DUE CARE PLAN

PONTIAC CENTERPOINT CAMPUS
PONTIAC MICHIGAN

Prepared For:
General Motors Corporation

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This Due Care Plan was reviewed by:

Name	Signature	Date	Date of 201 Criteria
			January 23, 2006

Any Changes to the Plan were incorporated and communicated to Plant Engineering, Plant Maintenance, and Plant Security, as appropriate training.

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A. GENERAL INFORMATION REGARDING THE PLANT AND SURROUNDING PROPERTY

A.1 SITE DESCRIPTION

The Pontiac Centerpoint Campus (Site) is located in Sections 3 and 4 of Township T2N, Range R10E, City of Pontiac, Oakland County, Michigan, as presented on Figure 1.1. The Site encompasses approximately 400 acres of land and currently contains the Pontiac Centerpoint Campus, which includes the General Motors Corporation (GM) Pontiac Assembly Center (United States Environmental Protection Agency (U.S. EPA) ID No. MID 005 356 902). The Site formerly contained the Pontiac Central Manufacturing and Assembly Plant. The Site is generally bordered by South Boulevard to the north, the Grand Trunk Western Railroad to the south, Opdyke Road to the east, and East Boulevard/Martin Luther King Jr. Boulevard to the west. A Site Plan is presented on Figure 1.2.

A.2 OPERATIONAL HISTORY

In 1927, the Site began producing medium and heavy duty trucks and buses at the former Pontiac Central Manufacturing and Assembly Plant, which was formerly located in the north-central portion of the Site. Major manufacturing activities associated with the production of these vehicles included machining, stamping, plating, smelting, fiberglass laminating, heat treating, painting, and sealing. Subsequent operations were expanded to include more than 60 manufacturing and office buildings, the biggest of which was the GM Pontiac East Assembly Plant (which is currently located in the southeast corner of the Site), and now considered the Pontiac Assembly Center.

In August 1990, manufacturing operations at the former Pontiac Central Manufacturing and Assembly Plant were discontinued. Between 1991 and 1995, the Plant was environmentally decommissioned and the area was redeveloped as a large scale industrial and commercial business development.

A.3 GEOLOGY

A.3.1 REGIONAL GEOLOGY

The regional geologic profile typically consists of three distinct units, including: (1) a surficial fill and/or a native granular horizon; (2) a glacial clay/till deposit; and (3) a Mississipian-aged bedrock (Coldwater Shale).

The topography and overburden in the vicinity of the Site are the result of glacial and post-glacial deposition and erosional processes. The surficial geology of the regional area indicates the Site is located in an area of terminal or end moraine. In the area surrounding the Site, the end moraine material may vary in thickness from slightly less than 100 feet (ft) to as much as 350 ft. The end moraine material is generally medium textured till with a dominant silt and clay matrix.

The Coldwater Shale, of Early Mississippian age, is the first bedrock formation encountered below the Site at an elevation of approximately 625 to 650 ft above mean sea level (amsl) (at an approximate depth of 250 to 350 ft). This shale is dark brown to black, bituminous, fissile, and finely laminated. The Coldwater Shale may be as much as 1,300 ft thick in the vicinity of the Site. Located below the Coldwater Shale are sedimentary formations of the Berea Sandstone-Bedford Shale unit.

A.3.2 SITE GEOLOGY

The stratigraphy encountered at the Site generally consists of a relatively thin layer (approximately 5 to 15 ft) of surficial fill materials. The fill materials are typically comprised of a variable mix of sand, gravel, clay, asphalt, concrete, and other engineered fill used in the construction of the Site. Much of the Site topography has been changed and leveled over the years through excavation activities, which has exposed subsurface glacial clay/tills near the surface at some locations.

Below the fill material, up to 350 ft of glacial material is encountered. This glacial material generally consists of a medium-textured, poorly stratified glacial clay/till with thin, laterally discontinuous lenses of silts, sands, and/or gravels. However, in the vicinity of the Site, the glacial clay/till does contain several interbedded laterally continuous sand layers of variable thicknesses between 120 and 350 ft below ground surface (bgs). This includes a glacial outwash deposit of well-sorted sand and gravel at approximately 220 ft bgs.

Well logs from production wells at the Site and supply wells off Site were obtained and reviewed in the Review of Existing Conditions Report (Conestoga-Rovers & Associates (CRA), October 1995) and supplemented through a request to the Michigan Department of Environmental Quality (MDEQ) Geologic Survey Division in September/October 2000. An on/off-Site well location plan is provided on Figure 1.3.

A.4 HYDROGEOLOGY

A.4.1 REGIONAL HYDROGEOLOGY

Groundwater resources in the Clinton River and Rouge River watersheds exist in both the glacial drift and the bedrock of the area. In the region surrounding the Site, groundwater is encountered in four general water-bearing units:

- unconfined perched water table zone;
- glacial clay/till aquifer(s);
- lower sand and gravel aquifer; and
- bedrock aquifer(s).

The upper glacial clay/till of the area contains an unconfined perched water table that is influenced by seasonal precipitation, local drainage patterns, and topography. The perched water table is located at a depth of approximately 10 to 30 ft bgs and the saturated thickness is generally less than 5 to 10 ft (if present). It should also be noted that the perched water table zone is locally absent in certain areas.

The regional glacial clay/till is quite extensive (both areally and vertically). The glacial clay/till consists of poorly stratified clays, sand, and rock fragments that are not always continuous with depth. This material does not transmit large quantities of water, and as a result, water bearing zones within this unit are not considered significant aquifers. In many areas, the glacial clay/till serves as an effective aquitard to groundwater movement. According to the Hydrogeologic Atlas of Michigan (WMU, 1981), more usable aquifers are generally found at greater depths and impervious materials (e.g., glacial clay/till aquitards) protect the lower aquifers from surface contamination in the general vicinity of the Site.

The regional lower sand and gravel aquifer is glacial outwash that generally consists of beds of well-sorted sand and gravel. This aquifer unit underlies the glacial clay/till. Although the lower sand and gravel aquifer is not widespread throughout southeastern Michigan, it is prevalent throughout the region of the Site where the outwash is in distinct channels. This unit is considered the most important aquifer in the region as it provides storage for large quantities of water. The lower sand and gravel aquifer is considered to be protected from surface contamination by the impervious overlying glacial clay/till aquitards (WMU, 1981).

On a regional basis, the Coldwater Shale and the Bedford Shale are commonly considered nonproductive aquifers, typically yielding only small amounts of water. A more abundant water supply is found at greater depths and with significant increases in mineral content (i.e., brines). The bedrock water resources, like the more usable lower sand and gravel aquifer above them, are protected from surficial contamination.

A.4.2 SITE HYDROGEOLOGY

Groundwater is encountered within the surficial fill/granular material, the glacial clay/till deposits, and the underlying bedrock unit. Depth to groundwater, groundwater quality, and groundwater quantity vary between and within the geological units.

In the area of the Site, the perched groundwater is occasionally encountered at depths of approximately 10 to 30 ft bgs and is laterally discontinuous**.** The shallow perched water is located in silt and sand lenses scattered within the upper 20 ft of the glacial clay/till. This shallow perched zone is not utilized for water supply purposes at the Site and in the Pontiac area.

Deeper within the glacial clay/till, groundwater has been encountered in confined conditions within the interbedded sand units and the outwash deposits encountered approximately 120 to 250 ft bgs. According to a 1981 hydraulic assessment of the Site completed by Camp, Dresser, and McKee (CDM, 1981), three sand and sand/gravel aquifers are present beneath the GM property at depths of approximately 120, 150, and 210 ft bgs, respectively. Within the study area, the units are approximately 7, 25, and 50 ft thick, respectively. These interbedded sand units are considered regional aquifer(s) and formerly supplied the Site with industrial water. These interbedded sand aquifers are separated from the perched groundwater by a minimum of approximately 100 ft of glacial clay/till. The glacial clay/till is comprised of clay, silt, sand, and gravel, and generally displays low to very low hydraulic conductivity. In 1994, CRA performed an Extent of Contamination (EOC) evaluation, including geotechnical investigations on the till at the J-Lot, which is part of the Site (CRA, 1994). The hydraulic conductivity of the till ranged between $1.6x10^{-8}$ centimeters per second (cm/s) and $4.1x10^{-7}$ cm/s. In addition, the measured coefficient of permeability ranged from 1.4×10^{-8} to 5.7×10^{-9} cm/s for additional samples collected and analyzed in the Burn Pile Phase 4 and Phase 5 Investigation Report (CRA, October 2006). Given the range outlined above, the glacial clay/till at the Site acts as an aquitard, thereby restricting vertical movement from the shallow perched zone (when present) to the top of the interbedded sand aquifer encountered approximately 120 ft bgs.

Below the overburden aquifers, the Coldwater Shale is commonly considered a nonproductive aquifer, typically yielding only small amounts of water. A more abundant water supply is found at greater depths and with significant increases in mineral content (i.e., brines). The bedrock water resources, like the more usable lower sand and gravel aquifer above them, are considered to be protected from surficial contamination.

A.5 HYDROLOGY

A.5.1 REGIONAL HYDROLOGY

The area of the Site is within the Clinton River and Rouge River basins. The Clinton River basin drains an area of approximately 760 square miles covering almost half of Oakland County and the majority of Macomb County. The Rouge River basin drains an area of approximately 467 square miles and covers portions of Oakland, Wayne, and Washtenaw Counties. The Clinton River discharges into Lake St. Clair to the east, while the Rouge River discharges into the Detroit River, south of Lake St. Clair. The Detroit River flows into Lake Erie.

Both river basins contain similar topographic features. Generally, the northwest is made up of undulating morainal hills with narrow sand and gravel plains in between. The southeast is typically identified by relatively flat level lake plain. Relic beaches extending in a northeast direction separate the two different areas.

A.5.2 SITE HYDROLOGY

The Site is located within the Clinton River and Rouge River drainage basins. The Clinton River is located approximately 0.85 miles northeast of the Site while the Rouge River is located approximately 3.0 miles southeast of the Site. Several surface water bodies and intermittent drains are also located within a mile of the Site. In June 2004, the MDEQ evaluated the stormwater drains in the vicinity of the Facility (Amy Drain, Hamlin Drain, Levison Drain, and Murphy Creek). MDEQ did not consider any of these drains to be surface waters of the State at the point of discharge from the Facility; therefore, there are no natural surface water bodies on Site.

A.6 LAND USE

The land on Site is used for industrial and commercial purposes. The surrounding land uses on the east and south sides of the Site are predominantly residential. The land use to the north and west of the Site is a mixture of industrial, commercial, and residential. Land uses at and surrounding the Site are summarized as follows:

Location	*Jurisdiction*	*Land Use*
Site	City of Pontiac	Industrial/Commercial
North	City of Pontiac	Industrial/Commercial/Residential
East	Bloomfield Township	Residential/Commercial
South	Bloomfield Township	Residential
West	City of Pontiac/Bloomfield Township	Industrial/Commercial/Residential

The City of Pontiac and Bloomfield Township zoning maps are presented on Figures 1.4 and 1.5, respectively.

A.7 POTENTIAL RECEPTORS

Land use at the Site is expected to remain industrial or commercial. Access within the industrial portions of the Site is restricted through the use of security fences and security guards. As a result, current and future potential receptors include trespassers, construction workers, and Site employees.

The majority of the Site is used for industrial or commercial activities and contains very little natural flora or habitat for fauna. The North Retention Pond is an active stormwater retention basin, and therefore has the potential for limited habitat for some flora and fauna. It should also be noted that many portions of the Site have been landscaped within recent years as part of the redevelopment. As a result, there are no significant environmental receptors within the identified Areas of Interest (AOIs) or Solid Waste Management Units (SWMUs).

A.8 POTENTIAL PATHWAYS/MEDIA

Site conditions were evaluated relative to criteria and provisions of Administrative Rule 7 for Part 201 Act 451.

A.8.1 SURFACE WATER PATHWAY

There are no natural surface water bodies on Site but several surface water bodies and intermittent drains are located within a mile of the Site. As mentioned in Section A.5.2, the MDEQ did not consider the stormwater drains located in the vicinity of the Facility to be surface waters of the State at the point of discharge from the facility; therefore, there are no natural surface water bodies on Site.

The Groundwater Surface Water Interface (GSI) Exposure Pathway is not a due care pathway for the Site. The Michigan Department of Environmental Quality Statistics Training Material for Part 201 Cleanup Criteria, dated 2001, states that the GSI and GSI PC are generally not relevant to due care compliance except for conditions in venting groundwater that could result in unacceptable human exposure at the GSI or if there is a drinking water intake close to the point of venting, which Site groundwater analytical data does not support.

The U.S. EPA identified the GSI Pathway is not relevant for the former Surface Impoundment and Container Storage Area in a letter to GM dated October 11, 2006. The determination was made following a review of the Final GSI Elimination Determination Report prepared by CRA and submitted to U.S. EPA in October 2006.

The GSI Exposure Pathway will not be further evaluated in this Report.

A.8.2 SEDIMENT PATHWAY

There are no natural surface water bodies on the Site. There are two active stormwater retention ponds and one former retention pond located at the Site. The North Retention Pond (AOI #46/SWMU #34) is located north of the Pontiac Assembly Center, is intermittently wet and is vegetated. The South Retention Pond is located southwest of the Pontiac Assembly Center. The former South Retention Pond (AOI #45/SWMU #33) was located approximately 2,000 ft southeast of the current South Retention Pond, and was decommissioned during Site redevelopment in the mid-1990s. Investigation personnel and Site workers could come in contact with sediments in the two active retention ponds. This pathway will only be evaluated for the North Retention Pond (AOI #46/SWMU #34) as the former South Retention Pond (AOI #45/SWMU #33) no longer exists and no parameters were detected at concentrations above the detection limit in the sample collected from the current South Retention Pond.

A.8.3 GROUNDWATER PATHWAY

Drinking Water - The City of Pontiac supplies water to the Site for potable and industrial uses. The shallow perched groundwater, to the extent it is present, is not used at the Site for any purpose. In many locations, the perched water is absent altogether. In addition, as outlined in Section A.4, there is no vertical migration pathway for potentially impacted perched groundwater, due to the underlying glacial clay/till. Therefore, the lower sand and gravel aquifer and the bedrock water resources are considered to be protected from surficial contamination. Deed restrictions preventing groundwater use have been placed on the majority of the Site, as presented on Figure 1.6.

Groundwater Contact - Exposure to the shallow perched groundwater is a potential pathway for workers during excavation/maintenance activities to the water table and when groundwater monitoring wells are sampled.

Inhalation (volatile) acute - This is a potential pathway in areas not covered by Plant buildings.

Inhalation (volatile) indoor air - This is a pathway in areas covered by Plant buildings.

A.8.4 SOIL PATHWAY

Direct Contact - Surface soils are a potential pathway for workers in areas of the Site that are not covered with an adequate barrier such as asphalt, concrete or grass. Subsurface soils are a potential pathway for workers during excavation/maintenance activities.

Inhalation (particulate) - This is a potential pathway, although the Site is highly vegetated and unlikely to yield high levels of particulates.

Inhalation (volatile) ambient air - This is a potential pathway in areas not covered by Plant buildings.

Inhalation (volatile) indoor air - This is a potential pathway in areas covered by Plant buildings.

Supplemental deed restrictions have been placed on a portion of the Burn Pile, as presented on Figure 1.7.

B. AREAS OF INTEREST

In 1987, the U.S. EPA identified 38 SWMUs/Areas of Concern (AOCs) in the Preliminary Review/Visual Site Inspection (PR/VSI) Report for the Site. GM subsequently identified 46 other areas of environmental interest during Site redevelopment activities. These SWMUs/AOCs and additional AOIs were sequentially renumbered as AOI #1 through #84. Each of the AOIs was assessed in the Review of Existing Conditions Report (CRA, October 1995) and Supplemental Review of Existing Conditions Report (CRA, December 1995). Subsequent Interim Measures (IMs) were completed for two of the AOIs as a result of these assessments. Additional investigations were completed for five of these AOIs in 1998 and reported in the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report (CRA, October 2005).

Results of these investigations have shown that the Site is a "Facility", as it has concentrations of select chemical constituents which exceed the Michigan Act 451, Part 201 Generic Residential and Commercial I Screening Levels. Seven AOIs have detected concentrations that exceed the applicable Michigan Part 201 Industrial and Commercial Criteria. The locations of these areas are presented on Figure 2.1. Each of these areas will be evaluated in the following sections to demonstrate compliance with Section 7a Due Care obligations.

The chemical constituents of concern in soils include: arsenic; chromium; lead; benzo(a)pyrene; benzene, toluene, ethylbenzene, and xylene (total) (BTEX); vinyl chloride; cis-1,2-dichloroethene; isopropyl benzene; 1,2,4-trimethylbenzene; and trichloroethene. The chemical constituents of concern in water are vinyl chloride and trichloroethene.

