RECORD OF DECISION

Valeo Former GM - Delco Chassis Facility
State Superfund Project
Rochester, Monroe County
Site No. 828099
March 2012

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - RECORD OF DECISION

Valeo Former GM - Delco Chassis Facility
State Superfund Project
Rochester, Monroe County
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Statement of Purpose and Basis

This document presents the remedy for the Valeo Former GM - Delco Chassis Facility site, a Class 2 inactive hazardous waste disposal site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Valeo Former GM - Delco Chassis Facility site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design
A remedial design program would be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;

- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. LNAPL Recovery with In-situ Bioremediation

Removal of light non-aqueous phase liquids (LNAPL) to the extent practical. LNAPL would be separated from the collected groundwater and disposed of off-site. Groundwater would be treated and discharged to the sanitary sewer. In-situ bioremediation would be implemented as a final step to treat residual soil and groundwater contamination. A groundwater/LNAPL monitoring program would be implemented in the vicinity of the LNAPL impacted areas;

3. Soil Excavation

Excavation and off-site disposal of petroleum contaminated soils within the former fire training area; all on-site soils located within the former fire training area which exceed protection of groundwater use SCOs in 6 NYCRR Part 375-6.8(b) would be excavated and transported off-site for disposal. Approximately 550 cubic yards of soil would be removed. Clean fill would then be brought in to replace the excavated soil and establish the designed grades at the site.

4. Soil Vapor Mitigation

Continued operation and monitoring of the existing on-site sub-slab depressurization system. Any future on-site buildings would be evaluated to determine if a sub-slab depressurization system, or a similar engineered system, to prevent the migration of vapors into the building from soil and/or groundwater is required.

5. Cover System

A site cover currently exists and will be maintained to allow for restricted commercial or industrial use of the site. Any site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted commercial or industrial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

6. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- Requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- Allows the use and development of the controlled property for commercial or industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

- Restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- Requires compliance with the Department approved Site Management Plan.

7. Site Management

A Site Management Plan is required, which includes the following:

a) An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: Impose an environmental easement as described above.

Engineering Controls: Continued operation of the sub-slab depressurization system, continued operation of the LNAPL collection system, and maintain the site cover. This plan includes, but may not be limited to:

- An Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- Descriptions of the provisions of the deed restriction including any land use and groundwater use restrictions;
- A provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- Provisions for the management and inspection of the identified engineering controls;
- Maintaining site access controls and Department notification; and
- The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b) A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- Monitoring of groundwater to assess the performance and effectiveness of the remedy;
- A schedule of monitoring and frequency of submittals to the Department;
- Monitoring for vapor intrusion for any buildings occupied or developed on the site, as may be required by the Institutional and Engineering Control Plan discussed in item 1 above; and
- Monitoring of the sub-slab depressurization system to assess the performance and effectiveness in addressing exposures.

c) An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- Compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- Maintaining site access controls and Department notification; and
- Providing the Department access to the site and O&M records.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

March 28, 2012

Date

Robert W. Schick, P.E., Acting Director
Division of Environmental Remediation

RECORD OF DECISION

Valeo Former GM - Delco Chassis Facility
Rochester, Monroe County
Site No. 828099
March 2012

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of hazardous wastes at this site, as more fully described in this document, has contaminated various environmental media. The remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

Rochester Public Library - Lyell Branch
956 Lyell Avenue
Rochester, NY 14613
Phone: (585)428-8218

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) were presented along with a summary of the proposed remedy.

After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:
The Valeo Site is an approximately one-hundred-fifteen (115) acre parcel located at 1555 Lyell Avenue on the western edge of the city of Rochester.
Site Features:
There is a large building (approximately 1.5 million sq ft.) occupying the central portion of the site. The remaining portions of the site are largely paved parking areas. A small wooded area is located along the south western property line. A railroad line borders the eastern property line and the NYS Barge canal is located at the western edge of the site. The Abandoned Chemical Sales Site (#828105) is located on the opposite side of the railroad line on along the eastern boundary of the site.

Current Zoning/Uses:
The property is currently zoned for manufacturing. The on-site building is subdivided into multiple commercial and industrial businesses. The surrounding land use is commercial and industrial; however the area immediately to the east is a densely populated residential area. The area is served by public water and sewers.

Historic uses:
Historically, the facility manufactured automotive parts from 1951 until 2008. The facility predominantly manufactured electric motors, wiper systems, and window regulator parts. The facility was owned by General Motors Corporation from 1951 to 1994, ITT Automotive Electrical Systems from 1994 to 1998, and Valeo Electrical Systems, Inc. from 1998 to 2005. The Site is currently owned by McGuire Properties and it is subdivided into several businesses. Historical manufacturing operation included metal finishing, stamping operations, heat treating, degreasing, and metal plating operations. In 1994, GM conducted an environmental site assessment of the facility and identified several areas of soil and groundwater contamination. General Motors signed a consent order to complete a remedial investigation/feasibility study in

2002. Valeo ceased operations at the site in June 2008. The facility is currently leased by several industrial and commercial businesses.

Site Geology and Hydrogeology: The site is underlain by 2 to 21 feet of unconsolidated overburden deposits overlying dolomite and dolomitic-mudstone bedrock units of the Upper Silurian Lockport and Clinton Groups. Shallow groundwater is encountered within a few feet of the overburden/bedrock interface. There is an intermediate bedrock flow zone located between 10 and 30 feet below the top of bedrock. Utilities located along the eastern portion of the site influence groundwater flow direction.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the RI to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

General Motors Corporation - Delco Chassis

Motors Liquidation Company (f/k/a General Motors)

The Department and General Motors entered into a Consent Order on July 30, 2002. The Order obligates the responsible parties to implement a full or RI/FS. After the remedy is selected, the Department will approach the PRPs to implement the selected remedy.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminants of concern identified at this site are:

Benzene
trichloroethene (TCE)
toluene
dichloroethene
tetrachloroethene (PCE)
xylene (mixed

polychlorinated biphenyls (PCBs)	polycyclic aromatic hydrocarbons (PAHs)
cadmium	chromium
copper	lead

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

Vapor Mitigation

A sub-slab depressurization system was installed within a portion of the facility in April 2009 to address current indoor air contamination with volatile organic compounds associated with soil vapor intrusion. Performance data indicate that the SSDS is effectively mitigating vapor intrusion.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 01.

Valeo ceased operations at the site in June 2008. Valeo sold the facility in 2005 and ceased operations at the site in June 2008. The facility is currently sub-divided into several businesses. The fieldwork for a Remedial Investigation/Feasibility Study (RI/FS) is complete. An RI/FS report was completed in 2009. A sub-slab mitigation system was installed in a portion of the building in Spring 2009. The system is currently operated by the site owner.

GM performed several studies in the mid-1990s prior to the sale of the property to ITT automotive in 1994. These studies identified several known and potential source areas for further investigation. The remedial investigation (RI) focused on the following known and potential source areas of contamination: 1- Underground Storage Tank (UST) Farm Area; 2 - Crane Bay Scrap Dock Area; 3 - Oil Reclaim Area; 4 – Railcar Scrap Dock Area; 5 – Former Hazardous Waste Storage Area; 6 – Former Land Disposal Area; 7 – Fire Training/Southwest

Property (Fire training, soils pile staging, debris disposal area); and 8 – Drum Storage Area at the on-site wastewater treatment plant (WWTP). These areas are depicted in Figure 2.

The purpose of the RI was to determine the nature and extent of contamination from past activities and to characterize former solid waste management units that were regulated under an interim status permit for corrective action. During the RI conducted by General Motors (GM), Valeo conducted several closure activities as part of the decommissioning of their manufacturing plant. These closure activities included: Cleanup and closure of the trade waste collection and transport system; cleanup and removal of the WWTP; removal and closure of the oil water separator; closure of the melonite (cyanide) heat treating process; closure of the oil reclaim area; removal of oil reclaim vault and contaminated soils; closure of the former drum washing area; cleanup and closure of several large aboveground storage tanks; and cleanup and closure of all electroplating lines. Sampling data generated during these closure activities indicated that no further actions were required.

Groundwater:
The RI identified groundwater contamination in three areas of the site: the UST tank farm area; the former oil reclamation area; and the railcar scrap dock. Light non-aqueous phase liquid (LNAPL) was encountered in all three of these areas. Shallow and intermediate bedrock groundwater wells are impacted by benzene, toluene, ethylbenzene, and xylenes (BTEX). Total BTEX levels range from 100 ppb to 6,463 parts per billion (ppb) and are predominantly located near the former UST tank farm and oil reclamation areas. Additional BTEX contamination in groundwater was identified at the southwest corner of the site near the former fire training area. Total volatile organic compounds (VOCs) in groundwater in this area range from 125 to 338 ppb. Shallow groundwater contamination with ketones and carbon disulfide is present to a very limited extent in the area outside the southeast corner of the manufacturing building. Chlorinated VOCs were detected adjacent to the oil reclamation area in one monitoring well. Sample results indicate concentrations of 1,2-dichloroethene (cis-1,2-DCE) ranging from 60 to 260 ppb, trichloroethene (TCE) ranging from 2 to 30 ppb and vinyl chloride ranging from 2 to 20 ppb. This well is located adjacent to the area where the sub-slab mitigation system was installed in 2009. Elsewhere, chlorinated VOCs were predominantly detected in bedrock interface and intermediate bedrock wells along the eastern edge of the site. Levels of chlorinated VOCs in groundwater within the former UST tank farm area range from non-detect (ND) to 734 ppb within the bedrock interface and shallow bedrock zones. Levels of chlorinated VOCs in the intermediate bedrock zone range from non-detect to 54,940 ppb. Based upon groundwater flow patterns, VOC contaminants in the intermediate bedrock groundwater zone are migrating on-site from the adjacent Abandoned Chemical Sales site (#828105). Groundwater is flowing to the southwest towards a sewer line that proceeds east off-site beneath Jay Street.

Soil:
Soil contamination with VOCs generally occurs within the former UST tank farm area, the oil reclamation area, and railcar scrap dock. The predominant VOC contaminants are toluene, ethylbenzene and xylene. The highest levels of VOCs in soils are within the areas adjacent to and within LNAPL zones. In addition, there are low levels of chlorinated solvents 1,1,1-trichloroethane, trichloroethene (TCE), cis-1,2-DCE, and tetrachloroethene (PCE) in soils. Levels are generally below the SCOs for protection of groundwater; however, there are isolated

areas of chlorinated solvent contamination in soil that exceed the 6NYCRR Soil Cleanup Objectives (SCOs) for protection of groundwater. The highest concentrations of chlorinated solvents were located adjacent to the oil reclamation area. This is the area beneath the building where the sub-slab depressurization system was installed. The highest concentrations of chlorinated VOCs in soil samples in the center of this area were cis-1,2-DCE at 5.1 parts per million (ppm) and TCE at 0.02 ppm. VOC contamination in soil was also identified near the former fire training area at the southwest corner of the site. Groundwater protection SCOs are exceeded for ethyl benzene and xylene and the restricted commercial use SCOs are exceeded for polychlorinated biphenyls (PCBs) at 4.7 ppm. The monitoring well immediately downgradient (MW-307-1) of these soils has been impacted by VOC contamination. It is estimated that 300 cubic yards of soil have been impacted above the groundwater protection SCOs.

