMMARY
PARCEL 384/386
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*B-X057Y272A*	*B-X057Y272A*	*B-X057Y272A*	*TP-55*	*TP-55*	*TP-56*	*TP-56*	*TP-57*
Sample ID:		*S-040704-JC-044*	*S-040704-JC-045*	*S-040704-JC-046*	*S-TP-55-060904-JC-100*	*S-TP-55-060904-JC-099*	*S-TP-56-060904-JC-102*	*S-TP-56-060904-JC-101*	*S-TP-57-060904-JC-098*
Sample Date:		*4/7/2004*	*4/7/2004*	*4/7/2004*	*6/9/2004*	*6/9/2004*	*6/9/2004*	*6/9/2004*	*6/9/2004*
Sample Depth (feet):		*(0-2)*	*(6-8)*	*(26-28.4)*	*(6-8)*	*(6-8)*	*(10-12)*	*(12-12)*	*(10-12)*
Parameter	*Unit*								
PCBs									
Aroclor-1016 (PCB-1016)	ug/Kg	ND (730)	ND (4100)	ND (42)	ND (3800)	ND (77)	ND (38000)	ND (2100)	ND (370)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (730)	ND (4100)	ND (42)	ND (3800)	ND (77)	ND (38000)	ND (2100)	ND (370)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (730)	ND (4100)	ND (42)	ND (3800)	ND (77)	ND (38000)	ND (2100)	ND (370)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (730)	13000	ND (42)	ND (3800)	ND (77)	ND (38000)	22000	ND (370)
Aroclor-1248 (PCB-1248)	ug/Kg	6000	ND (4100)	26 J	29000	1200	240000	ND (2100)	3300
Aroclor-1254 (PCB-1254)	ug/Kg	ND (730)	ND (4100)	ND (42)	ND (3800)	ND (77)	ND (38000)	ND (2100)	ND (370)
Aroclor-1260 (PCB-1260)	ug/Kg	740	ND (4100)	ND (42)	3400 J	74 J	57000	ND (2100)	710
Sum of Detected PCBs (ND=0)	ug/Kg	6740	13000	26 J	32400 J	1274 J	297000	22000	4010
PCBs (dissolved)									
Aroclor-1016 (PCB-1016), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260), dissolved	ug/L	-	-	-	-	-	-	-	-
Sum of Detected PCBs (ND=0)	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:
J = The reported laboratory result is qualified as an estimated value
* = The reported results are in "ug/L"
NA = Not Applicable

TABLE 2.1

ANALYTICAL RESULTS SUMMARY
PARCEL 384/386
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*TP-57*	*TP-58*	*TP-58*	*TP-58*	*TP-59*	*TP-59*	*TP-60*	*TP-60*
Sample ID:		*S-TP-57-060904-JC-097*	*S-TP-58-061004-JC-104*	*S-TP-58-061004-JC-105*	*S-TP-58-061004-JC-103*	*S-TP-59-061004-JC-107*	*S-TP-59-061004-JC-106*	*S-TP-60-061004-JC-109*	*S-TP-60-061004-JC-108*
Sample Date:		*6/9/2004*	*6/10/2004*	*6/10/2004*	*6/10/2004*	*6/10/2004*	*6/10/2004*	*6/10/2004*	*6/10/2004*
Sample Depth (feet):		*(12-12)*	*(8-10.5)*	*(8-10.5)* *dup of S-TP-58-061004-JC-104*	*(10.5-10.5)*	*(10-12)*	*(12-12)*	*(9-11)*	*(11-11)*
Parameter	*Unit*								
PCBs									
Aroclor-1016 (PCB-1016)	ug/Kg	ND (410)	ND (200)	ND (39)	ND (82)	ND (2000)	ND (41)	ND (200)	ND (42)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (410)	ND (200)	ND (39)	ND (82)	ND (2000)	ND (41)	ND (200)	ND (42)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (410)	ND (200)	ND (39)	ND (82)	ND (2000)	ND (41)	ND (200)	ND (42)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (410)	ND (200)	ND (39)	ND (82)	ND (2000)	ND (41)	ND (200)	ND (42)
Aroclor-1248 (PCB-1248)	ug/Kg	3200	1000	420	1000	8700	460	1300	120
Aroclor-1254 (PCB-1254)	ug/Kg	ND (410)	ND (200)	ND (39)	ND (82)	ND (2000)	ND (41)	ND (200)	ND (42)
Aroclor-1260 (PCB-1260)	ug/Kg	ND (410)	300	87	240	1700 J	78	430	21 J
Sum of Detected PCBs (ND=0)	ug/Kg	3200	1300	507	1240	10400 J	538	1730	141 J
PCBs (dissolved)									
Aroclor-1016 (PCB-1016), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260), dissolved	ug/L	-	-	-	-	-	-	-	-
Sum of Detected PCBs (ND=0)	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:
J = The reported laboratory result is qualified as an estimated value
* = The reported results are in "ug/L"
NA = Not Applicable