A review of the pertinent exposure pathways is presented in the following sections. These exposure pathways were selected based on a review of the exposure pathway guide sheets presented in the "DEQ Training Material Part 201 Cleanup Criteria and Part 213 Risk-Based Screening Levels" June 2006, with consideration given to Site-specific conditions such as current and future Industrial and Commercial II, III, and IV land use, and the potential pathway's media outlined in Section A.8 above. Specifically, the comparison included all generic Industrial and Commercial II, III, and IV criteria except for those relating to the GSI and the drinking water pathway.

To work in these areas, staff will be required to fill out a work authorization form. A copy of the work authorization form is presented in Appendix A. In addition, letters will be sent to all companies or utilities who may perform subsurface work at the site. A copy of the form letter is presented in Appendix B.

B.1 AOI #25-FORMER PLATING DEPARTMENT

During decommissioning activities, the former plating department was identified by GM as an additional area of environmental concern due to historical manufacturing operations. The former plating department was located in Building 9, within Bays D and E, between column lines 39 and 59. The land use in this area is currently industrial. The exact location of the plating equipment could not be found as there were no drawings existing at the time of the investigation. The general location of the plating department is presented on Figure 2.1. The former plating department had a new concrete floor slab cast-in-place over it for the construction of the Pontiac Centerpoint Campus-Central (PCC-C).

In an effort to determine if the former plating department operation had impacted the soils, a soil investigation was performed in 1991. The indicator chemicals associated with former plating operations were Target Analyte List (TAL) metals. No monitoring wells were installed, nor were groundwater samples collected in this area, because insufficient groundwater was encountered. One soil sample from soil boring 12-1 (C942861) had an exceedance of the Part 201 Industrial and Commercial DCC for arsenic. Since arsenic was not previously used at the PCC-C, this sample, among others, was re-analyzed. The results indicated that the re-analyzed sample (C942861R) had an exceedance of Part 201 Industrial and Commercial II DCC for arsenic. The exceedance, and corresponding soil sample location, are presented on Figure 2.2.

GROUNDWATER PATHWAY

Groundwater Contact - There are no exceedances of the Groundwater Contact Protection Criteria (GCPC). Insufficient groundwater was encountered, therefore groundwater was not sampled in this area.

Inhalation (volatile) acute - Insufficient groundwater was encountered, therefore groundwater was not sampled in this area.

Inhalation (volatile) indoor air - Insufficient groundwater was encountered, therefore groundwater was not sampled in this area.

SOIL PATHWAY

Direct Contact - There was one exceedance of the Industrial and Commercial II DCC for arsenic in the re-analyzed sample collected from location: 12-1. This sample is located underneath PCC-C at a depth of 19-24 ft bgs. Therefore, this pathway is not currently complete.

Inhalation (particulate) - There are no exceedances of these criteria.

Inhalation (volatile) ambient - There are no exceedances of these criteria.

Inhalation (volatile) indoor - There are no exceedances of these criteria.

Procedures for Maintenance of Due Care

Currently, the PCC-C is located above sample location 12-1. The soil direct contact exposure pathway is therefore only applicable if the building is demolished or drilling is done under the floor slab in which case, a Health and Safety Plan (HASP) will be prepared for the Site prior to initiation of the work. The HASP should account for potential exposure to subsurface soil, and provide the necessary monitoring and personal protection equipment (PPE). Prior to completion of subsurface work, all workers will be shown the analytical data pertinent to this area and asked to confirm their understanding of the risks in the area by signing below. Any soil removed in the future will be managed appropriately.

This Due Care Plan is enforced by Don Harris and Jean Caufield.

CONTACTS

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The next update review of this Due Care Plan is scheduled for September 2008. A new review will be performed if changes are proposed to current uses, to evaluate the data against the proposed changes, or if new data is collected.

Record of Maintenance of Due Care

Anyone who will be working in areas where soil or groundwater exceed the appropriate criteria must acknowledge that a Plant representative has reviewed available data for that area with them.

SIGNATURES

Please print your name, sign, and date this form to acknowledge that you have reviewed the analytical data pertinent to your activities presented in this plan and you understand the potential risks and health and safety requirements in working in this area.

Print Name	*Signature*	*Date*

B.2 AOI #46-NORTH RETENTION POND (SWMU #34)

The North Retention Pond is located in the north central portion of the Site, south of South Boulevard and north of Campus Drive. The North Retention Pond, which was originally approximately 30 yards long, 3 yards deep, and 15 yards wide, historically collected storm water runoff from the northern parking lots of the Pontiac Assembly Center. The location of the North Retention Pond is presented on Figure 2.1. As part of the Site redevelopment program, the North Retention Pond was regraded, deepened, and landscaped to accommodate additional stormwater run-off from the newly constructed PCC-E parking lots and Campus Drive. The North Retention Pond is presently zoned for commercial land use.

As part of the RFI for the Site, investigative boreholes were installed by CRA in the vicinity of AOI #46/SWMU #34 and sediment samples were collected in December 1998. The indicator chemicals associated with AOI #46/SWMU #34 are Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), TCL polychlorinated biphenyls (PCBs), TAL metals, and cyanide. No monitoring wells were installed because insufficient groundwater was encountered, and consequently no groundwater samples were collected in this area.

Sediment sampling activities indicated a marginal exceedance of the Part 201 Industrial and Commercial II (8 milligrams per kilograms (mg/kg)) and Commercial IV DCC (11 mg/kg) for benzo(a)pyrene at one sediment sample location of 7 samples, this being SD-34-1 (12 mg/kg) at a depth of 0-1 ft bgs. The exceedances and corresponding sample location are presented on Figure 2.3.

It should be noted that the data from the sediment samples were compared to the Part 201 Industrial and Commercial Soil Criteria, as Part 201 sediment criteria do not exist.

SEDIMENT PATHWAY

Direct Contact - There is a marginal exceedance of the Industrial and Commercial II and Commercial IV DCC for benzo(a)pyrene at one location: SD-34-1 (0-1 ft bgs).

Inhalation (particulate) - There are no exceedances of these criteria.

Inhalation (volatile) ambient - There are no exceedances of these criteria.

GROUNDWATER PATHWAY

Groundwater Contact - There are no exceedances of the GCPC. Insufficient groundwater was encountered and therefore, groundwater was not sampled in this area.

Inhalation (volatile) acute - Insufficient groundwater was encountered and therefore, groundwater was not sampled in this area.

Inhalation (volatile) indoor air - Insufficient groundwater was encountered and therefore, groundwater was not sampled in this area.

SOIL PATHWAY

Direct Contact - There are no exceedances of these criteria.

Inhalation (particulate) - There are no exceedances of these criteria.

Inhalation (volatile) ambient - There are no exceedances of these criteria.

Inhalation (volatile) indoor -There are no exceedances of these criteria.

Procedures for Maintenance of Due Care

Currently, sample location SD-34-1 is covered by intermittent water and vegetation. Therefore, the soil direct contact exposure pathway is a potential pathway for investigation personnel during sample collection, or for Site workers and trespassers should they come in contact with the sediment. Should any future construction or investigation activity be conducted in the pond, a HASP will be prepared for the Site prior to initiation of the work, as a result of the sediment contamination. The HASP should account for potential exposure to sediment, and provide the necessary monitoring and PPE. All workers will be shown the analytical data pertinent to this area prior to work and asked to confirm their understanding of the risks in this area by signing below. All removed soils will be managed appropriately. A fence has been installed around the pond area, which restricts exposure to trespassers and unauthorized personnel.

This Due Care Plan is enforced by Don Harris and Jean Caufield.

CONTACTS

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The next update review of this Due Care Plan is scheduled for September 2008. A new review will be performed if changes are proposed to current uses, to evaluate the data against the proposed changes, or if new data is collected.

Record of Maintenance of Due Care

Anyone who will be working in areas where soil or groundwater exceed the appropriate criteria must acknowledge that a Plant representative has reviewed available data for that area with them.

SIGNATURES

Please print your name, sign, and date this form to acknowledge that you have reviewed the analytical data pertinent to your activities presented in this plan and you understand the potential risks and health and safety requirements in working in this area.

Print Name	*Signature*	*Date*

B.3 AOI #50-DUCO STORES

During the Site investigation activities, DUCO Stores was identified by GM as an additional area of environmental concern due to historical operations. Environmental activities have been completed in the following areas:

- DUCO Stores Underground Storage Tank (UST) Study Area remediation; and
- DUCO Stores Fuel Line Study Area investigation.

B.3.1 DUCO STORES UST AREA

The DUCO Stores UST area consisted of eight steel USTs installed in 1927. The USTs contained gasoline, Railway end lube, glycol, axle oil, and diesel fuel.

On February 2, 1990, gasoline was identified to be infiltrating into a sanitary sewer line located to the west of the former DUCO Stores UST area. In May 1990, gasoline was discovered infiltrating into a storm sewer, which was located near the DUCO Stores fuel lines. Following both instances, the sewer was plugged and the sewer contents removed, as necessary, by vacuum tanker truck.

In August 1991, all eight USTs in this area were excavated and removed. Following collection of 36 confirmatory samples from the UST cavity by Maecorp, diesel fuel was observed seeping into the excavation. Approximately 100 gallons of diesel fuel were recovered before seepage ceased.

Approximately 3,000 cubic yards (cy) of soil was excavated and thermally treated via low temperature thermal desorption. Further excavation to the east and west was not possible due to the location of existing structures, including buildings, concrete sewers, and a concrete storage pad. Verification samples were collected and submitted for BTEX and polynuclear aromatics (PNA) analyses.

In January 1994, CRA was retained to further define the nature and extent of any potential residual soil contamination in the area. CRA installed six boreholes (four west of and two east of the former excavation). In addition CRA deepened the northern end of the excavation by approximately 2 ft resulting in the removal of an additional 175 cy of soil. Results of the investigation were summarized in the DUCO Stores Study Area-Final Report (CRA, 1994c). The DUCO Stores Report concluded that minor residual concentrations of BTEX and PNAs remained in soils at inaccessible locations.

During expansion activities of Building 34/52 in October 1997, GM contractors encountered diesel fuel odors and stained soils adjacent to the eastern side of a 12-inch diameter storm sewer line south of Building 34 at a depth of approximately 7 ft bgs. Construction activities ceased in this area until the source of the staining and odors could be determined.

CRA subsequently excavated, segregated, stockpiled and analyzed approximately 2,800 cy of clean fill and approximately 8,400 cy of potentially affected soil. CRA collected a total of 49 soil samples from the excavation limits. Samples were analyzed for BTEX and PNAs. Results of the remedial work were summarized in the Building 34 Excavation Summary Report (CRA, 1998a).

Based on a screening of historical data to Current Michigan Act 451, Part 201 Industrial and Commercial Criteria, the soil sample collected from location 4A-Sidewall at a depth of 20 ft bgs exceed the Part 201 Industrial and Commercial Infinite Source VSIC and Soil Volatilization to Indoor Air Criteria (SVIAC) for benzene. Although further soil was excavated in this area in 1997, the maximum depth was approximately 12 ft. This sample location is currently beneath PCC-W.

Confirmatory soil samples collected from the sidewalls of the 1997 excavation in the UST study area exceed the Part 201 Industrial and Commercial DCC, the Commercial and Industrial SVIAC and GCPC for xylene at two locations: 25-Floor (10 ft bgs) and 32-Sidewall-8E (10 ft bgs). The SVIAC for benzene is also exceeded at sample location 25-Floor. These samples are currently underneath PCC-W or pavement.

As part of the Long-Term Monitoring Plan for the Site, a minimum of four monitoring wells will be installed and sampled annually to further evaluate this area. One groundwater sample will be collected from each monitoring well and analyzed for PNAs, TCL VOCs plus trimethyl benzene isomers and total lead. Field and laboratory quality control samples will also be collected and analyzed. The wells will also be hydraulically monitored to evaluate the groundwater flow direction. Additional soil investigation in the area is also proposed once access inside the building is available (proposed fall 2007).

B.3.2 DUCO STORES FUEL LINE STUDY AREA

The DUCO Stores Fuel Line Study Area consisted of an underground distribution network for gasoline and fuel oil that was installed in 1927, which originated from a

pumping station in the former Building 21. As previously mentioned, gasoline was discovered infiltrating into a storm sewer, which was located near the DUCO Stores fuel lines in May 1990.

In 1992, WWES installed 12 soil borings and three monitoring wells to investigate the area. BTEX constituents were identified at levels exceeding the then current Michigan Act 307 Type B soil cleanup levels.

In order to further define the extent of the sand lens where evidence of gasoline vapors was detected, seven boreholes and three test pits were installed by CRA in the vicinity of the fuel line in January 1994. Samples were collected from each borehole for chemical analysis of BTEX and lead. The results of the analyses did not identify any further areas of residual BTEX constituents in soil at levels of concern. The perched water was identified as being minor in extent and/or seasonally dependent. The DUCO Stores-Fuel Line Study Area-Final Report concluded that no additional investigation or remediation was required or warranted within this area (CRA, 1994b). This area is currently open on the MDEQ Leaking UST (LUST) list.

Based on a screening of historical data to current Act 451, Part 201 Industrial and Commercial Criteria, the soil sample collected from location BHFL5-94 at a depth of 10-12 ft bgs exceeds the Part 201 Industrial and Commercial SVIAC for benzene and xylene. In addition, the concentration of xylene exceeds the Industrial and Commercial DCC and GCPC. This sample location is currently underneath a parking area west of PCC-C.

Exceedances and corresponding sample locations are presented on Figures 2.4 and 2.5.

GROUNDWATER PATHWAY

Groundwater Contact - There are exceedances of the GCPC for xylene at three locations: 25-Floor (10 ft bgs), 32-Sidewall-8E (10 ft bgs), and BHFL5-94 (10 to 12 ft bgs). There are no exceedances of the GCC.

Inhalation (volatile) acute - There are no exceedances of these criteria.

Inhalation (volatile) indoor air - There are no exceedances of these criteria.

SOIL PATHWAY

Direct Contact - There are exceedances of the Industrial and Commercial DCC for xylene at three locations: BHFL5-94 (10-12 ft bgs), 25-Floor (10 ft bgs), and 32-Sidewall-8E (10 ft bgs). Sample location 25-Floor is located below PCC-W, and sample locations 32-Sidewall-8E and BHFL5-94 are located under pavement. Therefore, this pathway is currently incomplete.

Inhalation (particulate) - There are no exceedances of these criteria.

Inhalation (volatile) ambient air - There is an exceedance of the criterion for benzene at location 4A-Sidewall at a depth of 20 ft bgs. This sample location is currently covered by PCC-W and therefore this pathway is incomplete.

Inhalation (volatile) indoor air - There are exceedances of the criterion for benzene at three locations: 25-Floor (10 ft bgs), 4A-Sidewall (20 ft bgs), and BHFL5-94 (10-12 ft bgs). There are also exceedances of the criterion for xylene at 32-Sidewall-8E (10 ft bgs), 25-Floor (10 ft bgs), and BHFL5-94 (10-12 ft bgs). No building is present above sample location 32-Sidewall-8E or BHFL5-94 and therefore, this pathway is not applicable to these samples.

Procedures for Maintenance of Due Care

There are exceedances of GCPC, Industrial and Commercial DCC, ambient inhalation criteria, and indoor inhalation criteria at AOI 50.

Subsurface soils at locations 25-Floor 4A-Sidewall, 32-Sidewall-8E and BHFL5-94 are currently covered by PCC-W and a parking lot, respectively. Consequently, the ambient inhalation, groundwater contact, and direct contact exposure pathways are currently incomplete. However, the building location creates a potential pathway to the volatilization to indoor air for the samples located beneath it. The vapor levels in PCC-W should be monitored routinely and documented. Work activities should be performed in accordance with the air monitoring action levels presented in Table 2.1.

Should any future subsurface activity be conducted in the area, a HASP will be prepared for the Site prior to initiation of the work. The HASP should account for potential exposure to subsurface soils and groundwater, and provide the necessary monitoring and PPE. All workers will be shown the analytical data pertinent to this area prior to work and asked to confirm their understanding of the risks by signing below. All removed soils and groundwater will be managed appropriately.

This Due Care Plan is enforced by Don Harris and Jean Caufield.

CONTACTS

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The next update review of this Due Care Plan is scheduled for September 2008. A new review will be performed if changes are proposed to current uses, to evaluate the data against the proposed changes, or if new data is collected.

Record of Maintenance of Due Care

Anyone who will be working in areas where soil or groundwater exceed the appropriate criteria must acknowledge that a Plant representative has reviewed available data for that area with them.

SIGNATURES

Please print your name, sign, and date this form to acknowledge that you have reviewed the analytical data pertinent to your activities presented in this plan and you understand the potential risks and health and safety requirements in working in this area.

Print Name	*Signature*	*Date*

B.4 AOI #53-BUILDING 33 FREE PRODUCT STUDY AREA

In 1985, GM discovered a gasoline release during a geotechnical investigation for the planned expansion of Building 33.

In 1994, CRA conducted a subsurface investigation of the area which included the installation of 19 boreholes. Soil samples were screened using a photoionizing detector and submitted for chemical analysis of BTEX and lead. A monitoring well was installed within one of the interior boreholes to permit sampling of free product and measurement of product thickness (CRA, 1995).