Soil contamination with polyaromatic hydrocarbons (PAHs) is widespread due to the presence of cinder and ash fill throughout the site. Levels of PAHs are significantly higher in soils within and adjacent to the areas of LNAPL contamination. Additionally, higher levels of PAHs were encountered in one sample taken along the former trade-waste sewer lines and one sample within the melonite heat treating area. The depth of these samples was 3-4 feet below the floor level of the building slab.

PCB contamination is limited to areas where LNAPL was encountered (UST tank farm, oil reclamation area, railcar scrap dock) and the fire training area in the southwest corner of the property.

Metals contamination is found predominantly below the building slab near the former electroplating areas and within the land disposal area located adjacent to the southwest portion of the building. The predominant metals are cadmium, copper, chromium, lead, nickel and zinc. These metals are associated with the former electroplating processes that operated at the facility. Restricted commercial use SCOs are exceeded for barium, copper, cadmium, chromium, and lead.

LNAPL:
The three areas of LNAPL vary in extent. The largest area is located near the oil reclamation area and is approximately 22,500 square feet and up to 1 foot in thickness. The chemical nature of the LNAPL is similar to the soil and groundwater contaminants detected at the site. PCBs have been detected at levels as high as 75 ppm. The primary VOC in the LNAPL is xylene at 0.6% with ethylbenzene ranging from ND to160 ppm, and toluene ranging from ND to 220 ppm. Also the following semi-volatile organic compounds were detected: 2-methylnaphthalene ranging from ND to 760 ppm, naphthalene ranging from ND to 400 ppm, and several PAHs.

Soil Vapor:
Soil vapor beneath a 150 by 200 foot area of the manufacturing building is contaminated with chlorinated VOCs, particularly (TCE) and its breakdown products cis-1,2-DCE and vinyl chloride. The affected area is located on the north side of the wall between the A and B sections of the manufacturing building, centered between building columns R16 and R19. The highest soil vapor concentrations occur in the center of the affected area. The central area is approximately 60 feet across. Sub-slab soil vapor sample results show that TCE was detected at

concentrations ranging from 13,500 to 330,000 micrograms per cubic meter (ug/m3) and cis-1,2-DCE was detected at concentrations up to 5,000,000 ug/m3. Indoor air samples collected during the soil vapor intrusion assessment did not contain DCE, TCE, or vinyl chloride. A sub-slab depressurization system was installed within this area in 2009, and it is currently operating in an effective manner to prevent exposures within the building.

Special Resources Impacted/Threatened:
A Fish and Wildlife Impact Analysis was performed as part of the remedial investigation. The analysis considered habitat quality, lack of unique habitat, rare, threatened, or endangered species, and the presence of an abundant local population of groundhogs. The results of the analysis did not indicate significant adverse impacts to terrestrial or aquatic wildlife.

Significant Threat:
The site presents a significant environmental threat due to uncontrolled releases of contaminants from the LNAPL source area into the groundwater.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

People are not drinking site-related contaminants in the groundwater since the area is served by a public water supply not affected by this contamination. Persons who dig below the ground surface may come into contact with contaminants in subsurface soil and groundwater. Volatile organic compounds in the soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Sampling identified impacts to indoor air quality in the on-site building; however, a sub-slab depressurization system (a system that ventilates/removes air beneath the building) has been installed at this building to prevent the inhalation of site-related contamination. The potential for soil vapor intrusion off-site, related to this site, is not a concern.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the feasibility study (FS) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's remedy is set forth at Exhibit D.

The selected remedy is referred to as the remedy.

The estimated present worth cost to implement the remedy is $3,850,000. The cost to construct the remedy is estimated to be $2,500,000 and the estimated average annual cost is $33,000.

The elements of the selected remedy are as follows:

1. Remedial Design
A remedial design program would be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. LNAPL Recovery with In-situ Bioremediation
Removal of light non-aqueous phase liquids (LNAPL) to the extent practical. LNAPL would be separated from the collected groundwater and disposed of off-site. Groundwater would be treated and discharged to the sanitary sewer. In-situ bioremediation would be implemented as a final step to treat residual soil and groundwater contamination. A groundwater/LNAPL monitoring program would be implemented in the vicinity of the LNAPL impacted areas;

3. Soil Excavation
Excavation and off-site disposal of petroleum contaminated soils within the former fire training area; all on-site soils located within the former fire training area which exceed protection of groundwater use SCOs in 6 NYCRR Part 375-6.8(b) would be excavated and transported off-site for disposal. Approximately 550 cubic yards of soil would be removed. Clean fill would then be brought in to replace the excavated soil and establish the designed grades at the site.

4. Soil Vapor Mitigation
Continued operation and monitoring of the existing on-site sub-slab depressurization system. Any future on-site buildings would be evaluated to determine if a sub-slab depressurization system, or a similar engineered system, to prevent the migration of vapors into the building from soil and/or groundwater is required.

5. Cover System

A site cover currently exists and will be maintained to allow for restricted commercial or industrial use of the site. Any site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted commercial or industrial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

6. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- Requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- Allows the use and development of the controlled property for commercial or industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- Requires compliance with the Department approved Site Management Plan.

7. Site Management

A Site Management Plan is required, which includes the following:

d) An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: Impose an environmental easement as described above.

Engineering Controls: Continued operation of the sub-slab depressurization system, continued operation of the LNAPL collection system, and maintain the site cover. This plan includes, but may not be limited to:

- An Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- Descriptions of the provisions of the deed restriction including any land use and groundwater use restrictions;
- A provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;

- Provisions for the management and inspection of the identified engineering controls;
- Maintaining site access controls and Department notification; and
- The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

e) A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- Monitoring of groundwater to assess the performance and effectiveness of the remedy;
- A schedule of monitoring and frequency of submittals to the Department;
- Monitoring for vapor intrusion for any buildings occupied or developed on the site, as may be required by the Institutional and Engineering Control Plan discussed in item 1 above; and
- Monitoring of the sub-slab depressurization system to assess the performance and effectiveness in addressing exposures.

f) An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- Compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- Maintaining site access controls and Department notification; and
- Providing the Department access to the site and O&M records.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1.2, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories; volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals. For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 6.1.1 are also presented.

Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site and are impacting both groundwater and soil.

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375 (au). Source areas are areas of concern at a site were substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Wastes and Source areas were identified at the site include, three areas of light non-aqueous phase liquid (LNAPL). These areas of LNAPL vary in extent and are depicted in Figures 2 and 3. The largest area is located near the oil reclamation area and is approximately 22,500 square feet and up to 1 foot in thickness. The chemical nature of the LNAPL is similar to the soil and groundwater contaminants detected at the site. PCBs have been detected at levels as high as 75 parts per million (ppm). The primary VOC in the LNAPL is xylene at 0.6% with ethylbenzene ranging from ND to160 ppm, and toluene ranging from ND to 220 ppm. Also the following semi-volatile organic compounds were detected: 2-methylnaphthalene ranging from ND to 760 ppm, naphthalene ranging from ND to 400 ppm, and several PAHs. These areas do not appear to be migrating but act as a continual source of dissolved contaminants to on-site groundwater. The waste/source areas identified will be addressed in the remedy selection process.

Groundwater

Groundwater samples were collected from a network of approximately 70 monitoring wells located throughout the site. These wells monitored the following separate depth zones on-site: overburden/shallow bedrock; intermediate bedrock; and deep bedrock. In addition, a groundwater seep into the barge canal was sampled. The sample results in the overburden and shallow bedrock zone identified on-site contamination with VOCs. These sample results are depicted on Figures 4-7. The VOC contamination consisted primarily of BTEX compounds associated with areas of LNAPL on site. Total BTEX levels range from 100 ppb to 6,463 parts per billion (ppb) and are predominantly located near the former UST tank farm (AOR 1) and oil reclamation (AOR 3) areas. Additional BTEX contamination in groundwater was identified at the southwest corner of the site (AOR 7) near the former fire training area. Total VOCs in groundwater in the former fire training area range from 125 to 338 ppb. In AOR 4, shallow groundwater contamination with methyl isobutyl ketone and carbon disulfide is present to a very limited extent in the area outside the railcar scrap dock area. SCGs were not exceeded for these compounds. Lower levels

of chlorinated VOCs (cVOCs) in AOR 4 were also detected in shallow wells ranging from ND to 734 ppb total cVOCs. Sample results from one well beneath the building indicate concentrations of 1,2-dichloroethene ranging from 60 to 260 ppb, trichloroethene (TCE) ranging from 2 to 30 ppb and vinyl chloride ranging from 2 to 20 ppb. This well is located adjacent to the area where the sub-slab mitigation system was installed in 2009. Exterior wells show higher concentration of cVOCs.

The sample results from the intermediate bedrock wells predominantly showed contamination with VOCs above the SCGs with both BTEX and chlorinated VOCs; however, chlorinated VOCs were detected at concentrations at least two orders of magnitude higher. Figure 5 is a logarithmic bar chart that clearly depicts this trend. Based upon groundwater flow patterns in the intermediate bedrock zone, it appears the cVOC contamination is migrating on-site from the adjacent Abandoned Chemical Sales site (#828105).

Sample results for the deep bedrock wells show exceedences of SCGs for both BTEX and cVOCs. The BTEX contamination in deep bedrock appears to be coming from an off-site source or is possibly naturally occurring in the Rochester Shale bedrock. The cVOCs in deep bedrock are located in the southeast corner of the site in well DB-309-2 (See Figure 7). This well is downgradient of the Abandoned Chemical Sales site.

Sample results from the groundwater seep into the barge canal did not indicate any site-related contaminants. The approximate sample location is depicted on Figure 3.