TABLE 2.1

ANALYTICAL RESULTS SUMMARY
PARCEL 384/386
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*TP-61*	*TP-61*	*TP-62*	*TP-62*	*TP-62*	*TP-63*	*TP-63*	*TP-64*
Sample ID:		*S-TP-61-061404-JC-111*	*S-TP-61-061404-JC-110*	*S-TP-62-061404-JC-113*	*S-TP-62-061404-JC-114*	*S-TP-62-061404-JC-112*	*S-TP-63-061404-JC-116*	*S-TP-63-061404-JC-115*	*S-TP-64-060804-JC-082*
Sample Date:		*6/14/2004*	*6/14/2004*	*6/14/2004*	*6/14/2004*	*6/14/2004*	*6/14/2004*	*6/14/2004*	*6/8/2004*
Sample Depth (feet):		*(10-12)*	*(12-12)*	*(10-12)*	*(10-12)*	*(12-12)*	*(4.5-6.5)*	*(6.5-6.5)*	*NA*
					dup of S-TP-62-061404-JC-113				
Parameter	***Unit***								
PCBs									
Aroclor-1016 (PCB-1016)	ug/Kg	ND (3800)	ND (2000)	ND (420)	ND (2000)	ND (81)	ND (200)	ND (45)	ND (4300)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (3800)	ND (2000)	ND (420)	ND (2000)	ND (81)	ND (200)	ND (45)	ND (4300)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (3800)	ND (2000)	ND (420)	ND (2000)	ND (81)	ND (200)	ND (45)	ND (4300)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (3800)	ND (2000)	ND (420)	ND (2000)	ND (81)	ND (200)	ND (45)	ND (4300)
Aroclor-1248 (PCB-1248)	ug/Kg	42000	25000	3200	14000	720	780	110	27000
Aroclor-1254 (PCB-1254)	ug/Kg	ND (3800)	ND (2000)	ND (420)	ND (2000)	ND (81)	ND (200)	ND (45)	ND (4300)
Aroclor-1260 (PCB-1260)	ug/Kg	ND (3800)	ND (2000)	ND (420)	ND (2000)	ND (81)	160 J	21 J	ND (4300)
Sum of Detected PCBs (ND=0)	ug/Kg	42000	25000	3200	14000	720	940 J	131 J	27000
PCBs (dissolved)									
Aroclor-1016 (PCB-1016), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260), dissolved	ug/L	-	-	-	-	-	-	-	-
Sum of Detected PCBs (ND=0)	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:
J = The reported laboratory result is qualified as an estimated value
* = The reported results are in "ug/L"
NA = Not Applicable