In 2004, CRA conducted an additional subsurface investigation to evaluate then current light non-aqueous phase liquid (LNAPL), soil, vapor, and groundwater impacts. A total of 32 boreholes, 17 temporary wells and 11 permanent monitoring wells were installed in the vicinity of Building 33 from June through November 2004. During the course of the investigation, a second heavier LNAPL was identified. The western LNAPL is referred to as LNAPL Area 1. The eastern LNAPL is referred to as LNAPL Area 2.

Fingerprinting analysis described the LNAPL in LNAPL Area 1 as a mixture of gasoline with a middle distillate such as diesel fuel No. 2 or heating oil. Fingerprinting analysis described the LNAPL in LNAPL Area 2 as a high boiling product such as hydraulic oil, lube oil or similar compounds. The building was subsequently demolished in December 2005 and all historical monitoring wells were abandoned prior to the demolition.

After a successful pilot study in December 2004 to February 2005, 33 extraction wells and 12 LNAPL perimeter monitoring wells were installed in LNAPL Area 1 in July/August 2006 for the full-scale Multi-Phase Extraction (MPE) system. Operation of the MPE system commenced on September 6, 2006, and is expected to continue until product recovery is no longer practical. The criteria for ending the operation of the MPE System will be when the product recovery curve becomes asymptotic. When recovery no longer appears practical, GM will propose to U.S. EPA to end operating the MPE system.

Two monitoring wells were also installed at LNAPL Area 2 in July 2006 to passively recover free product from that area.

As part of the long-term monitoring for the area, seven perimeter LNAPL monitoring wells will be installed at LNAPL Area 1 and three LNAPL/groundwater monitoring wells will be installed at LNAPL Area 2. Five additional groundwater monitoring wells

will be installed along the periphery of the area to ensure impacted groundwater is not migrating beyond previously defined boundaries. Once the long-term monitoring plan is approved by U.S. EPA, the wells will be sampled periodically up to five years.

Based on a review of historical data to current Act 451, Part 201 Industrial and Commercial Criteria, there are exceedances of the DCC, SVIAC, and Infinite Source VSIC at sample locations BH33-1-94 (15.5-16 ft bgs) and BH33-6-04 (15-17 ft bgs). An exceedance of the SVIAC was also present at sample location BH33-1-94 (16-18 ft bgs). These sample locations are located underneath the footprint of the former Building 33.

These exceedances and corresponding sample locations as well as the current approximate extent of NAPL (August 2007) are presented on Figure 2.6. This area is currently zoned and used for industrial purposes.

GROUNDWATER PATHWAY

Groundwater Contact - There are no exceedances of these criteria.

Inhalation (volatile) acute- There are no exceedances of these criteria.

Inhalation (volatile) indoor air - There are no exceedances of these criteria.

It should be noted that groundwater samples were not collected historically from monitoring wells that exhibited free product.

SOIL PATHWAY

Direct Contact - There are exceedances of the Industrial and Commercial DCC for ethylbenzene, toluene, and xylene at sample location BH33-1-94 (15.5-16 ft bgs) and for 1,2,4-trimethylbenzene, toluene, and xylene at sample location BH33-6-04 (15-17 ft bgs).

Inhalation (particulate) - There are no exceedances of these criteria.

Inhalation (volatile) ambient air - There is an exceedance of the VSIC (45 mg/kg) for benzene at location BH33-6-04 (15-17 ft bgs) and at sample location BH33-1-94 (15.5-16 ft bgs). This area is currently covered primarily by a concrete slab; therefore, this pathway is presently incomplete.

Inhalation (volatile) indoor air - There are exceedances of these criteria for 1,2,4-trimethylbenzene, benzene, toluene, and xylene at BH33-6-04 (15-17 ft bgs); for BTEX at BH33-1-94 (15.5-16 ft bgs); and benzene at BH33-1-94 (16-18 ft bgs). No building is currently located above these samples, and therefore this pathway is currently incomplete.

Procedures for Maintenance of Due Care

There are exceedances of ambient inhalation criteria, indoor inhalation criteria, and DCC. All exceedances are located at depths of 15 ft bgs or greater. Therefore, the soil direct contact exposure pathway is a potential pathway for investigation personnel during sample collection, or for Site workers during subsurface activities. Work activities should be performed in accordance with the air monitoring action levels prescribed in Table 2.1. No building is currently located above these samples, and therefore the indoor inhalation pathway is incomplete. A concrete slab currently covers the majority of this area; therefore, the ambient air pathway is also incomplete.

The approximate extent of free products (August 2007) are presented on Figure 2.6. The free product area is currently being remediated and a HASP is being followed. For this and any other future subsurface construction activity, a HASP will be prepared for the Site prior to initiation of the work, as a result of the subsurface contamination. The HASP should account for potential exposure to subsurface soil, and provide the necessary monitoring and PPE including spark resistant equipment. All workers will be shown the analytical data pertinent to this area prior to work and asked to confirm their understanding of the risks in this area by signature below. All removed soils will be managed appropriately.

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Record of Maintenance of Due Care

Anyone who will be working in areas where soil or groundwater exceed the appropriate criteria must acknowledge that a Plant representative has reviewed available data for that area with them.

SIGNATURES

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Print Name	*Signature*	*Date*

B.5 AOI #54-FORMER SURFACE IMPOUNDMENT (SWMU #31)

The Former Surface Impoundment was located on the south side of the wastewater treatment tank area in the south central portion of the Site. It was used to temporarily store wastewater during a period of repair to the Wastewater Treatment Plant. AOI #54 is currently zoned and used for industrial purposes and the access to the area is secured by a guardhouse near the Facility truck docks at the rear of the Pontiac Assembly Center, thereby further limiting access to trespassers, construction workers, or industrial employees.

In 1987, U.S. EPA collected one soil sample in the vicinity of the former surface impoundment (006).

In December 1998, CRA conducted investigative activities in the area as part of the RFI. Six investigative boreholes were installed as part of this investigation. The indicator chemicals associated with AOI #54 were TCL VOCs, TCL SVOCs, TCL PCBs, TAL metals, and cyanide.

At sample locations 006, BH-31-2, BH-31-3, and SS-31-1, the concentration of total chromium exceeded the Industrial and Commercial Part 201 Particulate Soil Inhalation Criteria (PSIC) for Chromium (VI). Although the samples were analyzed for total chromium, there are no criteria available for total chromium with which the samples can be compared. Samples were consequently compared to criteria for Chromium (VI), as this provided the most stringent criteria. No samples exceeded the applicable criteria for Chromium (III).

At three soil sample locations 006, BH-31-2, and BH-31-3, the concentrations of arsenic and lead exceeded the Part 201 Industrial and Commercial DCC. As well, in one additional soil sample SS-31-1, the concentration of lead exceeded the Part 201 Commercial III and IV DCC. As this area of the Site is used for industrial use only, the Commercial III and IV DCC are not applicable. An additional evaluation, in the form of a preliminary risk evaluation (PRE), was conducted as part of the RFI (CRA, October 2005) to address the Industrial exceedances in the two soil samples collected as part of the RFI.

The human health risk evaluation was completed for a future construction worker exposure to both arsenic and lead as part of the RFI. Results of this evaluation indicated that the hazard indices for arsenic were below the level of concern for both the most likely exposure scenario and a reasonable maximum exposure, and the estimated additional risks of cancer are well below the target U.S. EPA cancer risk range. For lead,

the derived soil risk-based remediation goal (RBRG) was calculated to be 5,904 mg/kg. The concentrations of lead detected at AOI #54 are well below the calculated RBRG (which is considered to be a protective level by U.S. EPA). Therefore, this pathway does not pose an unacceptable risk.

One groundwater sample was collected from MW31-1. No exceedances of applicable criteria were found.

An additional groundwater investigation was performed in December 2004 to support the Revised Final Groundwater Surface Water Interface (GSI) Pathway Elimination Determination Report (CRA, October 2006). During this investigation, four temporary monitoring wells were installed and groundwater samples were collected from the temporary monitoring wells and the existing monitoring well. Samples were analyzed for selenium. No exceedances of applicable criteria were observed.

Exceedances and corresponding sample locations are presented on Figure 2.7.

GROUNDWATER PATHWAY

Groundwater Contact - There are no exceedances of the GCPC or the GCC.

Inhalation (volatile) acute -There are no exceedances of these criteria.

Inhalation (volatile) indoor air -There are no exceedances of these criteria.

SOIL PATHWAY

Direct Contact - There are exceedances of the Part 201 Industrial and Commercial DCC for arsenic and lead in the soils at three of the soil boring locations: 006 (0-6 inches bgs), BH-31-2 (1-1.5 ft bgs), and BH-31-3 (4-6 ft bgs). Based on the risk evaluation completed during the RFI, this pathway does not pose an unacceptable risk.

Inhalation (particulate) - There are exceedances of the PSIC Chromium (VI) criteria for total chromium at four locations: 006 (0-6 inches bgs); BH-31-2 (1-1.5 ft bgs); BH-31-3 (4-6 ft bgs); and SS-31-1 (0-2 ft bgs). It should be noted that there are no PSIC criteria for total Chromium. This area contains a paved access road and is landscaped. Consequently, this pathway is currently incomplete.

Inhalation (volatile) ambient air - There are no exceedances of these criteria.

Inhalation (volatile) indoor air - There are no exceedances of these criteria.

Procedures for Maintenance of Due Care

As previously described, the arsenic and lead concentrations are not considered a risk to site workers for direct contact exposure. Chromium contaminants in soil are likely Chromium (III), but in the event there is Chromium (VI), the area is covered by grass which will be maintained to eliminate the particulate soil inhalation pathway. This is a conservative approach since only concentrations of total Chromium were measured at the Site. An O&M plan will be developed for the Site, which includes annual inspections of the area to ensure the cover material is maintained. A HASP will be prepared for any future subsurface activity. The HASP should account for potential exposure to subsurface contamination and provide the necessary monitoring and PPE. All workers will be shown the analytical data pertinent to this area prior to work and asked to confirm their understanding of the risks in this area by signature below. All soils removed in the future will be managed appropriately.

This Due Care Plan is enforced by Don Harris and Jean Caufield.

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Record of Maintenance of Due Care

Anyone who will be working in areas where soil or groundwater exceed the appropriate criteria must acknowledge that a Plant representative has reviewed available data for that area with them.

SIGNATURES

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Print Name	*Signature*	*Date*

B.6 AOI #66-WASTEWATER TREATMENT TANK AREA (SWMU #29)

The Wastewater Treatment Plant Area is located east of Building 56 and west of Centerpoint Parkway in the south-central portion of the Site. Currently, the area consists of 20 open top, vertical, aboveground storage tanks (ASTs). These tanks have been periodically painted over the years and tested for structural integrity. The WTT area has a total capacity of approximately 7.85 million gallons of water, 5.85 million gallons of which are used for treatment. The remaining 2.0 million gallons are used for clarification.

In 1987, U.S. EPA collected one soil sample in the vicinity of the Wastewater Treatment Plant (007). In December 1998, CRA conducted investigative activities in the vicinity of AOI #66, which consisted of the installation of eight investigative boreholes. The indicator chemicals associated with AOI #66 were TCL VOCs, TCL SVOCs, TCL PCBs, TAL metals, and cyanide. This area is presently used and zoned for industrial purposes.

Soil sample location 007 showed a total chromium concentration that exceeded the Part 201 PSIC for Chromium (VI) and the Part 201 Commercial III and IV DCC for lead. As previously noted, there are no PSIC for total chromium. No samples exceeded the applicable criteria for Chromium (III). Exceedances and corresponding sample locations are presented on Figure 2.8.

GROUNDWATER PATHWAY

Groundwater Contact - There are no exceedances of the GCPC. Insufficient groundwater was encountered and therefore, groundwater was not sampled in this area.

Inhalation (volatile) acute - Insufficient groundwater was encountered and therefore, groundwater was not sampled in this area.

Inhalation (volatile) indoor air - Insufficient groundwater was encountered and therefore, groundwater was not sampled in this area.

SOIL PATHWAY

Direct Contact - There is one exceedance of the Commercial III and IV DCC for lead at soil sample location 007. This area is zoned and used industrial. Therefore, the Commercial III and IV DCC are not applicable. In addition, a

concrete pad is located above this sample location; therefore, the pathway is currently incomplete.

Inhalation (particulate) - Total chromium exceeds the Chromium (VI) PSIC criterion at sample location 007. A concrete pad is located above this sample location therefore this pathway is currently incomplete.

Inhalation (volatile) ambient air - There are no exceedances of these criteria.

Inhalation (volatile) indoor air - There are no exceedances of these criteria.

Procedures for Maintenance of Due Care

At sample location 007, a concrete pad is located over the area. Therefore, the particulate soil inhalation and dermal contact pathways are not complete. A HASP will be prepared for the Site in the event the concrete pad is removed. The HASP should account for potential exposure to subsurface soil, and provide the necessary monitoring and PPE. All workers will be shown the analytical data pertinent to this area prior to commencing work and asked to confirm their understanding of the risks in the area by signing below. Any soil, which is later removed, will be managed appropriately.

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Record of Maintenance of Due Care

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SIGNATURES

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Print Name	*Signature*	*Date*

B.7 AOI #71-BURN PILE AREA

The Burn Pile Area is located south of the Wastewater Treatment Plant Area and north of the Grand Trunk Western Railroad. It is comprised of an earth fill matrix with some wood and metal construction debris, paint chips, brick, and metal scraps. The Burn Pile originated from historic filling activities associated with the remnants of an on-Site building (Building 43) that had previously burned. The Burn Pile was initially evaluated by GM in 1993. The evaluation was continued by Peter Cook and Associates, and CRA, as part of the redevelopment. The Centerpoint Parkway was constructed over a portion of the Burn Pile.

The historic evaluation of the Burn Pile consisted of a Phase I investigation, a Phase I excavation, a Phase II investigation, and a Phase II remedial excavation in 1994. This remedial work was completed to support the installation of Centerpoint Parkway through the eastern half of the Burn Pile. The western edge of the excavation was approximately 5 ft west of the right-of-way clearance for the proposed Centerpoint Parkway road that was later constructed over the eastern portion of the original extent of the Burn Pile. Excavation activities did not continue beyond what was necessary to support the Centerpoint Parkway construction.

The Burn Pile area is currently landscaped with grass, trees, and brush, and is zoned for industrial purposes.

CRA conducted supplemental environmental investigations at the Burn Pile from August 13, 2004 to March 2006. The purpose of these investigations was to further define the extent of contamination present in the vicinity of the Burn Pile through the collection of subsurface soil and groundwater samples.

The Phase 3 investigation consisted of the advancement of 12 soil borings, installation of 5 permanent monitoring wells and 7 temporary monitoring wells, collection of 17 subsurface soil samples and 18 groundwater samples, excavation of 10 test pits, and performance of 3 groundwater elevation measurement events.

The Phase 4 and Phase 5 investigation consisted of the advancement of 45 subsurface soil borings and 18 surface soil borings, installation of 18 monitoring wells, collection of 55 soil samples and 17 groundwater samples, excavation of three test pits, and performance of eight groundwater elevation measurement events.

A small amount of LNAPL was encountered in monitoring well MW-1 during groundwater monitoring. Consequently, a LNAPL recovery program was initiated. In

August 2004 approximately 325 milliliters (11 ounces) of LNAPL were recovered from monitoring well MW-1. The recovered LNAPL was submitted for chemical analysis. LNAPL presence checks were subsequently conducted at monitoring well MW-1 in August 2004, September 2004, October 2004, November 2004, July 2005, December 2005, and August 2007. Trace amounts of LNAPL were identified in September 2004, October 2004, November 2004, and August 2007; however, the amounts present were insufficient to recover.

Investigative results indicated that the Part 201 Industrial and Commercial DCC for arsenic and lead are exceeded for sample locations BH-BP-10-04 (3-5 ft bgs), BH-102 (3-5 ft bgs), and BH-111 (3-5 ft bgs); for ethylbenzene, toluene, and xylene at sample locations BH-BP-04-04 (5.5-7.5 ft bgs) and SB-10 (7-8 ft bgs); for xylene at sample locations BH-BP-06-04 (6-8 ft bgs) and FR-005; and for lead, cis-1,2-dichloroethene, isopropylbenzene, and vinyl chloride at sample location BH-BP-04-04 (5.5-7.5 ft bgs). The Part 201 Commercial III and IV DCC for lead are exceeded at sample location BH-103 (0-2 ft bgs).

The PSIC are exceeded for chromium at sample locations BH-BP-04-04 (5.5-7.5 ft bgs), and BH-BP-10-04 (3-5 ft bgs), compared to the Cr(VI) Criteria.

The infinite source VSIC are exceeded for cis-1,2-dichloroethene, toluene, trichloroethene, and vinyl chloride at sample location BH-BP-04-04 (5.5-7.5 ft bgs).