Table 1 – Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
Volatile Organic Compounds (VOCs)			
1,1,1-Trichloroethane	ND – 2,700	5	6 of 210
1,1-dichloroethane	ND – 3,600	5	48 of 210
1,1-dichloroethene	ND – 700	5	8 of 210
Benzene	ND – 710	1	26 of 210
Cis-1,2-dichloroethene	ND – 46,000	5	51 of 210
Ethylbenzene	ND – 3,200	5	17 of 210
Tetrachloroethene	ND – 80	5	1 of 210
Toluene	ND – 2,200	5	20 of 210
Trans-1,2-dichloroethene	ND – 120	5	6 of 210
Trichlorethene	ND – 5,200	5	11 of 210
Vinyl chloride	ND - 3,000	2	44 of 210
Xylenes (total)	ND – 3,200	5	32 of 210
Metals			

Table 1 – Groundwater			
Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
Cadmium	ND - 20	5	7 of 210
Lead	ND - 52	25	3 of 210

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

The primary contaminants of concern in groundwater are benzene, toluene, ethylbenzene, and total xylenes from the former underground tank storage area, oil reclamation area, and the railcar scrap dock area. The cVOCs, trichloroethene, cis-1,2-dichloroethene, and vinyl chloride are present to a lesser degree from past degreasing operations that were in operation at the facility. A distinct source of cVOCs could not be identified on-site; however, there may be sporadic areas of soil contamination causing the dissolved cVOCs in shallow groundwater. The bulk of the cVOCs detected on-site appear to be migrating on-site from the adjacent Abandoned Chemical Sales site. The cVOCs in the intermediate bedrock and deep bedrock zones will not be addressed by the remedy selection process.

The inorganic compounds found in overburden and shallow bedrock groundwater were limited to the areas of LNAPL contamination, are not migrating off-site, and of relatively low magnitude. Since removal of the LNAPL as a source will drive the remedial action, any inorganic contaminants will be removed with the LNAPL. Therefore, lead and cadmium found in groundwater were not considered site-specific contaminants of concern in groundwater.

Based on the findings of the RI, the past disposal of hazardous waste has resulted in the contamination of groundwater. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are: benzene, ethylbenzene, toluene, total xylenes, trichloroethene, cis-1,2-DCE, and vinyl chloride.

Soil

Over 350 soil samples were collected at the site during the RI. Surface soils only exist at the southwest corner and the former land disposal areas (see Figure 2). Overburden thickness varies across the site from less than one foot (areas beneath the building) up to eleven feet thick. Ash and cinder fill was noted extensively across the site from thicknesses of a few inches to four feet thick.

Soil contamination with polyaromatic hydrocarbons (PAHs) is widespread due to the presence of cinder and ash fill layer. Commercial SCOs for PAHs are exceeded in all study areas investigated during the RI. Levels of PAHs are significantly higher in soils within and adjacent to the areas of LNAPL contamination. Additionally, higher levels of PAHs were encountered in one sample taken along the former trade-waste sewer lines and one sample within the melonite (cyanide salt) heat treating area. The depth of these samples was 3 to 4 feet below the floor level of the building slab. VOC contamination in soil exceeds the groundwater protection SCOs in the LNAPL areas and the former fire training area (AOC #7) in the southwestern property corner. Metals contamination is found predominantly below the building slab near the former electroplating areas and within the land disposal area located adjacent to the southwest portion of the building. Commercial SCOs are exceeded for barium, copper, cadmium, chromium, and lead. PCB contamination in soil exceeds the commercial SCOs in limited to areas of the site. SCOs are exceeded in areas where LNAPL was encountered (UST tank farm, oil reclamation area, railcar scrap dock) and the fire training area in the southwest corner of the property.

Table 2- Soils							
Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCB[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Commercial SCG[c] (ppm)	Frequency Exceeding Restricted Commercial SCG	Protection of Groundwater SCG[d] (ppm)	Frequency Exceeding Protection of Groundwater SCG
Volatile Organic Compounds (VOCs)							
Acetone	ND – 0.57	0.05	10 of 358	500	0 of 358	0.05	10 of 358
Benzene	ND – 0.8	0.06	2 of 358	44	0 of 358	0.06	2 of 358
Ethylbenzene	ND – 9,100	1	38 of 358	390	4 of 358	1	38 of 358
Toluene	ND – 100	0.7	7 of 358	500	0 of 358	0.7	7 of 358
Total Xylenes	ND – 36,000	0.26	53 of 358	500	30 of 358	1.6	51 of 358
1,1,1-Trichloroethane	ND – 5.2	0.68	3 of 358	500	0 of 358	0.68	3 of 358
Cis-1,2-dichloroethene	ND – 5.1	0.25	2 of 358	500	0 of 358	0.25	2 of 358
Semivolatile Organic Compounds (SVOCs)							
Benzo(a)anthracene	ND – 55	1	83 of 216	5.6	31 of 216	1	83 of 216
Benzo(a)pyrene	ND – 93	1	92 of 216	1	92 of 216	22	7 of 216
Benzo(b)fluoranthene	ND – 130	1	99 of 216	5.6	52 of 216	1.7	95 of 216
Benzo(k)fluoranthene	ND – 87	0.8	84 of 216	56	1 of 216	1	84 of 216
Chrysene	ND – 73	1	96 of 216	56	1 of 216	1	96 of 216
Dibenzo(a,h)anthracene	ND – 21	0.33	62 of 216	0.56	50 of 216	1000	0 of 216
Indeno(1,2,3-cd)pyrene	ND – 54	0.5	91 of 216	5.6	27 of 216	8.2	15 of 216
Naphthlalene	ND – 32	12	1 of 216	500	0 of 216	12	1 of 216
Metals							
Arsenic	ND – 15.5	13	2 of 214	16	0 of 214	16	0 of 214
Barium	ND – 30,000	350	9 of 214	4,000	3 of 214	820	5 of 214
Cadmium	ND – 48.1	2.5	9 of 214	9.3	4 of 214	7.5	5 of 214
Chromium +3	ND – 686	30	19 of 214	1,500	2 of 214	NS*	--
Chromium +6		1	25 of 214	400	3 of 214	19	1 of 214
Copper	ND – 3,570	50	16 of 214	270	11 of 214	1720	1 of 214
Lead	ND – 5200	63	16 of 214	1,000	7 of 214	450	8 of 214

Table 2- Soils							
Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCB[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Commercial SCG[c] (ppm)	Frequency Exceeding Restricted Commercial SCG	Protection of Groundwater SCG[d] (ppm)	Frequency Exceeding Protection of Groundwater SCG
Mercury	ND – 1.99	0.18	6 of 214	2.8	0 of 214	0.73	1 of 214
Nickel	ND – 110	30	6 of 214	310	0 of 214	130	0 of 214
Silver	ND – 10.5	2	8 of 214	1,500	0 of 214	8.3	3 of 214
Zinc	ND – 1440	109	8 of 214	10,000	0 of 214	2,480	0 of 214
Polychlorinated Biphenyls (PCBs)							
Total PCBs	ND – 8.5	0.1	6 of 144	1	6 of 144	3.2	2 of 144

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for {Insert Allowable Use} Use, unless otherwise noted.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.
*No Standard

The primary contaminants of concern in soil are ethylbenzene, xylenes, toluene and PAHs. Referring to Figure 3**,** the areas where LNAPL are located contain the highest amounts of VOCs and PAHs in soils. Chlorinated VOCs in soils exceed the commercial cleanup levels beneath the building slab in the vicinity of the former oil reclamation area. PCBs are present above the commercial cleanup values in the former fire training area. Metals concentrations in soils exceed the commercial cleanup levels beneath the building slab and within the former land disposal area. PAH contamination in soils exceeds the commercial cleanup values throughout the site. The PAH levels in the LNAPL tend to be 2 orders of magnitude higher than the remaining site-wide soils. Site-wide PAHs are attributed to the cinder and ash fill that is spread throughout the site.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are, toluene, ethylbenzene, total xylenes, cis-1,2-dichloroethene, 1,1,1-trichloroethane, barium, copper, cadmium, chromium, and lead. PAHs, and PCBs.

Soil Vapor

The evaluation of the potential for soil vapor intrusion resulting from the presence of site related soil or groundwater contamination was evaluated by the sampling of sub-slab soil vapor under structures. Due to the presence of buildings in the impacted area a full suite of samples were collected to evaluate whether soil vapor intrusion was occurring.

Sub-slab soil vapor samples were collected from several areas within the on-site building. The results identified one area within the facility with elevated levels of TCE, cis-1,2-DCE, and vinyl chloride beneath the building slab. Based upon these data, GM installed a sub-slab depressurization system in April 2009. The affected area of the mitigation system is depicted in Figures 2 and 3. A detailed layout of the SSDS is depicted in Figure 8.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves the site in its present condition and does not provide any additional protection to public health and the environment.

Alternative 2: Continued Operation of the Sub-Slab Depressurization System with Site Management

This alternative recognizes the cleanup activities associated with closure of the manufacturing plant and closure of solid waste management units. This alternative requires continued operation of the sub-slab depressurization system (SSDS), maintenance of existing fencing, development of a site management plan, long-term groundwater monitoring, annual certifications, and maintaining the existing deed restriction.

Present Worth: *$702,000*
Capital Cost: *$118,000*
Annual Costs: *$38,000*

Alternative #3: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include: demolition of all on-site buildings, relocation of several light industrial businesses, removal of all LNAPL, excavation and off-site disposal 95,000 cubic yards of soil above the unrestricted cleanup objectives. The remedy will not rely on institutional or engineering controls to prevent future exposure. There is no Site Management, no restrictions, and no periodic review.

Capital Cost: *$18,225,000*

Alternative #4: LNAPL collection with in-situ bioremediation and Site Management

This alternative would include installation of extraction wells to collect and removal LNAPL from the ground to the extent feasible. In order to enhance LNAPL collection, the water table may be depressed through vacuum enhancement or other technologies. For cost purposes it is assumed that the LNAPL recover system operates for a period of 5 years. In-situ bioremediation would be used as a polishing step to further remediate overburden and bedrock groundwater. Bioremediation utilizes microbes to clean up harmful chemicals in the environment, such as those found in gasoline and petroleum releases. When microbes completely digest these chemicals under the optimum temperature, nutrients and oxygen, the contaminants are changed into water and harmless gases such as

carbon dioxide. The goal of this remedial alternative is to remove a continuing source of groundwater contamination and to achieve the groundwater protection SCOs in soil. This alternative includes the remedial actions described in Alternateve #2.

Present Worth: *$3,840,000*
Capital Cost: *$2,406,000*
Annual Costs (First 5 years): *$196,000*
Annual Costs (Year 5 - 30): *$38,000*

Alternative #5 LNAPL collection with in-situ bioremediation, soil excavation, and site management

This alternative includes all of the elements of Alternative #4 with the addition of soil excavation and off-site disposal of soils in the former fire training area. These soils are a localized source of groundwater contamination Approximately 550 cubic yards of soil will be removed. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. This alternative includes the remedial actions described in Alternative #2.

Present Worth: *$3,850,000*
Capital Cost: *$2,500,000*
Annual Costs (First 5 years): *$196,000*
Annual Costs (Year 5 - 30): *$33,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
#1 - No Action	0	0	0
#2 - Continued Operation of SSDS and Site Management	$118,000	$38,000	$702,000
#3 - Restoration to Pre-Disposal or Unrestricted Conditions	$18,225,000	0	$18,225,000
#4 - LNAPL collection with in-situ bioremediation and Site Management	$2,406,000	$38,000	$3,840,000
#5 - LNAPL collection with in-situ bioremediation, soil excavation, and site management	$2,500,000	$33,000	$3,850,000

Exhibit D

SUMMARY OF THE SELECTED REMEDY

The Department is selecting Alternative #5, LNAPL Collection with in-situ bioremediation, soil excavation, and site management as the remedy for this site. Alternative #5 would achieve the remediation goals for the site by reducing or eliminated the source of soil and groundwater contamination. The elements of this remedy are described in Section 7.