TABLE 2.1

ANALYTICAL RESULTS SUMMARY
PARCEL 384/386
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*TP-65*	*TP-65*	*TP-66*	*TP-66*	*TP-67*	*TP-67*	*TP-68*	*TP-68*
Sample ID:		*S-TP-65-060804-JC-083*	*S-TP-65-060804-JC-084*	*S-TP-66-060804-JC-085*	*S-TP-66-060804-JC-086*	*S-TP-67-060804-JC-088*	*S-TP-67-060804-JC-087*	*S-TP-68-060904-JC-093*	*S-TP-68-060904-JC-094*
Sample Date:		*6/8/2004*	*6/8/2004*	*6/8/2004*	*6/8/2004*	*6/8/2004*	*6/8/2004*	*6/9/2004*	*6/9/2004*
Sample Depth (feet):		*(5-7)*	*(7-7)*	*(4-6)*	*(6-6)*	*(4-6)*	*(6-6)*	*(1-3)*	*(1-3)* *dup of S-TP-68-060904-JC-093*
Parameter	***Unit***								
PCBs									
Aroclor-1016 (PCB-1016)	ug/Kg	ND (4800)	ND (45)	ND (410)	ND (43)	ND (43)	ND (45)	ND (230)	ND (430)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (4800)	ND (45)	ND (410)	ND (43)	ND (43)	ND (45)	ND (230)	ND (430)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (4800)	ND (45)	ND (410)	ND (43)	ND (43)	ND (45)	ND (230)	ND (430)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (4800)	ND (45)	ND (410)	ND (43)	ND (43)	ND (45)	ND (230)	ND (430)
Aroclor-1248 (PCB-1248)	ug/Kg	26000	420	4400	ND (43)	82	20 J	2700	3400
Aroclor-1254 (PCB-1254)	ug/Kg	ND (4800)	ND (45)	ND (410)	ND (43)	ND (43)	ND (45)	ND (230)	ND (430)
Aroclor-1260 (PCB-1260)	ug/Kg	ND (4800)	ND (45)	350 J	ND (43)	ND (43)	ND (45)	270	1100
Sum of Detected PCBs (ND=0)	ug/Kg	26000	420	4750 J	ND	82	20 J	2970	4500
PCBs (dissolved)									
Aroclor-1016 (PCB-1016), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260), dissolved	ug/L	-	-	-	-	-	-	-	-
Sum of Detected PCBs (ND=0)	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:
J = The reported laboratory result is qualified as an estimated value
* = The reported results are in "ug/L"
NA = Not Applicable

TABLE 2.1

ANALYTICAL RESULTS SUMMARY
PARCEL 384/386
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*TP-68*	*TP-69*	*TP-69*	*TP-70*	*TP-70*	*1619*	*1620*	*1621*
Sample ID:		*S-TP-68-060904-JC-092*	*S-TP-69-060904-JC-096*	*S-TP-69-060904-JC-095*	*S-TP-70-060804-JC-090*	*S-TP-70-060804-JC-089*	*S-00-040802-GS-1619*	*S-00-040802-GS-1620*	*S-00-040802-GS-1621*
Sample Date:		*6/9/2004*	*6/9/2004*	*6/9/2004*	*6/8/2004*	*6/8/2004*	*4/8/2002*	*4/8/2002*	*4/8/2002*
Sample Depth (feet):		*(3-3)*	*(4-6)*	*(6-6)*	*(2-4)*	*(4-4)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*
Parameter	*Unit*								
PCBs									
Aroclor-1016 (PCB-1016)	ug/Kg	ND (460)	ND (43)	ND (430)	ND (46)	ND (45)	ND (44)	ND (43)	ND (480)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (460)	ND (43)	ND (430)	ND (46)	ND (45)	ND (44)	ND (43)	ND (480)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (460)	ND (43)	ND (430)	ND (46)	ND (45)	ND (44)	ND (43)	ND (480)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (460)	380 J	ND (430)	ND (46)	ND (45)	ND (44)	ND (43)	ND (480)
Aroclor-1248 (PCB-1248)	ug/Kg	4300	ND (43)	4700	56	65 J	ND (44)	39 J	2700
Aroclor-1254 (PCB-1254)	ug/Kg	ND (460)	ND (43)	ND (430)	ND (46)	ND (45)	ND (44)	ND (43)	ND (480)
Aroclor-1260 (PCB-1260)	ug/Kg	750	ND (43)	380 J	27 J	ND (45)	ND (44)	19 J	500
Sum of Detected PCBs (ND=0)	ug/Kg	5050	380 J	5080 J	83 J	65 J	0	58 J	3200
PCBs (dissolved)									
Aroclor-1016 (PCB-1016), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260), dissolved	ug/L	-	-	-	-	-	-	-	-
Sum of Detected PCBs (ND=0)	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:
J = The reported laboratory result is qualified as an estimated value
* = The reported results are in "ug/L"
NA = Not Applicable