The SVIAC for ethylbenzene, toluene, and xylene are exceeded at sample locations BH-BP-04-04 (5.5-7.5 ft bgs) and SB-10 (7-8 ft bgs); for xylene at BH-BP-06-04 (6-8 ft bgs) and FR-005; and for cis-1,2-dichloroethene, isopropylbenzene, trichloroethene, and vinyl chloride at sample location BH-BP-04-04 (5.5-7.5 ft bgs).

There are exceedances of the GCC at location BH-BP-4-04 for trichloroethene and sample locations MW-1, MW-2, BH-BP-04-04, MW-BP-04A-04, and BH-BP-06-04 for vinyl chloride.

Exceedances of Part 201 Industrial and Commercial II, III, and IV soil criteria and Industrial and Commercial groundwater criteria are presented Figures 2.9a and 2.9b.

Any exceedances that overlap the Burn Pile that were collected at the Former Surface Impoundment are discussed in Section B.5.

GROUNDWATER PATHWAY

Groundwater Contact - There are exceedances of the GCC at location BH-BP-04-04 for trichloroethene and locations MW-1, MW-2, BH-BP-04-04, MW-BP-04A-04, and BH-BP-06-04 for vinyl chloride. This area is currently covered by soil and vegetation therefore this pathway is presently incomplete.

Inhalation (volatile) acute - There are no exceedances of these criteria.

Inhalation (volatile) indoor air - There are no exceedances of these criteria.

SOIL PATHWAY

Direct Contact - There are exceedances of the Industrial and Commercial DCC for arsenic and lead at sample locations BH-BP-10-04 (3-5 ft bgs), BH-102 (3-5 ft bgs), and BH-111 (3-5 ft bgs); for ethylbenzene, toluene, and xylene at sample locations BH-BP-04-04 (5.5-7.5 ft bgs) and SB-10 (7-8 ft bgs); for xylene at BH-BP-06-04 (6-8 ft bgs) and FR-005, and for lead, cis-1,2-dichloroethene, isopropylbenzene, and vinyl chloride at sample location BH-BP-04-04 (5.5-7.5 ft bgs). The Part 201 Commercial III and IV DCC for lead are exceeded at sample location BH-103 (0-2 ft bgs). This area is currently covered with soil and vegetation, and therefore this pathway is currently incomplete.

Inhalation (particulate) - There are exceedances of these criteria for total chromium compared to Cr(VI) at sample locations BH-BP-04-04 (5.5-7.5 ft bgs) and BH-BP-10-04 (3-5 ft bgs).

Inhalation (volatile) ambient - There are exceedances of these criteria for cis-1,2-dichloroethene, toluene, trichloroethene, and vinyl chloride at sample location BH-BP-04-04 (5.5-7.5 ft bgs).

Inhalation (volatile) indoor – There are exceedances of these criteria for ethylbenzene, toluene, and xylene at sample locations BH-BP-04-04 (5.5-7.5 ft bgs) and SB-10 (7-8 ft bgs); for xylene at BH-BP-06-04 (6-8 ft bgs) and FR-005; and for cis-1,2-dichloroethene, isopropylbenzene, trichloroethene, and vinyl chloride at sample location BH-BP-04-04 (5.5-7.5 ft bgs). There are no buildings in this area, and therefore this pathway is not complete.

Procedures for Maintenance of Due Care

Exposures to trespassers (considered to be of extremely low frequency due to existing security measures) and industrial workers (or landscapers) are expected to be mitigated by the presence of topsoil/grass and trees over the area. Potential exposure to soils through direct contact or inhalation and groundwater could occur if Site activities require excavation of subsurface soils, as could be the case during future construction activities. During construction/excavation, the soils could be disturbed and construction workers could be exposed to impacted subsurface soils and groundwater. In addition, workers could be exposed to groundwater during any monitoring well sampling activities. A risk evaluation was performed as part of the Burn Pile Phase 4 and Phase 5 Investigation report. The evaluation used the data collected at the Site through the Phase 4 and Phase 5 Investigation and methods that are consistent with U.S. EPA risk assessment guidance. The significance of potential exposures was determined by comparing estimates of Site-related cumulative cancer and noncancer risks with a cancer risk limit of 10^{-4} and an HI limit of 1, respectively, which U.S. EPA has established as triggers for corrective measures at sites under RCRA corrective action (U.S. EPA, 1991).

The risk assessment evaluated potential routine worker and construction worker exposures to soil during occasional construction/maintenance activities via incidental ingestion, dermal contact, and inhalation of vapors and particulates. The estimates of Site-related cumulative cancer risk and HI do not exceed the cancer risk limit of 10^{-4} or the HI limit of 1, respectively, and the mean lead concentration is less than the Michigan Act 451, Part 201 Industrial and Commercial II DCC of 900 mg/kg. Therefore, constituent concentrations in soil at the Site do not pose a significant risk to routine worker or construction workers.

The risk assessment also evaluated potential construction worker exposures to groundwater via incidental ingestion, dermal contact, and vapor inhalation during occasional excavations that extend into groundwater. The estimates of Site-related cumulative cancer risk and HI do not exceed the cancer risk limit of 10^{-4} or the HI limit of 1, respectively, except in groundwater in the vicinity of monitoring well MW-1, and former temporary monitoring wells BH-BP-04-04 and BH-BP-06-04. Therefore, constituent concentrations in groundwater at the Site do not pose a significant risk to construction workers, except in the area around monitoring well MW-1, and former temporary monitoring wells BH-BP-04-04 and BH-BP-06-04.

In the future, should any subsurface or groundwater sampling activities take place, a HASP will be prepared for the Site prior to initiation of work, as a result of the

subsurface contamination. The HASP should account for potential exposure to subsurface soil and groundwater, and provide the necessary monitoring and PPE. All workers will be shown the analytical data pertinent to this area prior to commencing work and asked to confirm their understanding of the risks in this area by signing below. All removed soils and groundwater will be managed appropriately.

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Record of Maintenance of Due Care

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SIGNATURES

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Print Name	*Signature*	*Date*

C. REFERENCES

CRA (January 1994), Building 33-Free Product Study Area, Conestoga-Rovers & Associates.

CRA (June 1994), Duco Stores-Fuel Line Study Area, Conestoga-Rovers & Associates.

CRA (February 1995), Revised Draft Extent of Contamination (EOC) Study Report, Conestoga-Rovers & Associates.

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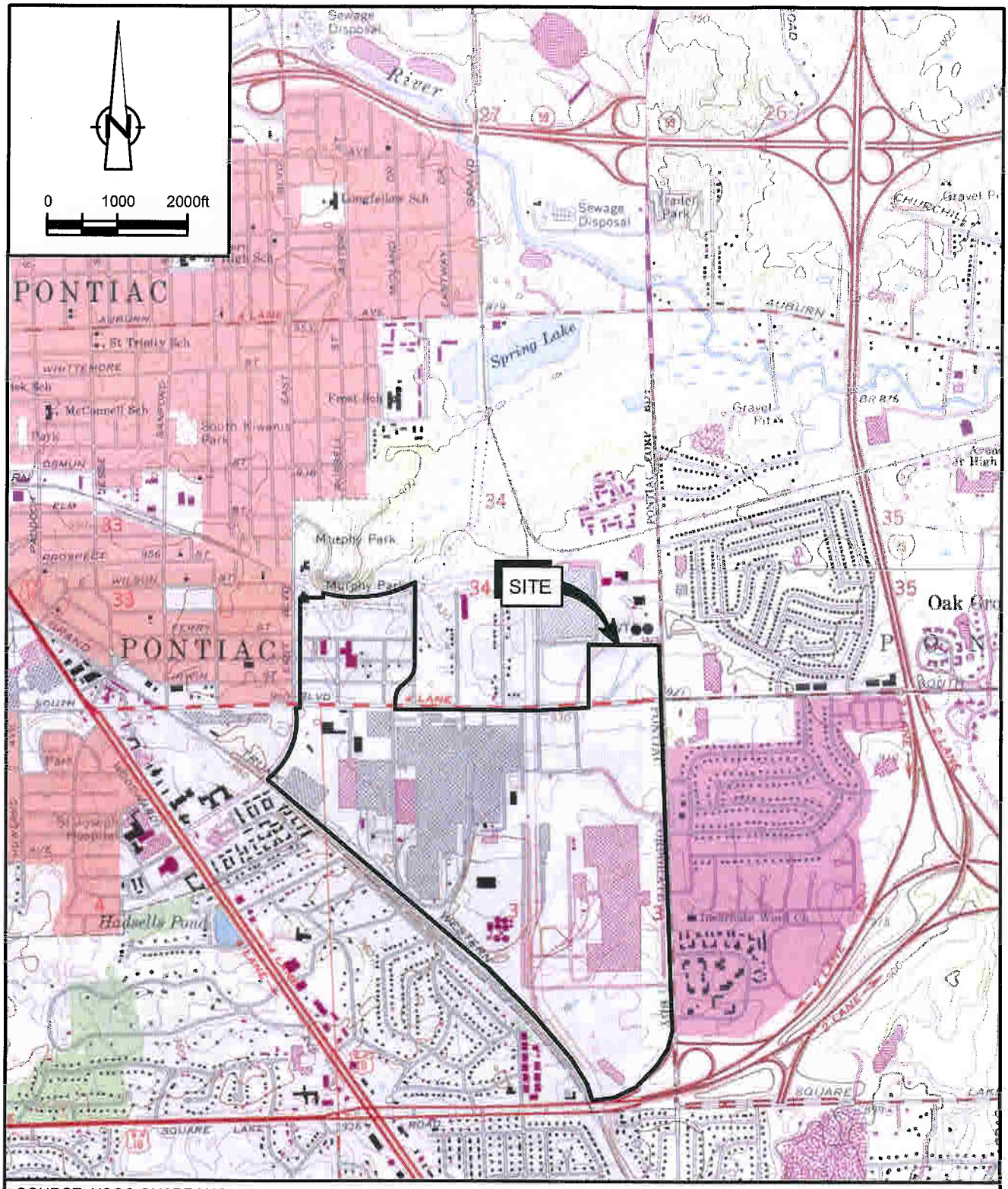
MDEQ (June 2006), Training Material for Part 201 Cleanup Criteria and Part 213 Risk-Based Screening Levels, Michigan Department of Environmental Quality.

U.S. EPA (1987), Preliminary Review/Visual Site Inspection Report (PR/VSI) of the General Motors Truck and Bus Group, Pontiac, Michigan Plant, A.T. Kearney & K.W. Brown Associates Inc., March 1987.



SOURCE: USGS QUADRANGLE MAPS;
BIRMINGHAM, ROCHESTER, PONTIAC NORTH,
AND PONTIAC SOUTH, MICHIGAN

figure 1.1

SITE LOCATION
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan

07097-01(059)GN-WA001 AUG 30/2007

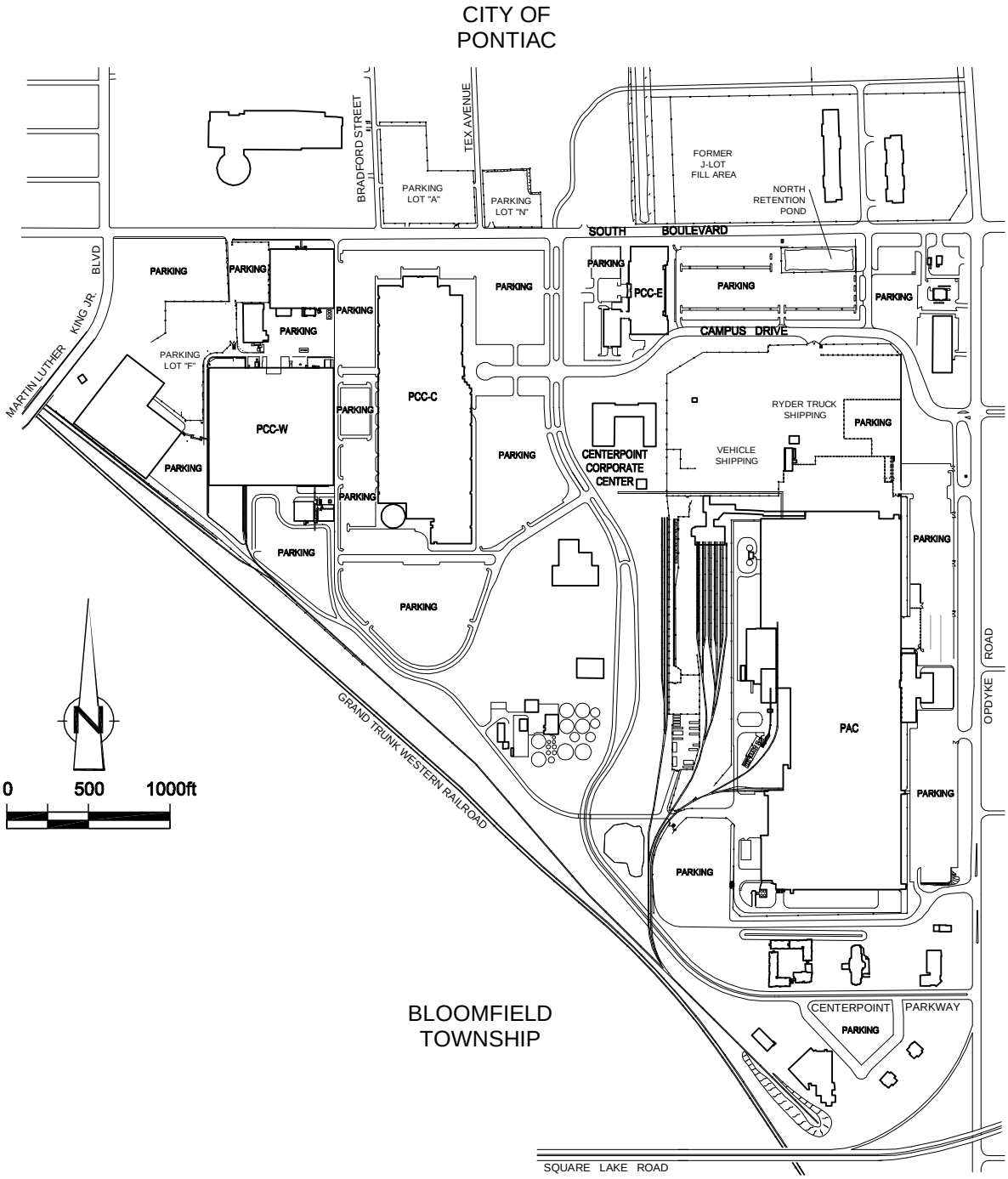
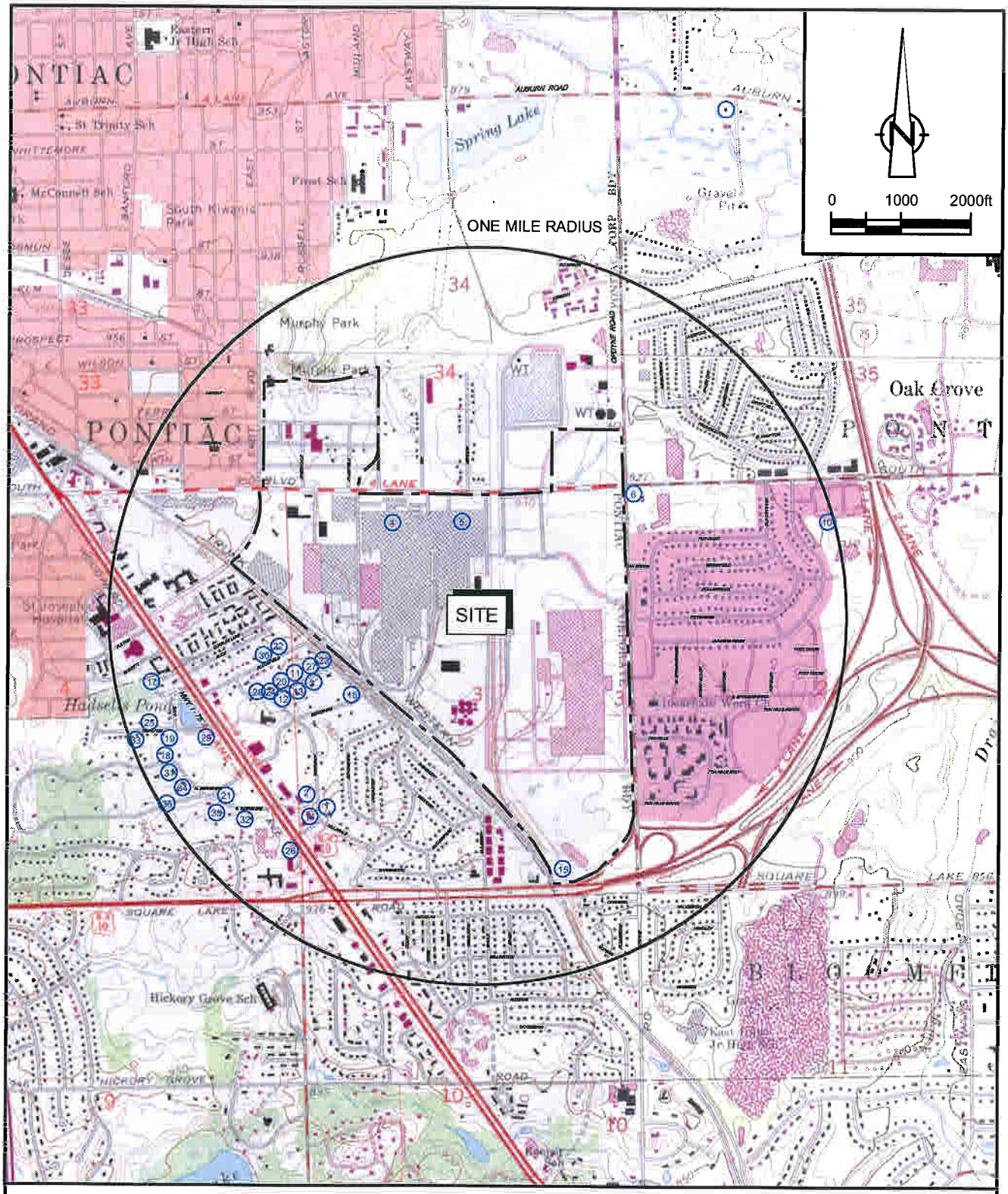