Basis for Selection

Alternative 5 has been selected because, as described below, it satisfies the threshold criteria and provides the best balance of the balancing criterion described in Exhibit C. It will achieve the remediation goals for the site by removing the LNAPL sources. By doing this, alternative 4 addresses the source of the groundwater contamination, which is the most significant threat to public health and the environment, and it creates the conditions necessary to restore groundwater quality to the extent practicable. While it may not be possible to return the site to predisposal conditions, this alternative is as effective as restoration to pre-disposal conditions as any of the alternatives.

The selected remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The selected remedy (Alternative 5 LNAPL Collection with in-situ bioremediation, soil excavation, and site management) would satisfy this criterion by addressing the source of groundwater and soil contamination. Alternative 4 does not completely address removal of the source of groundwater contamination, but addresses groundwater contamination through site management and monitoring. Alternative 1 (no action) does not provide any additional protection to public health and the environment and will not be evaluated further. Alternative 3 (Restoration to Pre-Disposal or Unrestricted Conditions) by removing all soil contaminated above the unrestricted soil cleanup objective meets the threshold criteria. Alternative 2 (Continued Operation of SSDS and Site Management), does not completely comply with this criteria. This alternative addresses significant source areas through site management and monitoring.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternative 5 complies with SCGs to the extent practicable, given the current development of the site. It addresses source areas of contamination and complies with the restricted use soil cleanup objectives at the surface through site

management. It also creates the conditions necessary to restore groundwater quality to the extent practicable. Alternative 3 complies with SCGs and restores the site to pre-release conditions. This alternative will best achieve this criteria, but it would require complete demolition of the entire facility. Alternatives 2 and 4 also comply with this criterion but to a lesser degree or with lower certainty. Because Alternatives 2, 3, 4, and 5 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is best accomplished by those alternatives involving excavation of the contaminated overburden soils. Since the source areas of contamination are in the overburden, implementation of Alternative 3 results in removal of almost all of the chemical contamination at the site, and it removes the need for property use restrictions and long-term monitoring; however, it causes a burden to the property owner and tenants as well as not supporting sustainability by demolishing a useable structure.. Alternatives 4 and 5 both remove source areas of contamination and it is anticipated that the amount of active site management would decrease as these source areas are remediated. For Alternative 2, site management remains effective, but it will not be desirable in the long term because lingering sources of contamination will remain on-site.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 2 controls potential exposures with institutional controls only and will not reduce the toxicity, mobility or volume of contaminants remaining. Alternative 3 restores the site to prerelease conditions, and reduces the toxicity, mobility and volume of on-site waste by transferring the material to an approved off-site location. However, depending on the disposal facility, the volume of the material would not be reduced. Alternatives 4 and 5 reduce the source areas which reduces the toxicity and mobility of contaminants. The volume of contaminants would be reduced by the removal of soil and LNAPL as well as in-situ bioremediation.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 2, 4, and 5 all have short-term impacts that can easily be controlled; however, Alternative 2 would have the smallest impact because there would be no further construction of remedial systems on-site. The time needed to achieve the remediation goals is the shortest for Alternative 2. Alternative 3 would have the most significant short term impacts due to demolition of the main building. This alternative would result in excessive truck traffic, noise, produces a large carbon footprint from fuel consumption, and relocation of all the on-site businesses. Alternatives 4 and 5 take the longest to achieve the remediation goals but with significantly fewer short-term impacts

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to

monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternative 2 would be the easiest remedy to implement because there is already a deed restriction in place and it would only require development of a site management plan. Alternative 3 would be the least implementable, and would significantly disrupt commerce in the local area due to forced relocation of several businesses. Alternatives 4 and 5 are implementable and would cause some disruption to on-site businesses due to construction activities.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

Alternative 2 has the lowest cost but it only addresses the sources of contamination through site management. The cost of Alternative 3 is prohibitive due to the extensive quantities of soils to be excavated and demolition of an active commercial/industrial facility. The costs associated with Alternatives 4 and 5 are nearly the same. The extra capital costs in Alternative 5 are nearly offset by the reduced annual expenses in Alternative 5.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

Since the anticipated use of the site is commercial, Alternative 2 would be the least desirable because the source areas of contamination would remain which would require more environmental requirements for site development. Alternative 3 would eliminate any development restrictions but at the cost of relocating several businesses and rendering the property useless during site cleanup operations. Alternative 4 and 5 address source areas of contamination and allow areas of residual contamination to be addressed through site management. As the source areas are remediated, site management requirements would most likely decrease over time.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

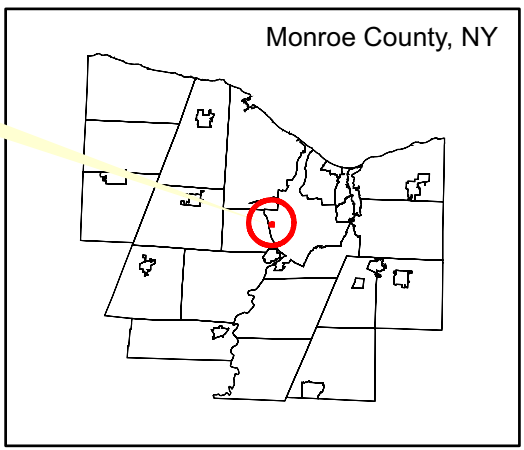
9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary has been prepared that describes public comments received and the manner in which the Department will address the concerns raised.

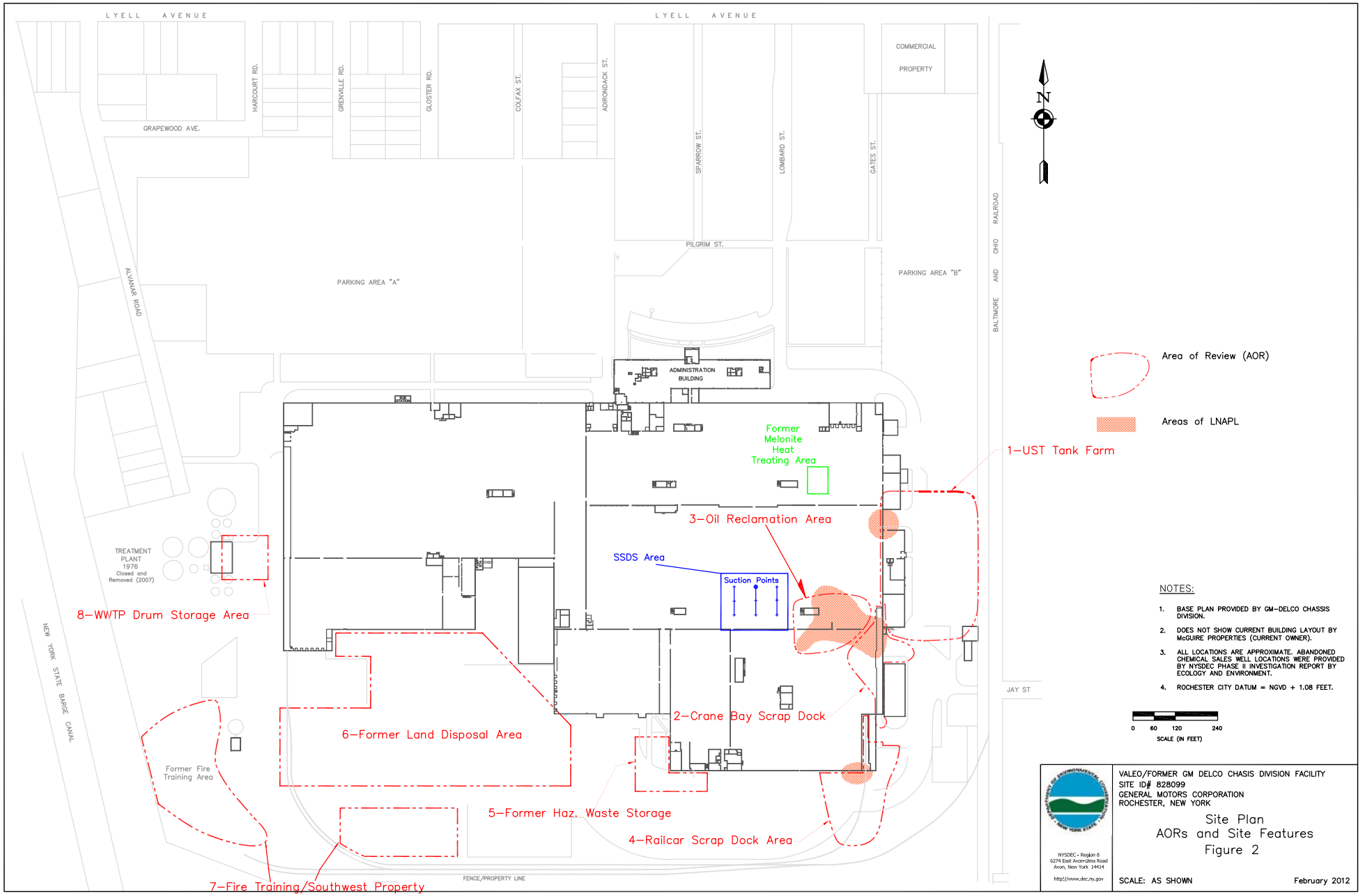
Alternative #5 is being selected because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