TABLE 2.1

ANALYTICAL RESULTS SUMMARY
PARCEL 384/386
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*1622*	*1623*	*1624*	*1625*	*1796*	*1797*	*1825*	*1825*
Sample ID:		*SD-00-040802-GS-1622*	*SW-00-040802-LM-1623**	*S-00-040802-GS-1624*	*S-00-040802-GS-1625*	*S-00-050602-GS-1796*	*S-00-050602-LM-1797*	*S-00-050802-GS-1825*	*S-00-050802-GS-1825A*
Sample Date:		*4/8/2002*	*4/8/2002*	*4/8/2002*	*4/8/2002*	*5/6/02*	*5/6/02*	*5/8/2002*	*5/8/2002*
Sample Depth (feet):		*NA*	*NA*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*
									dup of S-00-050802-GS-1825
Parameter	*Unit*								
PCBs									
Aroclor-1016 (PCB-1016)	ug/Kg	ND (600)	ND (0.20)	ND (52)	ND (43)	ND (42)	ND (48)	ND (46)	ND (47)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (600)	ND (0.20)	ND (52)	ND (43)	ND (42)	ND (48)	ND (46)	ND (47)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (600)	ND (0.40)	ND (52)	ND (43)	ND (42)	ND (48)	ND (46)	ND (47)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (600)	ND (0.20)	ND (52)	ND (43)	ND (42)	ND (48)	ND (46)	ND (47)
Aroclor-1248 (PCB-1248)	ug/Kg	3100	0.16 J	170	ND (43)	170	140	39 J	37 J
Aroclor-1254 (PCB-1254)	ug/Kg	ND (600)	ND (0.20)	ND (52)	ND (43)	ND (42)	ND (48)	ND (46)	ND (47)
Aroclor-1260 (PCB-1260)	ug/Kg	580 J	ND (0.20)	34 J	ND (43)	ND (42)	41 J	17 J	19 J
Sum of Detected PCBs (ND=0)	ug/Kg	3680 J	0.16 J	204 J	0	170	181 J	56 J	56 J
PCBs (dissolved)									
Aroclor-1016 (PCB-1016), dissolved	ug/L	-	ND (0.20)	-	-	-	-	-	-
Aroclor-1221 (PCB-1221), dissolved	ug/L	-	ND (0.20)	-	-	-	-	-	-
Aroclor-1232 (PCB-1232), dissolved	ug/L	-	ND (0.40)	-	-	-	-	-	-
Aroclor-1242 (PCB-1242), dissolved	ug/L	-	ND (0.20)	-	-	-	-	-	-
Aroclor-1248 (PCB-1248), dissolved	ug/L	-	ND (0.20)	-	-	-	-	-	-
Aroclor-1254 (PCB-1254), dissolved	ug/L	-	ND (0.20)	-	-	-	-	-	-
Aroclor-1260 (PCB-1260), dissolved	ug/L	-	ND (0.20)	-	-	-	-	-	-
Sum of Detected PCBs (ND=0)	ug/L	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:
J = The reported laboratory result is qualified as an estimated value
* = The reported results are in "ug/L"
NA = Not Applicable