figure 1.2

SITE PLAN
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan



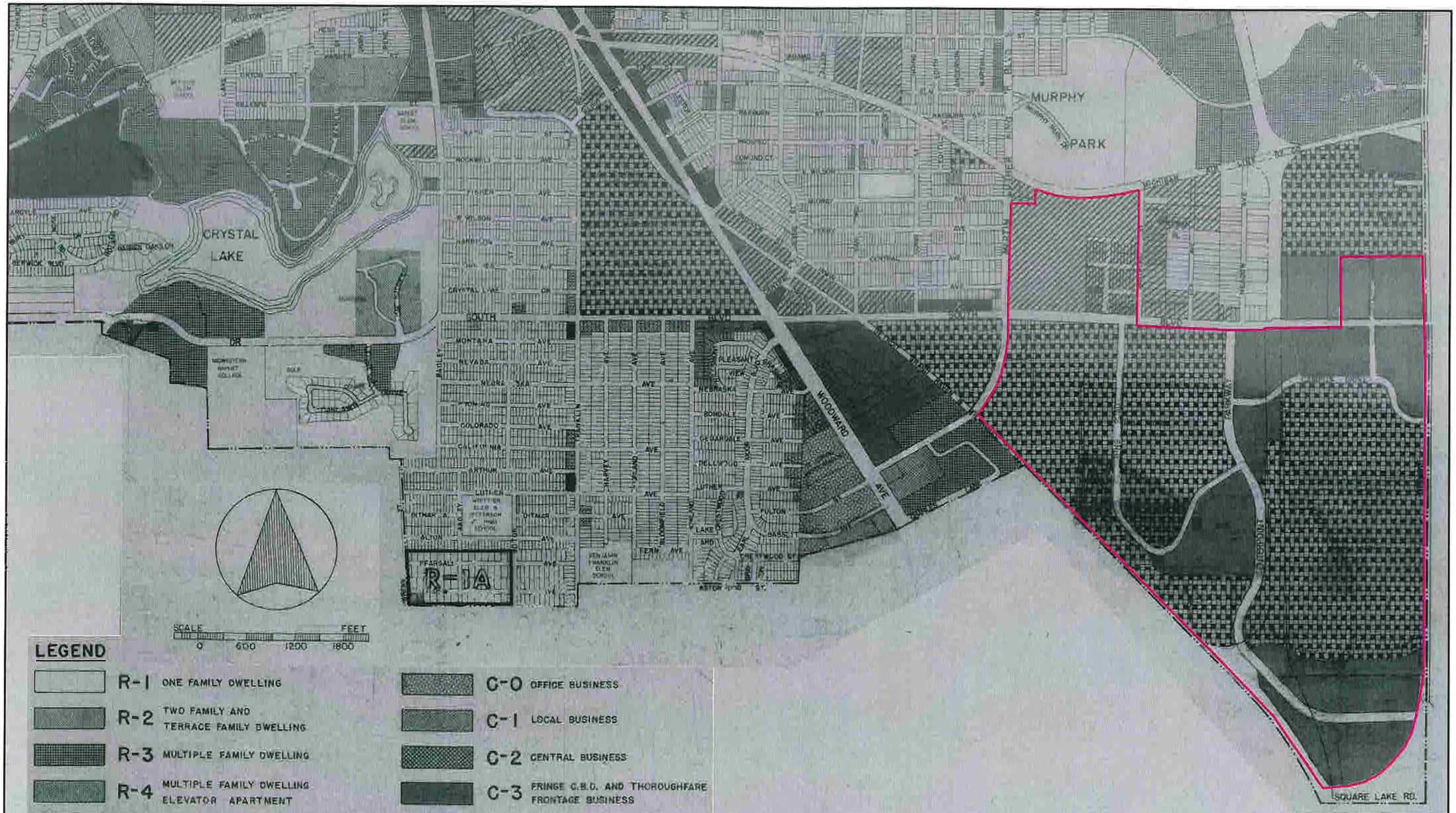
LEGEND

(35) WELL LOCATION

figure 1.3

ON/OFF-SITE WELL LOCATION PLAN
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan

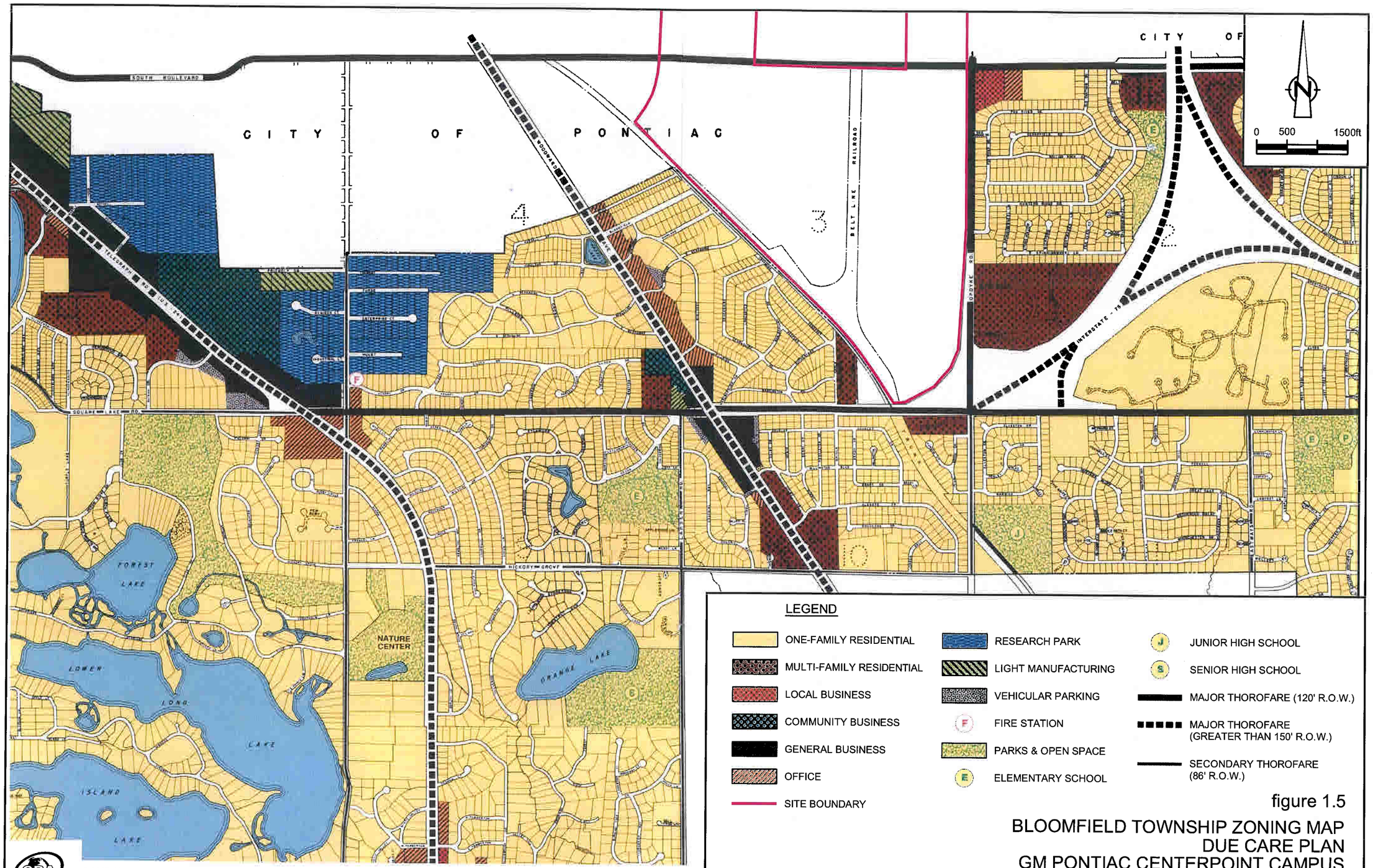
07097-01(059)GN-WA003 AUG 30/2007



SOURCE: CITY OF PONTIAC PLANNING COMMISSION

figure 1.4

CITY OF PONTIAC ZONING MAP
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan



SOURCE: BLOOMFIELD TOWNSHIP PLANNING COMMISSION, MASTER PLAN FOR FUTURE LAND USE

figure 1.5

BLOOMFIELD TOWNSHIP ZONING MAP
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan

07097-01(059)GN-WA005 AUG 30/2007

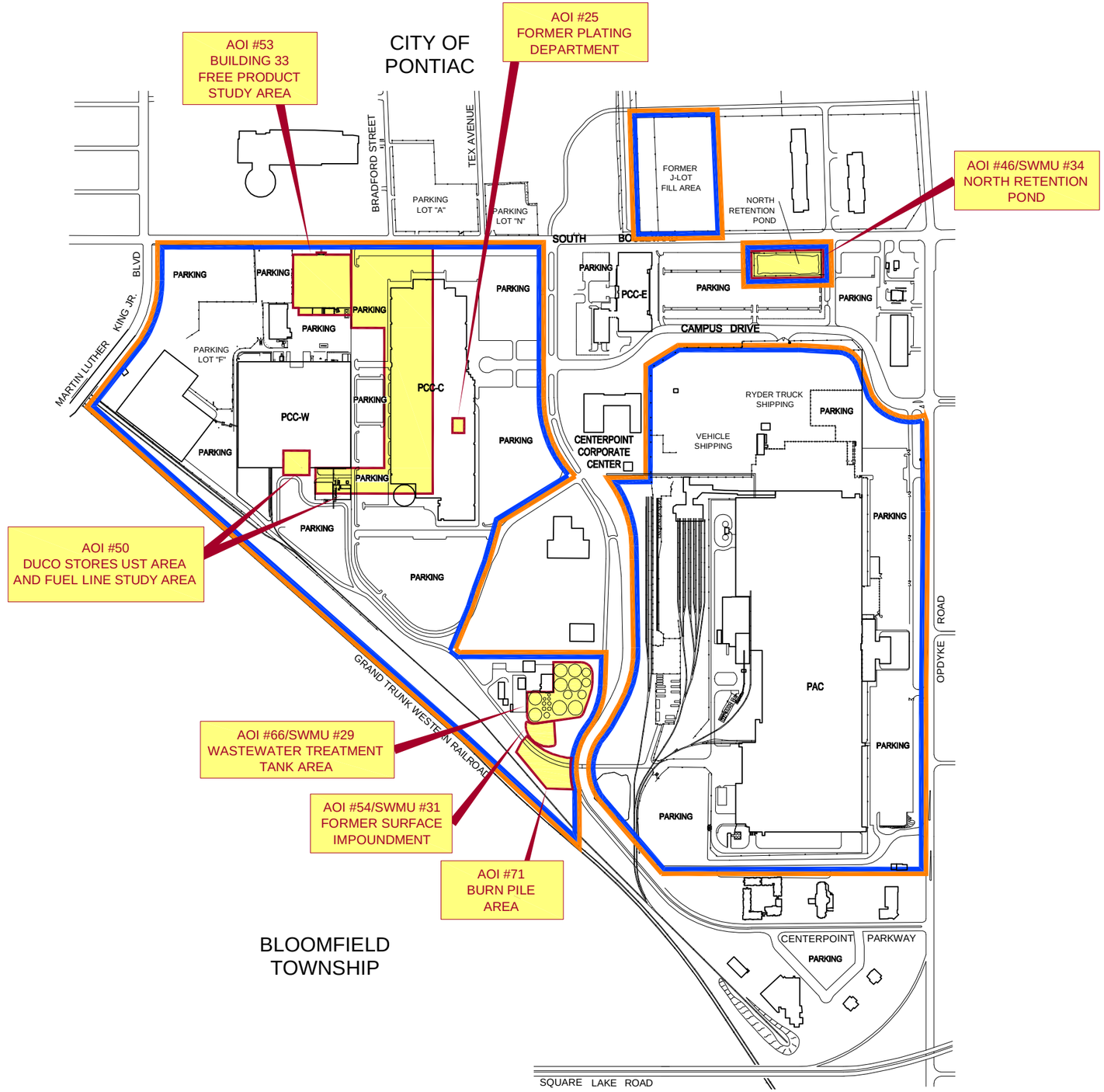


figure 1.6

DEED RESTRICTION LOCATIONS
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan

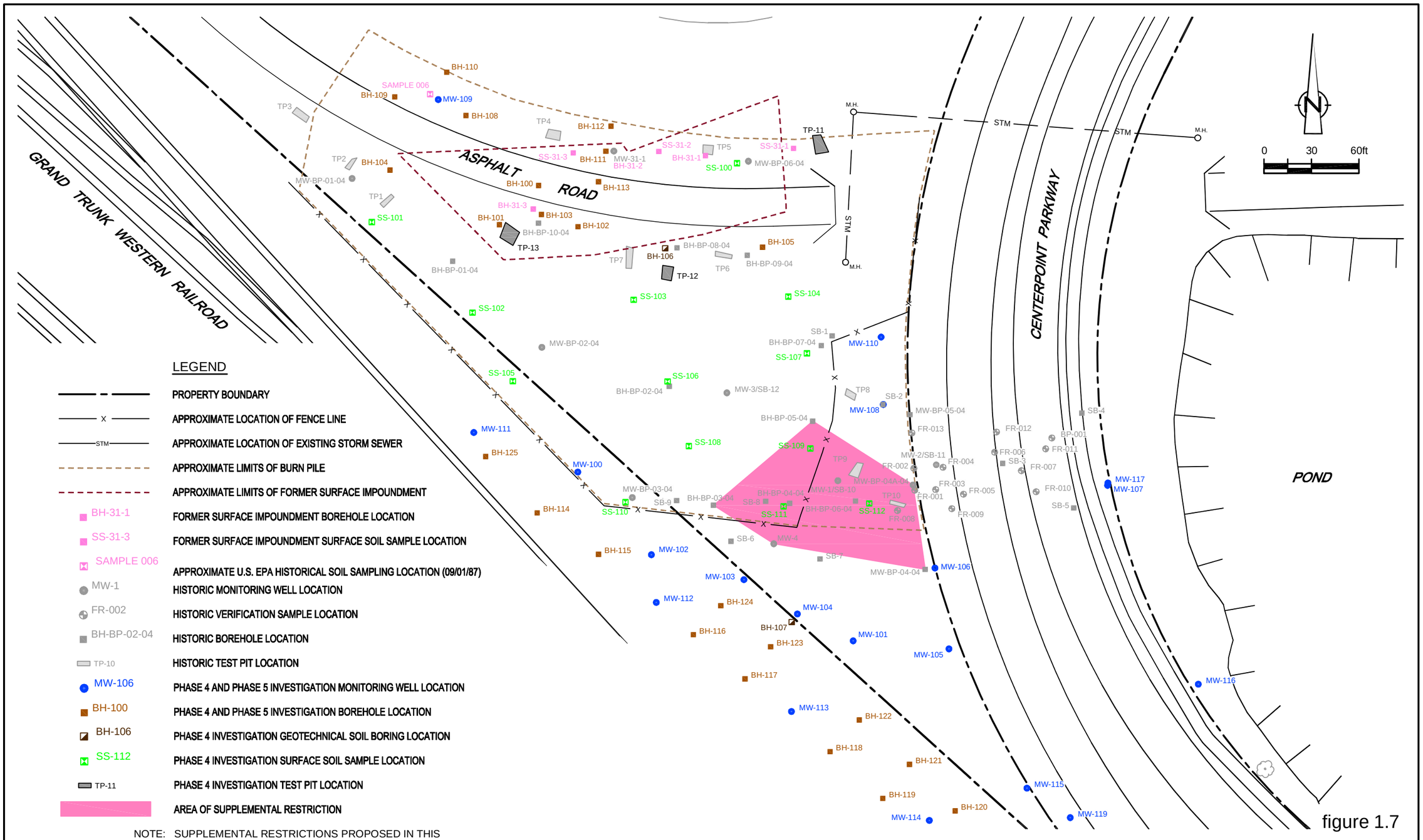
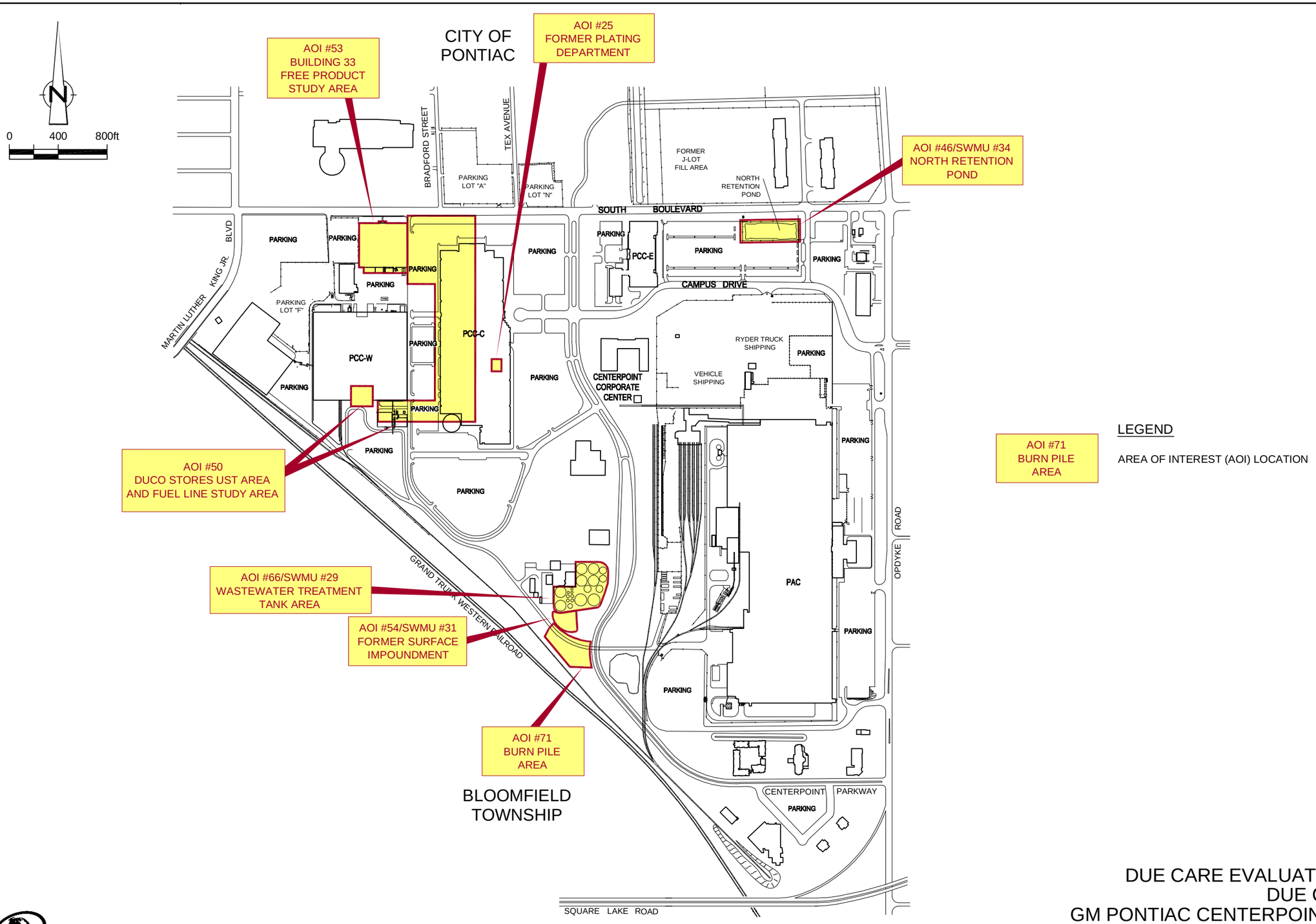


figure 1.7

SUPPLEMENTAL DEED RESTRICTIONS - BURN PILE
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan



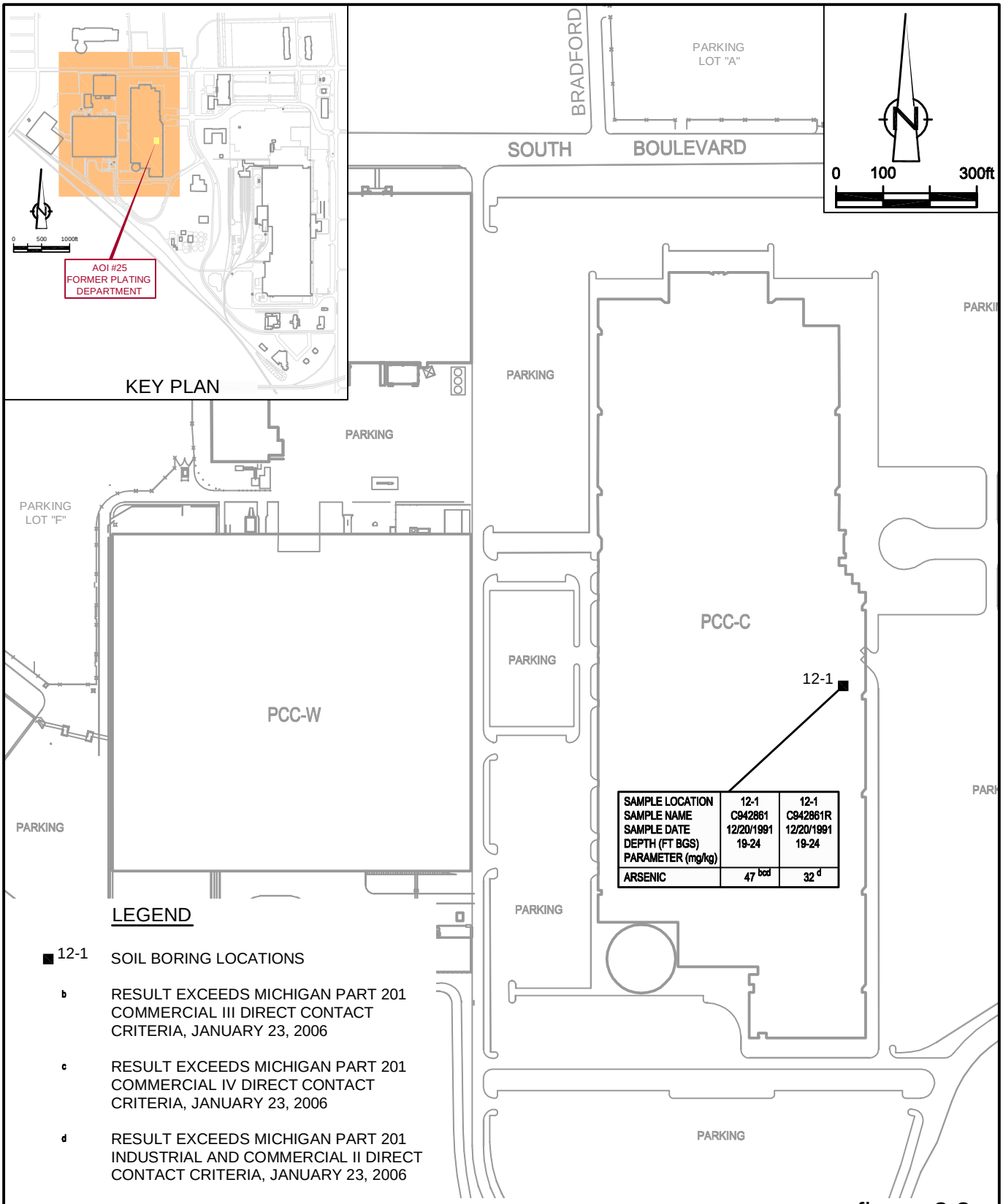
AOI #71
BURN PILE
AREA

LEGEND

AREA OF INTEREST (AOI) LOCATION

figure 2.1

DUE CARE EVALUATION AREAS
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan



LEGEND

- ■ 12-1 — SOIL BORING LOCATIONS
- b — RESULT EXCEEDS MICHIGAN PART 201 COMMERCIAL III DIRECT CONTACT CRITERIA, JANUARY 23, 2006
- c — RESULT EXCEEDS MICHIGAN PART 201 COMMERCIAL IV DIRECT CONTACT CRITERIA, JANUARY 23, 2006
- d — RESULT EXCEEDS MICHIGAN PART 201 INDUSTRIAL AND COMMERCIAL II DIRECT CONTACT CRITERIA, JANUARY 23, 2006
- FT BGS — FEET BELOW GROUND SURFACE

figure 2.2

FORMER PLATING DEPARTMENT - SUMMARY OF EXCEEDANCES
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan

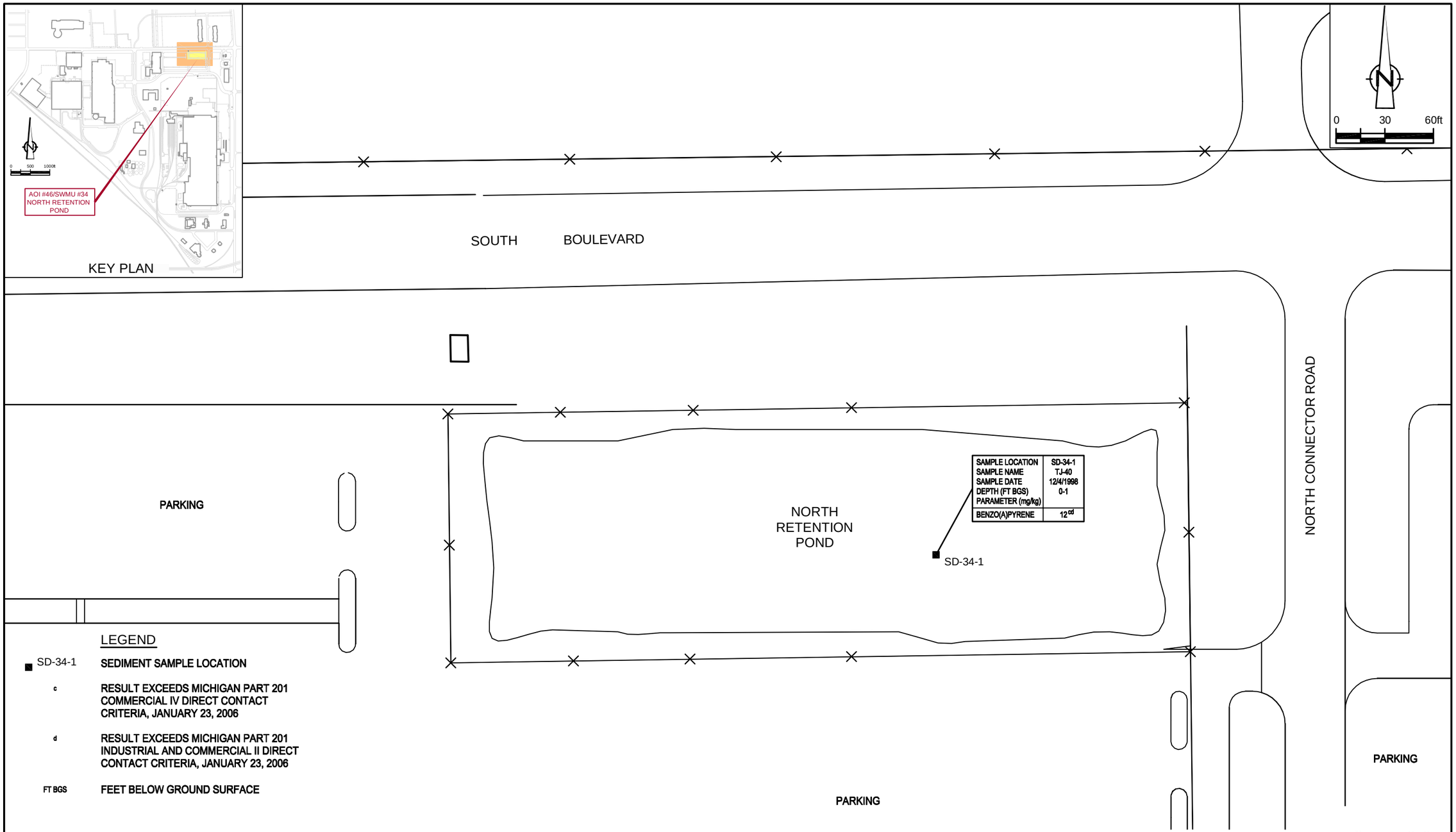
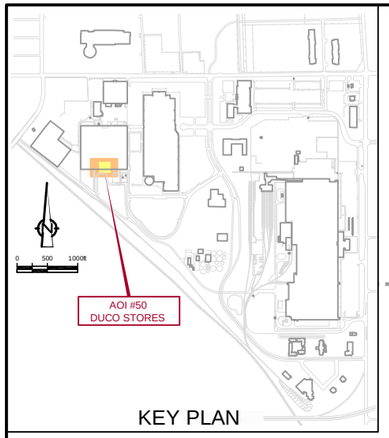
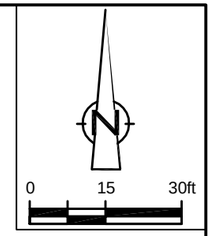


figure 2.3

NORTH RETENTION POND - SUMMARY OF EXCEEDANCES
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan



KEY PLAN



LEGEND

▲ 2 SIDEWALL VERIFICATION SAMPLE LOCATION

EXCAVATION LIMIT

SAMPLE GRID LINE

HISTORIC BUILDING

a RESULT EXCEEDS MICHIGAN PART 201 INFINITE SOURCE VOLATILE INHALATION CRITERIA, JANUARY 23, 2006

b RESULT EXCEEDS MICHIGAN PART 201 COMMERCIAL III DIRECT CONTACT CRITERIA, JANUARY 23, 2006

c RESULT EXCEEDS MICHIGAN PART 201 COMMERCIAL IV DIRECT CONTACT CRITERIA, JANUARY 23, 2006

d RESULT EXCEEDS MICHIGAN PART 201 INDUSTRIAL AND COMMERCIAL II DIRECT CONTACT CRITERIA, JANUARY 23, 2006

e RESULT EXCEEDS MICHIGAN PART 201 SOIL VOLATILIZATION TO INDOOR AIR CRITERIA, JANUARY 23, 2006

g RESULT EXCEEDS MICHIGAN PART 201 GROUNDWATER CONTACT PROTECTION CRITERIA, JANUARY 23, 2006

J PARAMETER CONCENTRATION IS AN ESTIMATED VALUE

FT BGS FEET BELOW GROUND SURFACE

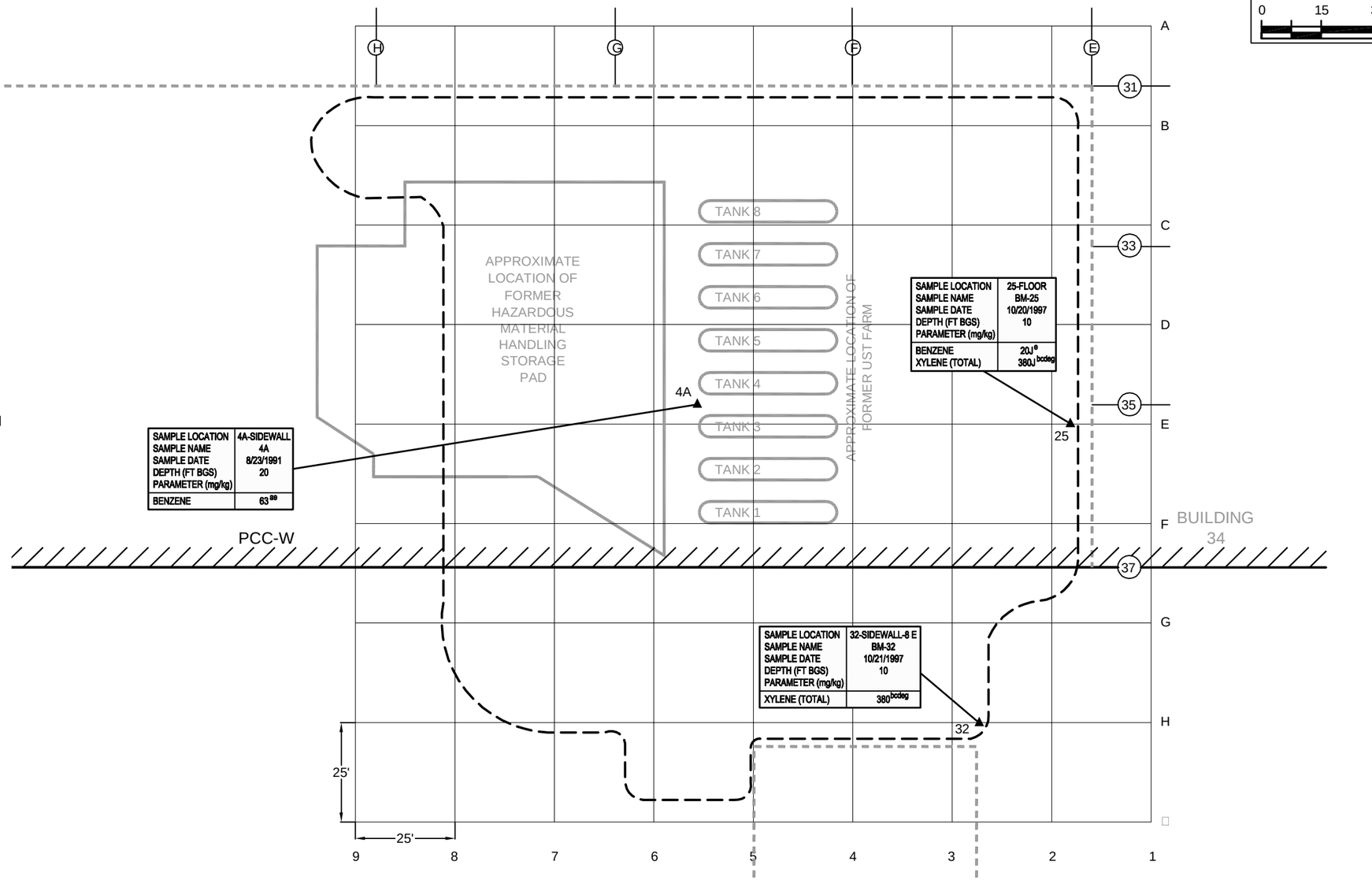


figure 2.4

DUCO STORES UST STUDY AREA - SUMMARY OF EXCEEDANCES
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan

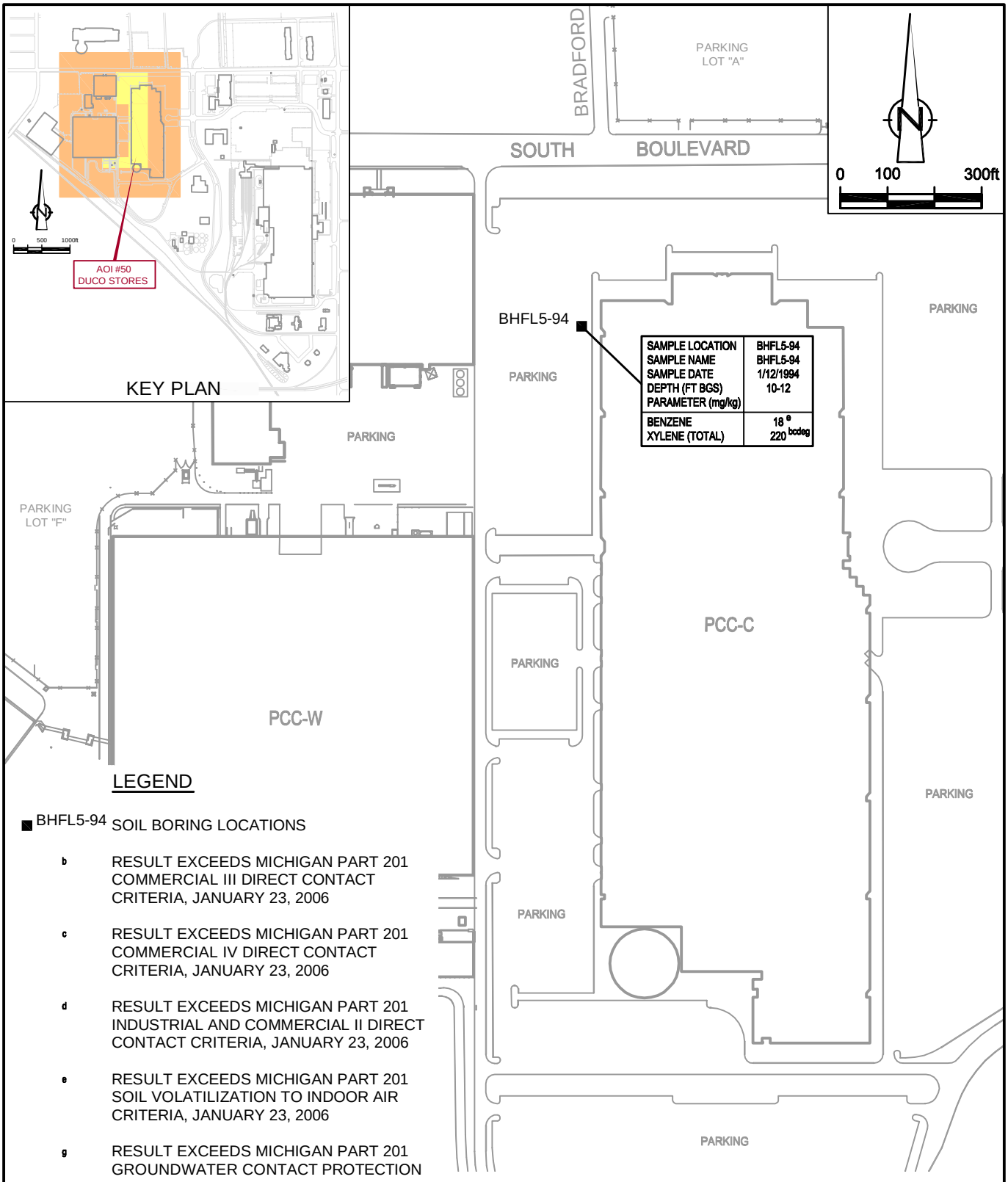
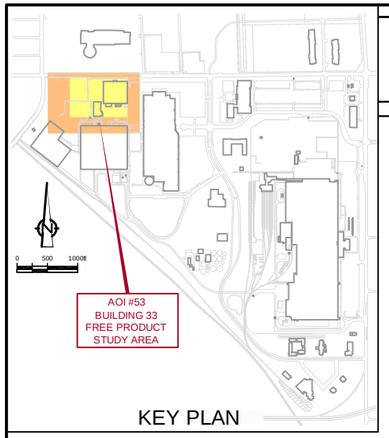


figure 2.5

DUCO STORES FUEL LINE STUDY AREA - SUMMARY OF EXCEEDANCES
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan



KEY PLAN

SOUTH BOULEVARD

PARKING

PARKING

BUILDING 33

SAMPLE LOCATION	BH33-1-94	BH33-1-94
SAMPLE NAME	FR-29	FR0-30
SAMPLE DATE	5/25/1994	5/25/1994
DEPTH (FT BGS)	15.5-16	16-18
PARAMETER (mg/kg)		
BENZENE	200 [ae]	9.1 [e]
ETHYLBENZENE	240 [bcde]	-
TOLUENE	690 [bcde]	-
XYLENE (TOTAL)	1200 [bcde]	-

LNAPL AREA 1

LNAPL AREA 2

BH33-1-94

BH33-6-04

BUILDING 35

SAMPLE LOCATION	BH33-6-04
SAMPLE NAME	MM-004
SAMPLE DATE	6/04/2004
DEPTH (FT BGS)	15-17
PARAMETER (mg/kg)	
1,2,4-TRIMETHYLBENZENE	180 [bcde]
BENZENE	100 [ae]
TOLUENE	280 [bcde]
XYLENE (TOTAL)	450 [bcde]

PARKING

PARKING

PARKING LOT "F"

BUILDING 52

0 50 100ft

LEGEND

- BH33-1-94 — BOREHOLE/MONITORING WELL LOCATION (CRA)
- a — RESULT EXCEEDS MICHIGAN PART 201 INFINITE SOURCE VOLATILE INHALATION CRITERIA, JANUARY 23, 2006
- b — RESULT EXCEEDS MICHIGAN PART 201 COMMERCIAL III DIRECT CONTACT CRITERIA, JANUARY 23, 2006
- c — RESULT EXCEEDS MICHIGAN PART 201 COMMERCIAL IV DIRECT CONTACT CRITERIA, JANUARY 23, 2006
- d — RESULT EXCEEDS MICHIGAN PART 201 INDUSTRIAL AND COMMERCIAL II DIRECT CONTACT CRITERIA, JANUARY 23, 2006
- e — RESULT EXCEEDS MICHIGAN PART 201 SOIL VOLATILIZATION TO INDOOR AIR CRITERIA, JANUARY 23, 2006
- FT BGS — FEET BELOW GROUND SURFACE
- APPROXIMATE EXTENT OF LNAPL (AUGUST 2007)

figure 2.6

BUILDING 33 FREE PRODUCT STUDY AREA - SUMMARY OF EXCEEDANCES
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan

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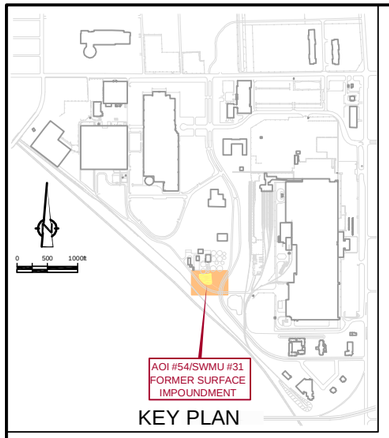
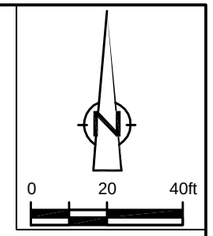


KEY PLAN



GENERAL WASTE TREATMENT TANK #6

#5

CLARIFIER #1

WWTP ACCESS ROAD

ACCESS ROAD

CENTERPOINT PARKWAY

SAMPLE LOCATION	006
SAMPLE NAME	27819
SAMPLE DATE	9/25/1987
DEPTH (FT BGS)	0-0.5
PARAMETER (mg/kg)	
ARSENIC	150 bcd
CHROMIUM TOTAL	350 f
LEAD	2200 bcd

SAMPLE 006 (09/01/87)

SAMPLE LOCATION	BH-31-2
SAMPLE NAME	DS-61
SAMPLE DATE	12/17/1998
DEPTH (FT BGS)	1-1.5
PARAMETER (mg/kg)	
ARSENIC	117 bcd
CHROMIUM TOTAL	1570 f
LEAD	1790 bcd

BH-31-2

SAMPLE LOCATION	SS-31-1
SAMPLE NAME	DS-54
SAMPLE DATE	12/11/1998
DEPTH (FT BGS)	0-2
PARAMETER (mg/kg)	
CHROMIUM TOTAL	341 f
LEAD	765 bc

SS-31-1

SAMPLE LOCATION	BH-31-3
SAMPLE NAME	DS-53
SAMPLE DATE	12/11/1998
DEPTH (FT BGS)	4-6
PARAMETER (mg/kg)	
ARSENIC	140 bcd
CHROMIUM TOTAL	4970 f
LEAD	2780 bcd

BH-31-3

ACCESS ROAD

LEGEND

- ■ BH-31-2 — BOREHOLE LOCATION
- ■ SS-31-1 — SURFACE SOIL SAMPLE LOCATION
- ⊙ SAMPLE 006 (09/01/87) — APPROX. U.S. EPA HISTORICAL SOIL SAMPLING LOCATION
- – – – APPROXIMATE BOUNDARY OF THE FORMER SURFACE IMPOUNDEMNT
- b — RESULT EXCEEDS MICHIGAN PART 201 COMMERCIAL III DIRECT CONTACT CRITERIA, JANUARY 23, 2006
- c — RESULT EXCEEDS MICHIGAN PART 201 COMMERCIAL IV DIRECT CONTACT CRITERIA, JANUARY 23, 2006
- d — RESULT EXCEEDS MICHIGAN PART 201 INDUSTRIAL AND COMMERCIAL II DIRECT CONTACT CRITERIA, JANUARY 23, 2006
- e — RESULT EXCEEDS MICHIGAN PART 201 SOIL VOLATILIZATION TO INDOOR AIR CRITERIA, JANUARY 23, 2006
- f — RESULT EXCEEDS MICHIGAN PART 201 PARTICULATE SOIL INHALATION CRITERIA, JANUARY 23, 2006
- F — ELEVATED DETECTION LIMIT
- FT BGS — FEET BELOW GROUND SURFACE

NOTE: CHROMIUM TOTAL CONCENTRATIONS ARE COMPARED TO Cr(VI) CRITERIA AS THERE ARE NO CRITERIA FOR CHROMIUM TOTAL

figure 2.7

FORMER SURFACE IMPOUNDMENT - SUMMARY OF EXCEEDANCES
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan

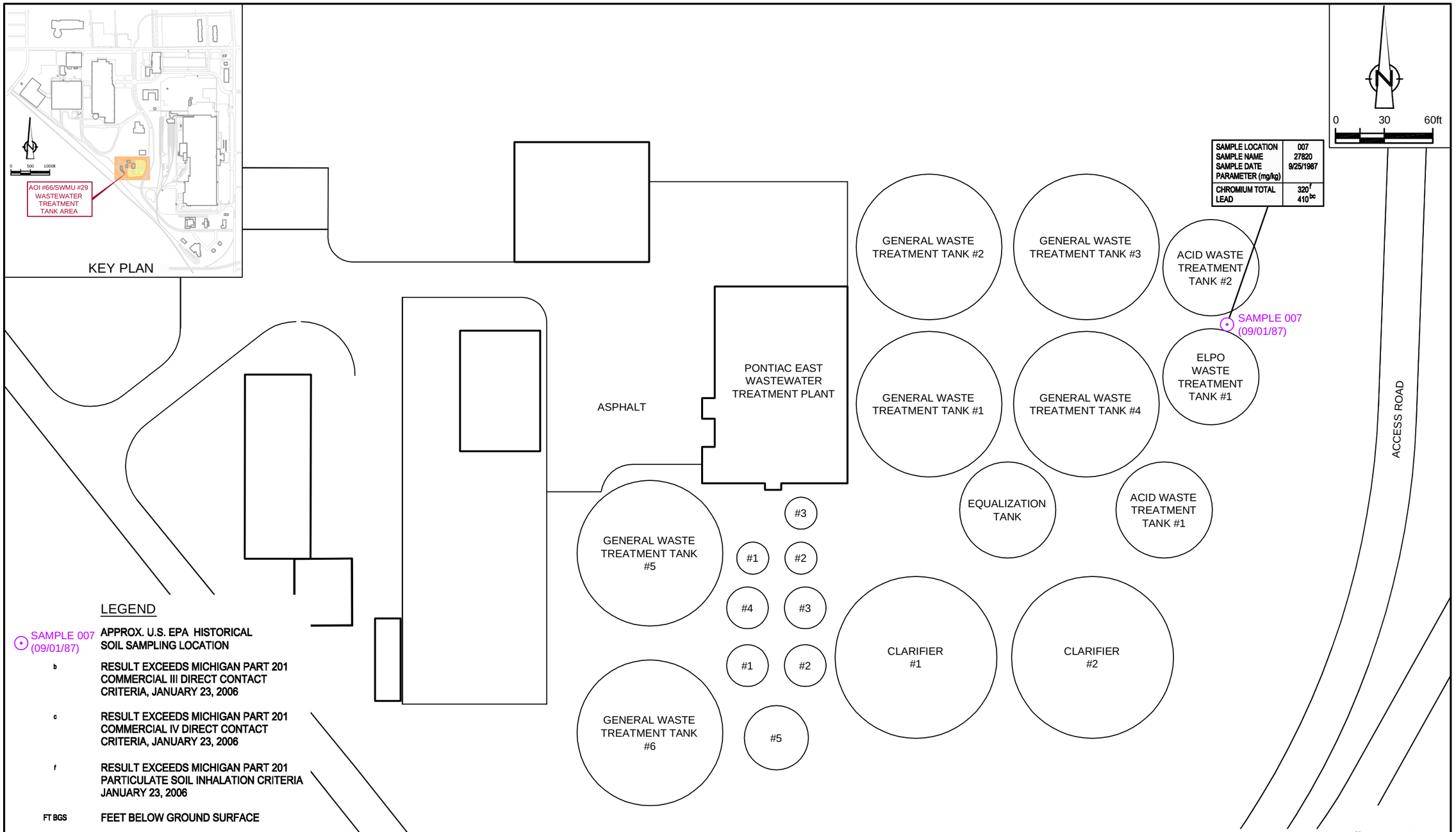
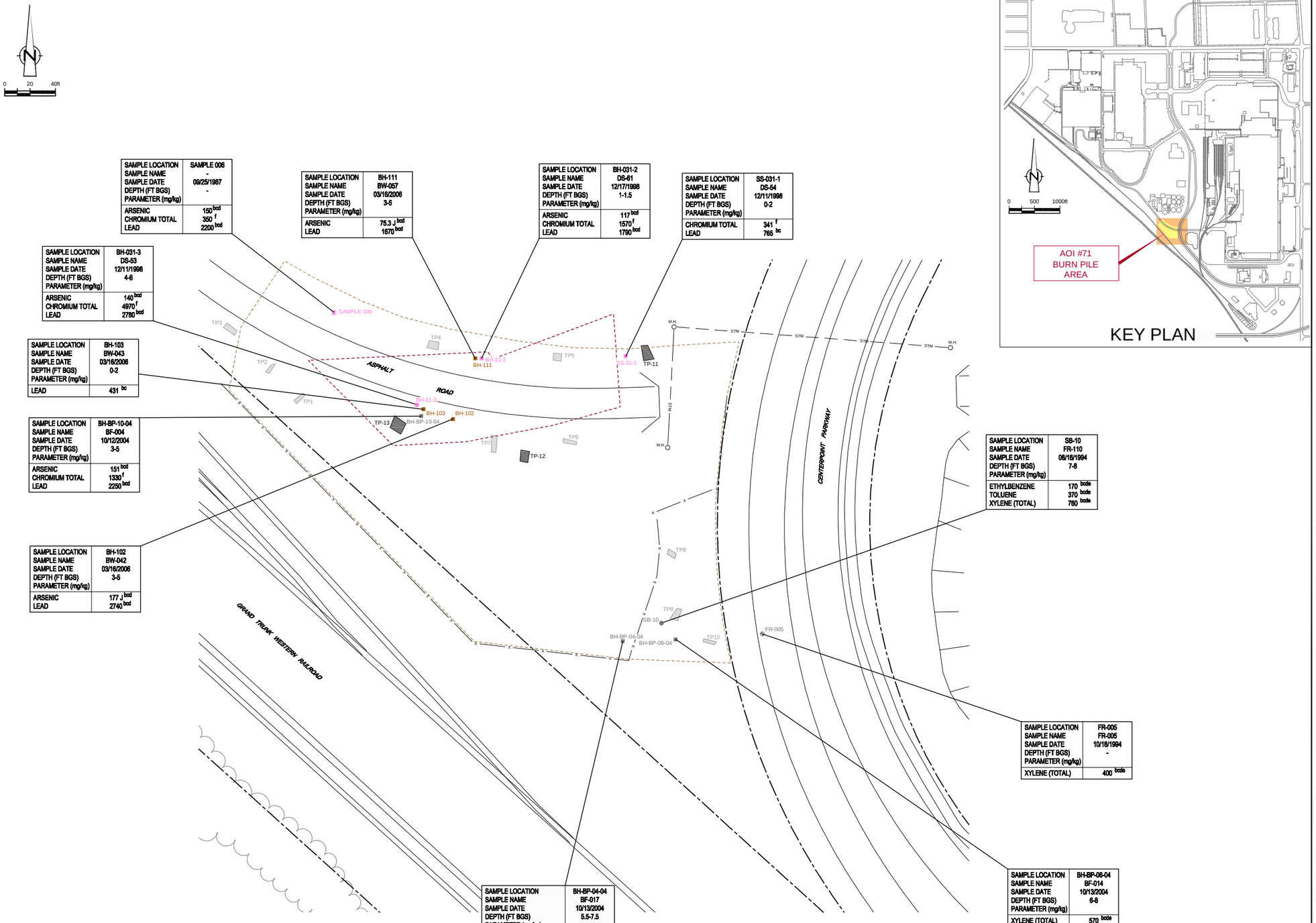