Figure 1
Valeo Site Location Map
Site #828099

2005 Monroe County Orthoimagery

0 250 500 1,000 1,500 Feet




LYELL AVENUE
LYELL AVENUE
COMMERCIAL PROPERTY
HARCOURT RD.
GRENVILLE RD.
GLOSTER RD.
COLFAX ST.
ADIRONDACK ST.
SPARROW ST.
LOMBARD ST.
GATES ST.
GRAPEWOOD AVE.
PILGRIM ST.
PARKING AREA "A"
PARKING AREA "B"
ALVANAR ROAD
BALTIMORE AND OHIO RAILROAD
ADMINISTRATION BUILDING
Former Melonite Heat Treating Area
1–UST Tank Farm
3–Oil Reclamation Area
SSDS Area
Suction Points
TREATMENT PLANT 1976 Closed and Removed (2007)
8–WWTP Drum Storage Area
NEW YORK STATE BARGE CANAL
Former Fire Training Area
6–Former Land Disposal Area
2–Crane Bay Scrap Dock
JAY ST
5–Former Haz. Waste Storage
4–Railcar Scrap Dock Area
7–Fire Training/Southwest Property
FENCE/PROPERTY LINE
N
Area of Review (AOR)
Areas of LNAPL
NOTES:
1. BASE PLAN PROVIDED BY GM–DELCO CHASSIS DIVISION.
2. DOES NOT SHOW CURRENT BUILDING LAYOUT BY McGUIRE PROPERTIES (CURRENT OWNER).
3. ALL LOCATIONS ARE APPROXIMATE. ABANDONED CHEMICAL SALES WELL LOCATIONS WERE PROVIDED BY NYSDEC PHASE II INVESTIGATION REPORT BY ECOLOGY AND ENVIRONMENT.
4. ROCHESTER CITY DATUM = NGVD + 1.08 FEET.
0 60 120 240
SCALE (IN FEET)
NYSDEC - Region 8
6274 East Avon-Lima Road
Avon, New York 14414
http://www.dec.ny.gov
VALEO/FORMER GM DELCO CHASIS DIVISION FACILITY
SITE ID# 828099
GENERAL MOTORS CORPORATION
ROCHESTER, NEW YORK
Site Plan
AORs and Site Features
Figure 2
SCALE: AS SHOWN
February 2012

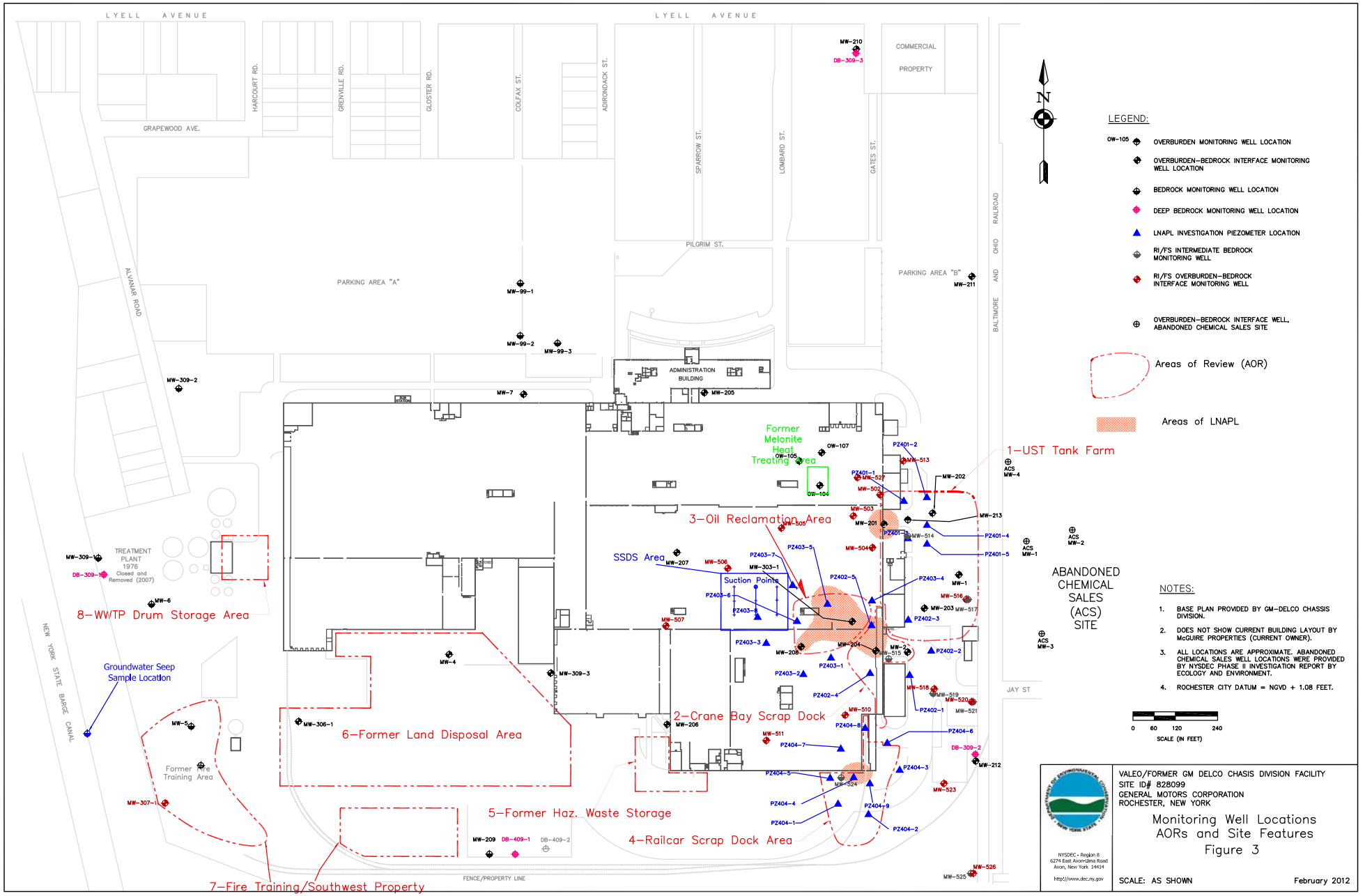
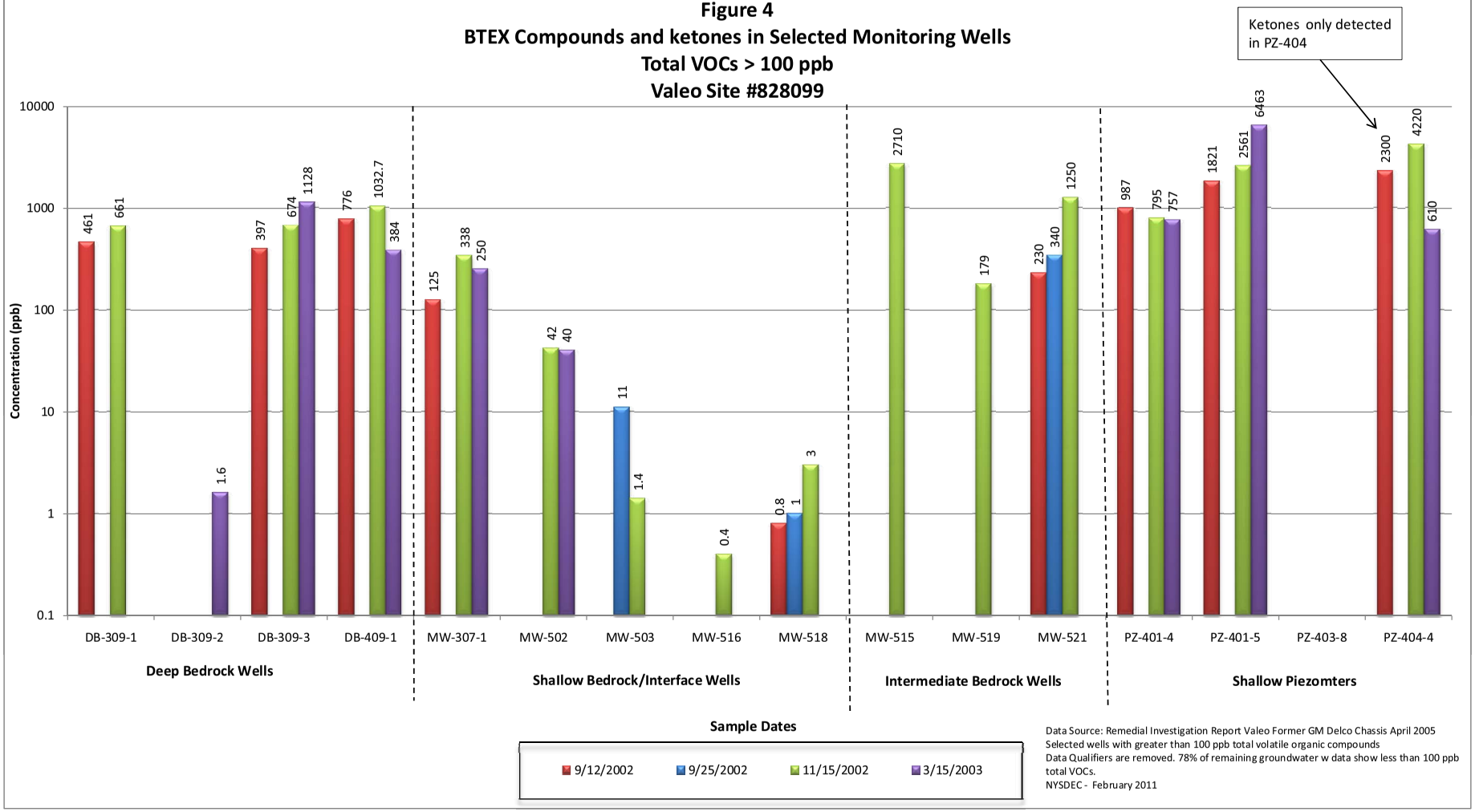
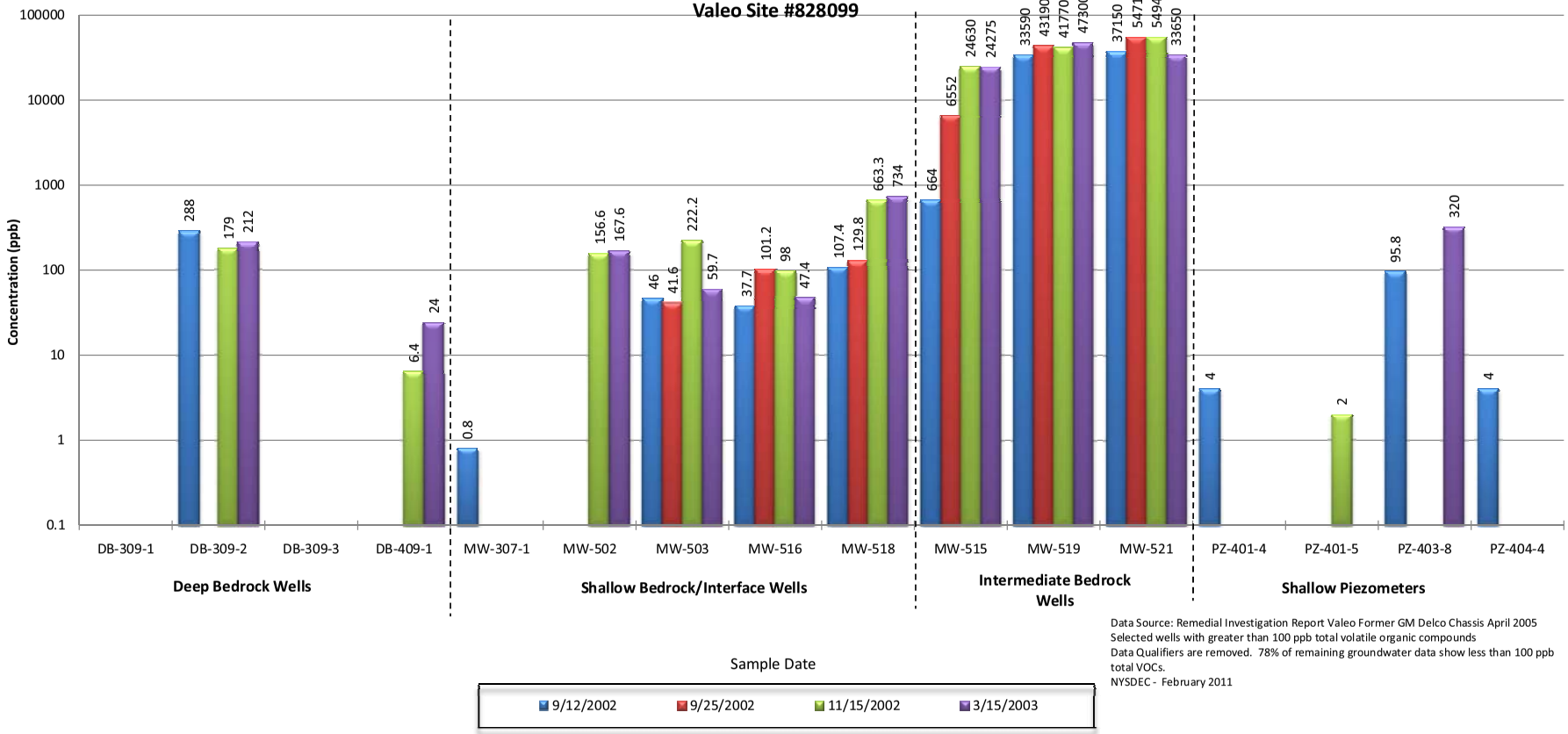