TABLE 2.1

ANALYTICAL RESULTS SUMMARY
PARCEL 384/386
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*1826*	*1827*	*1828*	*1829*	*1830*	*1831*	*1832*	*1833*
Sample ID:		*S-00-050802-JW-1826*	*S-00-050802-GS-1827*	*S-00-050802-GS-1828*	*S-00-050802-JW-1829*	*S-00-050802-GS-1830*	*S-00-050802-JW-1831*	*S-00-050802-GS-1832*	*S-00-050802-JW-1833*
Sample Date:		*5/8/2002*	*5/8/2002*	*5/8/02*	*5/8/02*	*5/8/2002*	*5/8/2002*	*5/8/2002*	*5/8/2002*
Sample Depth (feet):		*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*
Parameter	***Unit***								
PCBs									
Aroclor-1016 (PCB-1016)	ug/Kg	ND (48)	ND (210)	ND (52)	ND (49)	ND (51)	ND (240)	ND (270)	ND (99)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (48)	ND (210)	ND (52)	ND (49)	ND (51)	ND (240)	ND (270)	ND (99)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (48)	ND (210)	ND (52)	ND (49)	ND (51)	ND (240)	ND (270)	ND (99)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (48)	ND (210)	ND (52)	ND (49)	ND (51)	ND (240)	ND (270)	ND (99)
Aroclor-1248 (PCB-1248)	ug/Kg	85	1400	40 J	150	290	1100	1700	560
Aroclor-1254 (PCB-1254)	ug/Kg	ND (48)	ND (210)	ND (52)	ND (49)	ND (51)	ND (240)	ND (270)	ND (99)
Aroclor-1260 (PCB-1260)	ug/Kg	23 J	210	21 J	68	48 J	120 J	190 J	110
Sum of Detected PCBs (ND=0)	ug/Kg	108 J	1610	61 J	218	338 J	1220 J	1890 J	670
PCBs (dissolved)									
Aroclor-1016 (PCB-1016), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260), dissolved	ug/L	-	-	-	-	-	-	-	-
Sum of Detected PCBs (ND=0)	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:
J = The reported laboratory result is qualified as an estimated value
* = The reported results are in "ug/L"
NA = Not Applicable

TABLE 2.1

ANALYTICAL RESULTS SUMMARY
PARCEL 384/386
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*1834*	*1835*	*1835*	*1836*	*1837*	*1838*	*1843*	*1843*
Sample ID:		*S-00-050802-GS-1834*	*S-00-050802-GS-1835*	*S-00-050802-GS-1835A*	*S-00-050802-JW-1836*	*S-00-050802-JW-1837*	*S-00-050802-GS-1838*	*S-00-050902-GS-1843*	*S-00-050902-GS-1843A*
Sample Date:		*5/8/2002*	*5/8/2002*	*5/8/2002*	*5/8/2002*	*5/8/2002*	*5/8/2002*	*5/9/02*	*5/9/02*
Sample Depth (feet):		*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*
Parameter	***Unit***								
PCBs									
Aroclor-1016 (PCB-1016)	ug/Kg	ND (51)	ND (55)	ND (54)	ND (50)	ND (220)	ND (2000)	ND (93)	ND (93)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (51)	ND (55)	ND (54)	ND (50)	ND (220)	ND (2000)	ND (93)	ND (93)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (51)	ND (55)	ND (54)	ND (50)	ND (220)	ND (2000)	ND (93)	ND (93)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (51)	ND (55)	ND (54)	ND (50)	ND (220)	ND (2000)	ND (93)	ND (93)
Aroclor-1248 (PCB-1248)	ug/Kg	74	25 J	30 J	700	1500	26000	710	280
Aroclor-1254 (PCB-1254)	ug/Kg	ND (51)	ND (55)	ND (54)	ND (50)	ND (220)	ND (2000)	ND (93)	ND (93)
Aroclor-1260 (PCB-1260)	ug/Kg	27 J	ND (55)	ND (54)	150	230	4100	230	97
Sum of Detected PCBs (ND=0)	ug/Kg	101 J	25 J	30 J	850	1730	30100	940	377
PCBs (dissolved)									
Aroclor-1016 (PCB-1016), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254), dissolved	ug/L	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260), dissolved	ug/L	-	-	-	-	-	-	-	-
Sum of Detected PCBs (ND=0)	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:
J = The reported laboratory result is qualified as an estimated value
* = The reported results are in "ug/L"
NA = Not Applicable