figure 2.8

WASTEWATER TREATMENT PLANT - SUMMARY OF EXCEEDANCES
DUE CARE PLAN
GM PONTIAC CENTERPOINT CAMPUS
Pontiac, Michigan



N°	Revision	Date	Initial

LEGEND

- PROPERTY BOUNDARY
- APPROXIMATE LOCATION OF FENCE LINE
- APPROXIMATE LOCATION OF EXISTING STORM SEWER
- APPROXIMATE LIMITS OF BURN PILE
- APPROXIMATE LIMITS OF FORMER SURFACE IMPOUNDMENT
- BH-31-3 — FORMER SURFACE IMPOUNDMENT BOREHOLE LOCATION
- SS-31-1 — FORMER SURFACE IMPOUNDMENT SURFACE SOIL SAMPLE LOCATION
- SAMPLE 006 — APPROXIMATE U.S. EPA HISTORICAL SOIL SAMPLING LOCATION (09/01/87)
- MW-1/SB-10 — HISTORIC MONITORING WELL LOCATION
- FR-005 — HISTORIC VERIFICATION SAMPLE LOCATION
- BH-BP-06-04 — HISTORIC BOREHOLE LOCATION
- TP-10 — HISTORIC TEST PIT LOCATION
- BH-102 — PHASE 4 AND PHASE 5 INVESTIGATION BOREHOLE LOCATION
- TP-11 — PHASE 4 INVESTIGATION TEST PIT LOCATION

J — PARAMETER CONCENTRATION IS AN ESTIMATED VALUE

a — RESULT EXCEEDS MICHIGAN PART 201 INFINITE SOURCE VOLATILE INHALATION CRITERIA, JANUARY 23, 2006

b — RESULT EXCEEDS MICHIGAN PART 201 COMMERCIAL III DIRECT CONTACT CRITERIA, JANUARY 23, 2006

c — RESULT EXCEEDS MICHIGAN PART 201 COMMERCIAL IV DIRECT CONTACT CRITERIA, JANUARY 23, 2006

d — RESULT EXCEEDS MICHIGAN PART 201 INDUSTRIAL AND COMMERCIAL II DIRECT CONTACT CRITERIA, JANUARY 23, 2006

e — RESULT EXCEEDS MICHIGAN PART 201 SOIL VOLATILIZATION TO INDOOR AIR CRITERIA, JANUARY 23, 2006

f — RESULT EXCEEDS MICHIGAN PART 201 PARTICULATE SOIL INHALATION CRITERIA, JANUARY 23, 2006

FT BGS — FEET BELOW GROUND SURFACE

NOTES:
1. DATA PRESENTED IS UNVALIDATED AND SUBJECT TO CHANGE PENDING RESULTS OF DATA VALIDATION
2. DISPLAYED RESULTS IN mg/kg
3. DISPLAYED RESULTS for MW-1 are LNAPL

SCALE VERIFICATION

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

Approved

DRAWING STATUS

Status	Date	Initial

GM PONTIAC CENTERPOINT CAMPUS
PONTIAC, MICHIGAN

DUE CARE PLAN

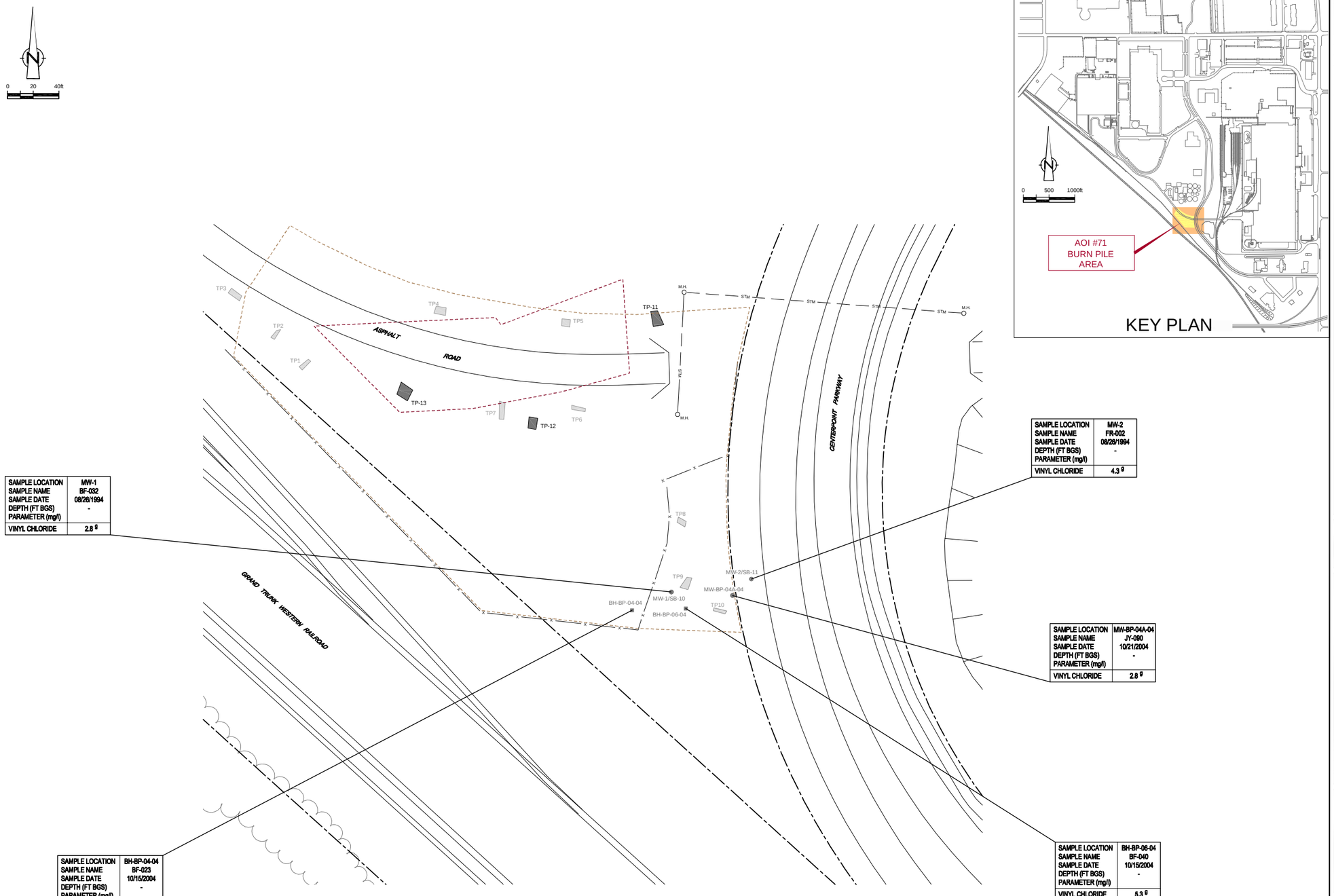
BURN PILE - SUMMARY OF SOIL EXCEEDANCES

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
J.P.	L.W.	AUGUST 2007	
Scale:	Project N°:	Report N°:	Drawing N°:
AS SHOWN	07097-01	059	figure 2.9a

07097-01(059)GN-WA015 AUG 31/2007



SAMPLE LOCATION	MW-1
SAMPLE NAME	BF-032
SAMPLE DATE	08/26/1994
DEPTH (FT BGS)	-
PARAMETER (mg/l)	
VINYL CHLORIDE	2.8 g

SAMPLE LOCATION	MW-2
SAMPLE NAME	FR-002
SAMPLE DATE	08/26/1994
DEPTH (FT BGS)	-
PARAMETER (mg/l)	
VINYL CHLORIDE	4.3 g

SAMPLE LOCATION	MW-BP-04A-04
SAMPLE NAME	JY-090
SAMPLE DATE	10/21/2004
DEPTH (FT BGS)	-
PARAMETER (mg/l)	
VINYL CHLORIDE	2.8 g

SAMPLE LOCATION	BH-BP-04-04
SAMPLE NAME	BF-023
SAMPLE DATE	10/15/2004
DEPTH (FT BGS)	-
PARAMETER (mg/l)	
TRICHLOROETHENE	23 g
VINYL CHLORIDE	8.1 g

SAMPLE LOCATION	BH-BP-06-04
SAMPLE NAME	BF-040
SAMPLE DATE	10/15/2004
DEPTH (FT BGS)	-
PARAMETER (mg/l)	
VINYL CHLORIDE	5.3 g

KEY PLAN

Nº	Revision	Date	Initial

LEGEND

- PROPERTY BOUNDARY
- x — APPROXIMATE LOCATION OF FENCE LINE
- STM — APPROXIMATE LOCATION OF EXISTING STORM SEWER
- APPROXIMATE LIMITS OF BURN PILE
- APPROXIMATE LIMITS OF FORMER SURFACE IMPOUNDMENT
- MW-BP-04A-04 — HISTORIC MONITORING WELL LOCATION
- BH-BP-06-04 — HISTORIC BOREHOLE LOCATION
- TP-10 — HISTORIC TEST PIT LOCATION
- TP-11 — PHASE 4 INVESTIGATION TEST PIT LOCATION
- J — PARAMETER CONCENTRATION IS AN ESTIMATED VALUE
- g — RESULT EXCEEDS MICHIGAN PART 201 GROUNDWATER CONTACT CRITERIA, JANUARY 23, 2006
- FT BGS — FEET BELOW GROUND SURFACE

NOTES:
1. DATA PRESENTED IS UNVALIDATED AND SUBJECT TO CHANGE PENDING RESULTS OF DATA VALIDATION
2. DISPLAYED RESULTS IN mg/l

SCALE VERIFICATION

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

Approved

DRAWING STATUS

Status	Date	Initial

GM PONTIAC CENTERPOINT CAMPUS
PONTIAC, MICHIGAN

DUE CARE PLAN

BURN PILE - SUMMARY OF GROUNDWATER EXCEEDANCES

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
J.P.	L.W.	AUGUST 2007	
Scale: AS SHOWN	Project Nº: 07097-01	Report Nº: 059	Drawing Nº: figure 2.9b

07097-01(059)GN-WA016 AUG 31/2007

TABLE 2.1

AIR MONITORING ACTION LEVELS
CENTERPOINT BUSINESS CAMPUS
PONTIAC, MICHIGAN

Total Organic Vapor Concentration Above Background	***Action Required***
Instrument Reading	
1-10 ppm	Level C - Full or half-face APR.
10-250 ppm	Level B - Supplied Air or SCBA.
>250 ppm	Level B - Shutdown activities - Move to safe area - Confer with HSO.

Combustible Gases (Non-confined Space)	
Instrument Reading	
0-10% LEL	Continue working and monitor atmosphere for combustible gases.
10-20% LEL	Continue working with caution. Inform personnel in area. Be prepared to cease operations.
>20% LEL	Cease operations, move to a safe place. Re-evaluate work plan. Ventilate. Do not continue working until conditions are constantly below 20% LEL.

Oxygen	
Instrument Reading	
<19.5% or >23.5%	Cease operations, move to a safe area. Re-evaluate work plan. Do not continue working until oxygen levels are between 19.5% and 23.5%.

1) APR - Air Purifying Respirator.
2) SCBA - Pressure Demand Self Contained Breathing Apparatus.
3) HSO - Health and Safety Officer.
4) LEL - Lower Explosive Limit.
5) An atmospheric oxygen level of less than 19.5% may affect the readings from a combustible gas meter give lower than actual levels. Test oxygen content first.

APPENDIX A

WORK AUTHORIZATION FORM

WORK AUTHORIZATION FORM

DATE FORM SUBMITTED _____

AREA WORK BEING DONE IN_____

_____

_____

_____

DESCRIBE WORK ACTIVITY (SUBSURFACE OR SURFACE) _____

_____

_____

_____

_____

_____

_____

_____

_____

PERSONNEL INTENDED TO DO WORK _____

_____

_____

_____

DATES WORK TO BE DONE _____

SAMPLING DONE ON DISTURBED MATERIALS ? _____**(yes/no) if yes attach**

FORM SUBMITTED BY _____

DATE_____

FORM REVIEWED BY _____
(must be environmental engineer responsible for Due Care under Part 201)

DATE _____

REQUIREMENTS FOR PRE-SAMPLING BEFORE WORK COMMENCES _____

_____

_____

_____

_____

_____

_____

_____

_____

Work Plan _____

Health and Safety Plan _____

REQUIREMENTS COVERED _____
DATE _____

APPENDIX B

NOTICE OF DUE CARE OBLIGATION LETTER

Worldwide Facilities Group
Environmental & Regulatory Support
Remediation Team

February 9, 2004

Address to: individual, the CEO if the easement holder is a company, or the director if the easement holder is a part of a local governmental entity or authority.

Use CERTIFIED MAIL only

Re: Notice of Due Care Michigan Part 201 Obligation
INSERT PROPERTY NAME AND LOCATION

Dear _____:

This communication is intended to comply with Section 20107a of Michigan Public Act 451, Part 201 and the administrative rules that regulate environmental remediation.

Section 20107a of Act 451 requires owners and operators of property that contain hazardous substances which may present an unacceptable risk to human health to undertake specific measures commonly referred to as "due care." Rule R299.51013 (6) allows owners and operators of such property to satisfy certain due care obligations by providing written notice to easement holders, utility franchises, public utilities and owners/lessees of mineral rights.

This notice is intended to advise COMPANY OR UTILITY NAME that the NAME AND ADDRESS OF PROPERTY may present an unacceptable exposure to utility workers or other persons conducting activities at the property. The enclosure to this notice provides a map of the property as well as information on the general nature and extent of contamination and potential unacceptable exposures for such workers.

Prior to conducting any work at this property, COMPANY OR UTILITY NAME workers or contractors should contact plant engineer. Any work done on this property should be done under appropriate health and safety precautions. Additional information regarding the environmental conditions of the property can be obtained upon request.

Sincerely,

NAME AND TELEPHONE NUMBER OF CONTACT PERSON

Enclosure

2000 Centerpoint Parkway, MC 483-520-190 • Pontiac, MI 48341-3147 • FAX (248) 753-5829

Enclosures (1) Map
(2) Summary of environmental quality as it pertains to utility worker.