LYELL AVENUE
LYELL AVENUE
GRAPEWOOD AVE.
HARCOURT RD.
GRENVILLE RD.
GLOSTER RD.
COLFAX ST.
ADIRONDACK ST.
SPARROW ST.
LOMBARD ST.
GATES ST.
PILGRIM ST.
ALVANAR ROAD
BALTIMORE AND OHIO RAILROAD
JAY ST
COMMERCIAL PROPERTY
PARKING AREA "A"
PARKING AREA "B"
ADMINISTRATION BUILDING
TREATMENT PLANT 1976 Closed and Removed (2007)
NEW YORK STATE BARGE CANAL
FENCE/PROPERTY LINE
Former Melonite Heat Treating Area
3–Oil Reclamation Area
SSDS Area
Suction Points
1–UST Tank Farm
ABANDONED CHEMICAL SALES (ACS) SITE
8–WW/TP Drum Storage Area
Groundwater Seep Sample Location
6–Former Land Disposal Area
2–Crane Bay Scrap Dock
5–Former Haz. Waste Storage
4–Railcar Scrap Dock Area
7–Fire Training/Southwest Property
Former Fire Training Area
N
LEGEND:
OW-105 OVERBURDEN MONITORING WELL LOCATION
OVERBURDEN–BEDROCK INTERFACE MONITORING WELL LOCATION
BEDROCK MONITORING WELL LOCATION
DEEP BEDROCK MONITORING WELL LOCATION
LNAPL INVESTIGATION PIEZOMETER LOCATION
RI/FS INTERMEDIATE BEDROCK MONITORING WELL
RI/FS OVERBURDEN–BEDROCK INTERFACE MONITORING WELL
OVERBURDEN–BEDROCK INTERFACE WELL, ABANDONED CHEMICAL SALES SITE
Areas of Review (AOR)
Areas of LNAPL
NOTES:
1. BASE PLAN PROVIDED BY GM–DELCO CHASSIS DIVISION.
2. DOES NOT SHOW CURRENT BUILDING LAYOUT BY McGUIRE PROPERTIES (CURRENT OWNER).
3. ALL LOCATIONS ARE APPROXIMATE. ABANDONED CHEMICAL SALES WELL LOCATIONS WERE PROVIDED BY NYSDEC PHASE II INVESTIGATION REPORT BY ECOLOGY AND ENVIRONMENT.
4. ROCHESTER CITY DATUM = NGVD + 1.08 FEET.
0 60 120 240
SCALE (IN FEET)
NYSDEC - Region 8
6274 East Avon-Lima Road
Avon, New York 14414
http://www.dec.ny.gov
VALEO/FORMER GM DELCO CHASIS DIVISION FACILITY
SITE ID# 828099
GENERAL MOTORS CORPORATION
ROCHESTER, NEW YORK
Monitoring Well Locations
AORs and Site Features
Figure 3
SCALE: AS SHOWN
February 2012

Figure 4
BTEX Compounds and ketones in Selected Monitoring Wells
Total VOCs > 100 ppb
Valeo Site #828099

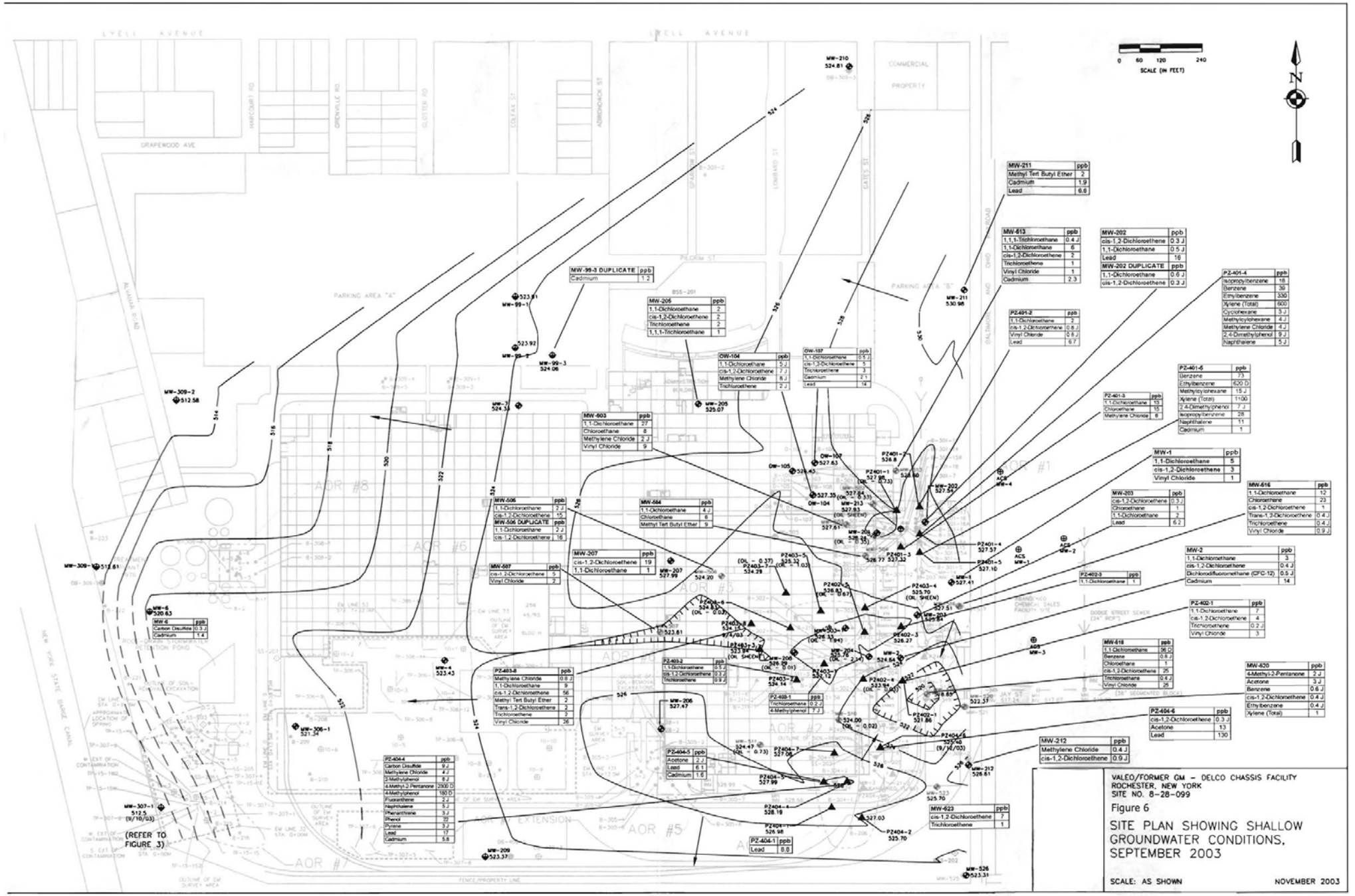


Data Source: Remedial Investigation Report Valeo Former GM Delco Chassis April 2005
Selected wells with greater than 100 ppb total volatile organic compounds
Data Qualifiers are removed. 78% of remaining groundwater w data show less than 100 ppb total VOCs.
NYSDEC - February 2011

Figure 5
Chlorinated VOCs in Selected Monitoring Wells
Total VOCs > 100 ppb
Valeo Site #828099



Data Source: Remedial Investigation Report Valeo Former GM Delco Chassis April 2005
Selected wells with greater than 100 ppb total volatile organic compounds
Data Qualifiers are removed. 78% of remaining groundwater data show less than 100 ppb total VOCs.
NYSDEC - February 2011