TABLE 2.1

ANALYTICAL RESULTS SUMMARY
PARCEL 384/386
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		***1844***	***1845***
Sample ID:		***S-00-050902-GS-1844***	***S-00-050902-GS-1845***
Sample Date:		***5/9/02***	***5/9/02***
Sample Depth (feet):		***(0-0.33)***	***(0-0.33)***
Parameter	***Unit***		
PCBs			
Aroclor-1016 (PCB-1016)	ug/Kg	ND (99)	ND (100)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (99)	ND (100)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (99)	ND (100)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (99)	ND (100)
Aroclor-1248 (PCB-1248)	ug/Kg	630	700
Aroclor-1254 (PCB-1254)	ug/Kg	ND (99)	ND (100)
Aroclor-1260 (PCB-1260)	ug/Kg	91 J	200
Sum of Detected PCBs (ND=0)	ug/Kg	721 J	900
PCBs (dissolved)			
Aroclor-1016 (PCB-1016), dissolved	ug/L	-	-
Aroclor-1221 (PCB-1221), dissolved	ug/L	-	-
Aroclor-1232 (PCB-1232), dissolved	ug/L	-	-
Aroclor-1242 (PCB-1242), dissolved	ug/L	-	-
Aroclor-1248 (PCB-1248), dissolved	ug/L	-	-
Aroclor-1254 (PCB-1254), dissolved	ug/L	-	-
Aroclor-1260 (PCB-1260), dissolved	ug/L	-	-
Sum of Detected PCBs (ND=0)	ug/L	N/A	N/A

NOTES:
J = The reported laboratory result is qualified as an estimated value
* = The reported results are in "ug/L"
NA = Not Applicable

TABLE 2.2

ANALYTICAL RESULTS SUMMARY
PARCEL 393
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*1613*	*1915*	*1915*	*1916*	*1917*	*1918*	*1919*	*1920*
Sample ID:		*S-00-040502-JW-1613*	*S-060702-GS-1915*	*S-060702-GS-1915A*	*S-060702-GS-1916*	*S-060702-JW-1917*	*S-060702-JW-1918*	*S-060702-JW-1919*	*S-060702-JW-1920*
Sample Date:		*4/5/2002*	*6/7/2002*	*6/7/2002*	*6/7/2002*	*6/7/2002*	*6/7/2002*	*6/7/2002*	*6/7/2002*
Sample Depth (feet):		*(0-0.33)*	*(0-0.33)*	*(0-0.33)* *Duplicate*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*
Parameters	***Units***								
PCBs									
Aroclor-1016 (PCB-1016)	ug/Kg	ND (46)	ND (48)	ND (46)	ND (95)	ND (43)	ND (44)	ND (230)	ND (46)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (46)	ND (48)	ND (46)	ND (95)	ND (43)	ND (44)	ND (230)	ND (46)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (46)	ND (48)	ND (46)	ND (95)	ND (43)	ND (44)	ND (230)	ND (46)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (46)	ND (48)	ND (46)	ND (95)	ND (43)	ND (44)	ND (230)	ND (46)
Aroclor-1248 (PCB-1248)	ug/Kg	ND (46)	ND (48)	ND (46)	1100	19 J	670 J	1800	17 J
Aroclor-1254 (PCB-1254)	ug/Kg	ND (46)	ND (48)	ND (46)	ND (95)	ND (43)	ND (44)	ND (230)	ND (46)
Aroclor-1260 (PCB-1260)	ug/Kg	ND (46)	ND (48)	ND (46)	270	ND (43)	200 J	340	ND (46)
Sum of Detected PCBs (ND=0)	ug/Kg	0	0	0	1,370	19 J	870 J	2,140	17 J

NOTES:
J = The reported laboratory result is qualified as an estimated value

TABLE 2.2

ANALYTICAL RESULTS SUMMARY
PARCEL 393
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*1921*	*1922*	*1923*	*1924*	*1925*	*1925*	*1926*	*1927*
Sample ID:		*S-060702-GS-1921*	*S-060702-GS-1922*	*S-060702-JW-1923*	*S-060702-JW-1924*	*S-060702-GS-1925*	*S-060702-GS-1925A*	*S-060702-GS-1926*	*S-060702-GS-1927*
Sample Date:		*6/7/2002*	*6/7/2002*	*6/7/2002*	*6/7/2002*	*6/7/2002*	*6/7/2002*	*6/7/2002*	*6/7/2002*
Sample Depth (feet):		*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33) Duplicate*	*(0-0.33)*	*(0-0.33)*
Parameters	***Units***								
PCBs									
Aroclor-1016 (PCB-1016)	ug/Kg	ND (260)	ND (450)	ND (250)	ND (95)	ND (96)	ND (51)	ND (230)	ND (290)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (260)	ND (450)	ND (250)	ND (95)	ND (96)	ND (51)	ND (230)	ND (290)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (260)	ND (450)	ND (250)	ND (95)	ND (96)	ND (51)	ND (230)	ND (290)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (260)	ND (450)	ND (250)	ND (95)	ND (96)	ND (51)	ND (230)	ND (290)
Aroclor-1248 (PCB-1248)	ug/Kg	1000	3800	2100	740	820	490	1500	2400
Aroclor-1254 (PCB-1254)	ug/Kg	ND (260)	ND (450)	ND (250)	ND (95)	ND (96)	ND (51)	ND (230)	ND (290)
Aroclor-1260 (PCB-1260)	ug/Kg	260	960	450	130	140	130	330	360
Sum of Detected PCBs (ND=0)	ug/Kg	1,260	4,760	2,550	870	960	620	1,830	2,760

NOTES:
J = The reported laboratory result is qualified as an estimated value

TABLE 2.2

ANALYTICAL RESULTS SUMMARY
PARCEL 393
NORTHERN TRIBUTARY IM WORK PLAN
GM POWERTRAIN BEDFORD FACILITY
BEDFORD, INDIANA

Sample Location:		*2119*	*2119*	*2120*	*2121*	*2122*
Sample ID:		*S-080602-GS-2119*	*S-080602-GS-2119A*	*S-080602-GS-2120*	*S-080602-GS-2121*	*S-080602-GS-2122*
Sample Date:		*8/6/2002*	*8/6/2002*	*8/6/2002*	*8/6/2002*	*8/6/2002*
Sample Depth (feet):		*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*	*(0-0.33)*
			Duplicate			
Parameters	***Units***					
PCBs						
Aroclor-1016 (PCB-1016)	ug/Kg	ND (40)	ND (40)	ND (34)	ND (39)	ND (39)
Aroclor-1221 (PCB-1221)	ug/Kg	ND (40)	ND (40)	ND (34)	ND (39)	ND (39)
Aroclor-1232 (PCB-1232)	ug/Kg	ND (40)	ND (40)	ND (34)	ND (39)	ND (39)
Aroclor-1242 (PCB-1242)	ug/Kg	ND (40)	ND (40)	ND (34)	ND (39)	ND (39)
Aroclor-1248 (PCB-1248)	ug/Kg	ND (40)	ND (40)	ND (34)	ND (39)	ND (39)
Aroclor-1254 (PCB-1254)	ug/Kg	ND (40)	ND (40)	ND (34)	ND (39)	ND (39)
Aroclor-1260 (PCB-1260)	ug/Kg	ND (40)	ND (40)	ND (34)	ND (39)	ND (39)
Sum of Detected PCBs (ND=0)	ug/Kg	0	0	0	0	0

NOTES:

J = The reported laboratory result is qualified as an estimated value