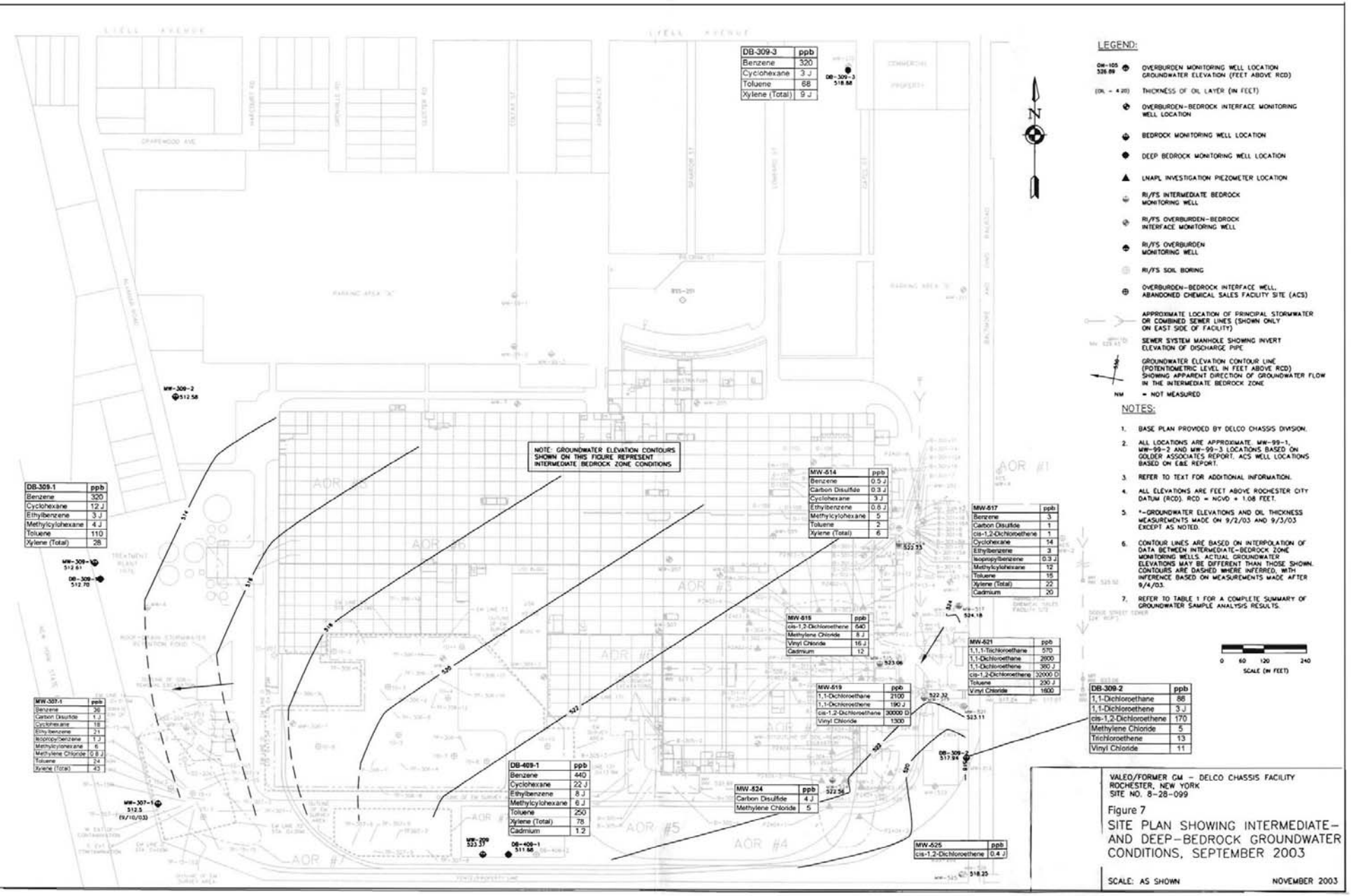
VALEO/FORMER GM – DELCO CHASSIS FACILITY
ROCHESTER, NEW YORK
SITE NO. 8-28-099

Figure 6

SITE PLAN SHOWING SHALLOW GROUNDWATER CONDITIONS, SEPTEMBER 2003

SCALE: AS SHOWN

NOVEMBER 2003



DB-309-1	ppb
Benzene	320
Cyclohexane	12 J
Ethylbenzene	3 J
Methylcyclohexane	4 J
Toluene	110
Xylene (Total)	28

MW-307-1	ppb
Benzene	36
Carbon Disulfide	1 J
Cyclohexane	18
Ethylbenzene	21
Isopropylbenzene	1 J
Methylcyclohexane	6
Methylene Chloride	0.8 J
Toluene	24
Xylene (Total)	43

DB-409-1	ppb
Benzene	440
Cyclohexane	22 J
Ethylbenzene	8 J
Methylcyclohexane	6 J
Toluene	250
Xylene (Total)	78
Cadmium	1.2

DB-309-3	ppb
Benzene	320
Cyclohexane	3 J
Toluene	68
Xylene (Total)	9 J

MW-514	ppb
Benzene	0.5 J
Carbon Disulfide	0.3 J
Cyclohexane	3 J
Ethylbenzene	0.6 J
Methylcyclohexane	5
Toluene	2
Xylene (Total)	6

MW-515	ppb
cis-1,2-Dichloroethene	640
Methylene Chloride	8 J
Vinyl Chloride	16 J
Cadmium	12

MW-519	ppb
1,1-Dichloroethane	2100
1,1-Dichloroethene	190 J
cis-1,2-Dichloroethene	30000 D
Vinyl Chloride	1300

MW-524	ppb
Carbon Disulfide	4 J
Methylene Chloride	5

MW-525	ppb
cis-1,2-Dichloroethene	0.4 J

MW-517	ppb
Benzene	3
Carbon Disulfide	1
cis-1,2-Dichloroethene	1
Cyclohexane	14
Ethylbenzene	3
Isopropylbenzene	0.3 J
Methylcyclohexane	12
Toluene	15
Xylene (Total)	22
Cadmium	20

MW-521	ppb
1,1,1-Trichloroethane	570
1,1-Dichloroethane	2600
1,1-Dichloroethene	380 J
cis-1,2-Dichloroethene	32000 D
Toluene	200 J
Vinyl Chloride	1600

DB-309-2	ppb
1,1-Dichloroethane	88
1,1-Dichloroethene	3 J
cis-1,2-Dichloroethene	170
Methylene Chloride	5
Trichloroethene	13
Vinyl Chloride	11

LEGEND:

- OW-105 526.89 — OVERBURDEN MONITORING WELL LOCATION GROUNDWATER ELEVATION (FEET ABOVE RCD)
- (OIL = 4.20) — THICKNESS OF OIL LAYER (IN FEET)
- OVERBURDEN–BEDROCK INTERFACE MONITORING WELL LOCATION
- BEDROCK MONITORING WELL LOCATION
- DEEP BEDROCK MONITORING WELL LOCATION
- LNAPL INVESTIGATION PIEZOMETER LOCATION
- RI/FS INTERMEDIATE BEDROCK MONITORING WELL
- RI/FS OVERBURDEN–BEDROCK INTERFACE MONITORING WELL
- RI/FS OVERBURDEN MONITORING WELL
- RI/FS SOIL BORING
- OVERBURDEN–BEDROCK INTERFACE WELL, ABANDONED CHEMICAL SALES FACILITY SITE (ACS)
- APPROXIMATE LOCATION OF PRINCIPAL STORMWATER OR COMBINED SEWER LINES (SHOWN ONLY ON EAST SIDE OF FACILITY)
- SEWER SYSTEM MANHOLE SHOWING INVERT ELEVATION OF DISCHARGE PIPE
- 520 — GROUNDWATER ELEVATION CONTOUR LINE (POTENTIOMETRIC LEVEL IN FEET ABOVE RCD) SHOWING APPARENT DIRECTION OF GROUNDWATER FLOW IN THE INTERMEDIATE BEDROCK ZONE
- NM = NOT MEASURED

NOTES:

1. BASE PLAN PROVIDED BY DELCO CHASSIS DIVISION.
2. ALL LOCATIONS ARE APPROXIMATE. MW-99-1, MW-99-2 AND MW-99-3 LOCATIONS BASED ON GOLDER ASSOCIATES REPORT. ACS WELL LOCATIONS BASED ON E&E REPORT.
3. REFER TO TEXT FOR ADDITIONAL INFORMATION.
4. ALL ELEVATIONS ARE FEET ABOVE ROCHESTER CITY DATUM (RCD). RCD = NGVD + 1.08 FEET.
5. *–GROUNDWATER ELEVATIONS AND OIL THICKNESS MEASUREMENTS MADE ON 9/2/03 AND 9/3/03 EXCEPT AS NOTED.
6. CONTOUR LINES ARE BASED ON INTERPOLATION OF DATA BETWEEN INTERMEDIATE–BEDROCK ZONE MONITORING WELLS. ACTUAL GROUNDWATER ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN. CONTOURS ARE DASHED WHERE INFERRED, WITH INFERENCE BASED ON MEASUREMENTS MADE AFTER 9/4/03.
7. REFER TO TABLE 1 FOR A COMPLETE SUMMARY OF GROUNDWATER SAMPLE ANALYSIS RESULTS.

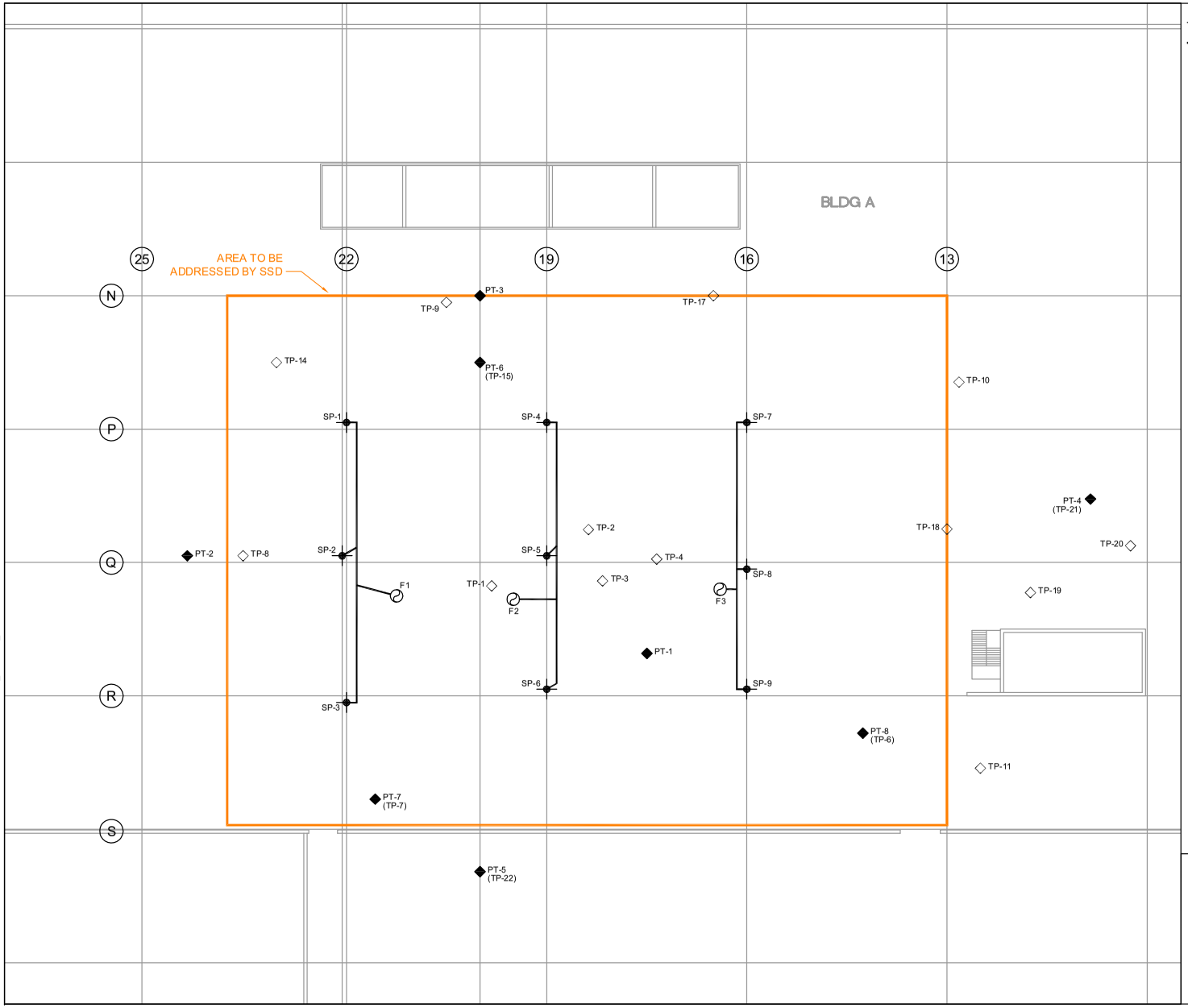
VALEO/FORMER GM – DELCO CHASSIS FACILITY
ROCHESTER, NEW YORK
SITE NO. 8-28-099

Figure 7

SITE PLAN SHOWING INTERMEDIATE–AND DEEP–BEDROCK GROUNDWATER CONDITIONS, SEPTEMBER 2003

SCALE: AS SHOWN

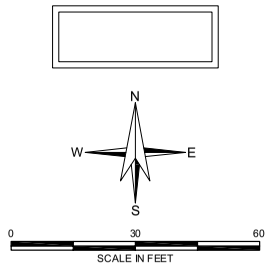
NOVEMBER 2003



LEGEND:

- DEPRESSURIZATION SYSTEM PIPING
- SUCTION POINT
- TEMPORARY TEST POINT LOCATION
- PERMANENT TEST POINT LOCATION
- FAN LOCATION

Test Point	Initial Vacuum
TP-1	-0.015
TP-2	-0.046
TP-3	-0.075
TP-4	-0.102
TP-5	-0.039
TP-8	-0.011
TP-9	(+)0.001
TP-10	(+)0.002
TP-11	-0.028
TP-14	-0.004
TP-17	-0.019
TP-18	-0.019
TP-19	-0.01
TP-20	(+)0.017
PT-1 (TP-12)	-0.029
PT-2 (TP-13)	-0.001
PT-3 (TP-16)	-0.004
PT-4 (TP-21)	(+)0.003
PT-5 (TP-22)	(+)0.001
PT-6 (TP-15)	-0.022
PT-7 (TP-7)	-0.018
PT-8 (TP-6)	-0.035
Note: ND -non-detect	



HALEY & ALDRICH

VALEO/FORMER GM DELCO CHASSIS DIVISION FACILITY
GENERAL MOTORS CORPORATION
ROCHESTER, NEW YORK

AS-BUILT SUB-SLAB DEPRESSURIZATION SYSTEM PLAN

Figure 8

SCALE: AS SHOWN
APRIL 2009

G:\70436 - GM MABU\2811\CAD\DRAWINGS\70436-DEPRESSURIZATION SYSTEM_AS-BUILT_R2.DWG

APPENDIX A

Responsiveness Summary
RESPONSIVENESS SUMMARY

Valeo – Former GM Delco Site
State Superfund Project
Rochester, Monroe County, New York
Site No. 828099

The Proposed Remedial Action Plan (PRAP) for the Valeo – Former GM Delco Site, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 24, 2012. The PRAP outlined the remedial measure proposed for the contaminated soil and groundwater at the Valeo – Former GM-Delco site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on March 7, 2012, which included a presentation of the remedial investigation/feasibility study for SSF (RI/FS) for the Valeo- Former GM Delco site as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 25, 2012.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: How long will it be until cleanup work begins, and how long will it take to implement the remedy?

RESPONSE 1: Prior to implementing the remedy, the NYSDEC must conduct a search for potentially responsible parties (PRPs). If viable PRPs are located, the NYSDEC will offer them a chance to implement the remedy. If there are no viable PRPs or the PRPs refuse to implement the remedy, then a State-hired consultant will implement the remedy. A PRP search will take approximately six months. If a viable PRP can be located and agrees to implement the remedy, it will take approximately six to twelve months to negotiate a consent order and develop the remedial design. Implementation of the remedy is estimated to last six to nine months.

COMMENT 2: Will an access agreement be obtained from the current property owner to implement the remedy?

RESPONSE 2: Access agreements or other statutory authorities will be used to gain the necessary access. Additionally, the State would work with the property owners and tenants so that interruption of facility operations are kept to a minimum.

COMMENT 3: What is the status of the cleanup activities at the Abandoned Chemical Sales site?

RESPONSE 3: The project was referred for State Superfund implementation in September 2011. It is anticipated that a State-hired contractor will begin developing a remedial design in the spring of 2012.

David Day, P.E and Nathan Simon, P.E. of Day Environmental, Inc. submitted a letter (dated March 23, 2012) which included the following comments:

COMMENT 4: The PRAP is inconsistent with the Feasibility Study (FS) in that it fails to specify a phased approach to implementing the remedy that includes pilot scale testing. In addition, as is appropriate and customary for standard engineering practice, practical performance based criteria should be established as benchmarks to evaluate the effectiveness of pilot test(s) and any phased full-scale system. The PRAP and the FS prepared for the Site, dated May 15, 2007, recommended Light Non-Aqueous Phase Liquid (LNAPL) Recovery with In-Situ Bioremediation as the remedial alternative to address the identified LNAPL impact at the Site. However, Section 9.5 of the FS report further recommends "The first phase of implementation would consist of extraction well installation and a pilot test of the feasibility of this alternative in the Crane Bay portion of the Area of Review (AOR) #2/3. Expanded implementation would follow in phases... if pilot testing in the Crane Bay area is successful. If pilot testing or later phases of implementation demonstrate that LNAPL depletion is not feasible, New York State Department of Environmental Conservation (NYSDEC) approval for discontinuation of the LNAPL depletion actions would be sought." The PRAP does not discuss conducting a LNAPL recovery pilot test prior to completing the remedial design, or using a phased approach for implementing a full-scale LNAPL recovery system. The Site's physical characteristics and the areal extent of contamination suggest additional LNAPL evaluation is required prior to full-scale implementation. Section 4.1 of the FS report also estimates that the cumulative quantity of LNAPL present in the sub-surface within AOR #l, AOR #2, AOR #3 and AOR #4 to be between 2300 and 7400 gallons, and Appendix B of the FS report documents the limited effectiveness of four LNAPL remediation and pilot testing efforts previously conducted at the Site. A summary of the four LNAPL removal efforts that have already been conducted are summarized below.

1) Long-Term Installation of Passive Skimming Systems: Passive skimming systems were operated between January 1997 and January 2000 and recovered approximately 15 gallons of LNAPL.
2) Short-Term Vacuum Extraction Pilot Test: A vacuum extraction pilot test was conducted in December 1998 within AOR #l, AOR #2 and AOR #4. Quantities of LNAPL recovered were limited and less than the volume of groundwater removed during the

testing. The FS report concluded that the application of interface vacuum extraction did not appear to promote an enhanced rate of LNAPL recovery.

3) Short-Term Groundwater LNAPL Pumping Test: A step-rate groundwater pump test conducted on July 5, 2005 documented that the minimum achievable pumping rate caused the target well to quickly draw down below the minimum pumping level rendering the step-rate pumping test unsuccessful. The amount of LNAPL recovered with the few gallons of water produced was negligible.
4) Sorbent Tubes: Sorbent tubes were installed in select locations within AOR #l through AOR#4 in October 1998 and removed periodically through May 2000. The amount of LNAPL recovered was approximately 6 gallons.

Based on the estimated volume of LNAPL present in the subsurface (i.e., 2300 to 7400 gallons) and the documented difficulty of removing LNAPL from the subsurface (i.e., only approximately 21 gallons of LNAPL was removed during four LNAPL removal and pilot testing efforts), pilot testing is warranted prior to completing a remedial design. In addition, phased implementation of any selected LNAPL recovery system should be conducted in order to ensure that a cost-effective remedial action can be implemented. Prior to pilot testing and the phased implementation of any LNAPL recovery system, practical performance based criteria should also be established as benchmarks to evaluate the effectiveness of the pilot testes) and any phased full-scale system. System test results that do not meet the established benchmarks should be considered inadequate for the Site. If the pilot test and/or a full scale LNAPL recovery system show that the established benchmarks cannot be met, then the LNAPL depletion actions should be discontinued.

RESPONSE 4: The preferred remedy requires a remedial design and provides flexibility for implementation of the remedy. Since the technology to collect the LNAPL is not specified, there will be opportunities to evaluate various collection technologies which may include a pilot test and phased implementation of the remedy. If a pilot study is conducted, the technology must meet certain performance parameters prior to full scale implementation. In this case, the technology used must be able to collect LNAPL at a rate that will remediate the site in a reasonable amount of time. LNAPL recovery may not be feasible if it has dispersed over a wide area or has mostly dissolved into the aqueous phase. However, based on our current understanding of the nature and extent of LNAPL contamination, collection and treatment of LNAPL is a viable technology.

COMMENT 5: NYSDEC's recommendation of soil excavation in AOR#7 in the PRAP is not consistent with the FS. The PRAP recommends excavation and off-site disposal of petroleum contaminated soils exceeding the Part 375 Protection of Groundwater Soil Cleanup Objectives (SCOs) within AOR#7. However, the FS report recommends institutional action (i.e., Alternative S2) to address the soil contamination at the Site. Also, Section 9.3 of the FS states that "Institutional Action in all areas is considered effective because the finding of the risk assessment indicate that no unacceptable risks to human health or ecological resources are proposed by the environmental contaminants given the current and reasonable-anticipated future uses of the Site." It appears that the NYSDEC recommends soil excavation in AOR#7 to address the impacts observed in well MW-307-1. Excavation, as described in the PRAP, appears limited to the unsaturated soils in proximity to the TP-15-1 area to a depth of 6 feet (i.e., the saturated

zone is approximately 19 feet below the ground surface and the top of bedrock is approximately 13.5 feet below the ground surface in the AOR#7 area). The Remedial Investigation (RI) report concludes in Section 8 that... "[t]he water table in this area occurs below the top of bedrock, and therefore groundwater is not in contact with the contaminated soil lens, nor is contaminated groundwater present in the overburden." As a result, it does not appear that the contaminated soil in this area is contributing to the groundwater contamination. Also, the contaminant "fingerprint" in the groundwater is different than the contaminant "fingerprint" in the soil within AOR#7. In fact, Section 4.1 of the FS report concludes that "The contaminant profile at MW-307-1 resembles the profile of naturally occurring petroleum hydrocarbons that are present in deep bedrock groundwater at the Site, and therefore it is possible that the conditions at MW-307-1 are related to upward flow of deep groundwater rather than the contaminated soil lens at TP-15-1." Furthermore, the cost of soil removal (estimated to be approximately $130,000 in the FS) is significant, and, based on the information presented above any benefit associated with the removal of soil in this area is questionable. Section 9.4 of the FS report also states that "The cost of soil removal in AOR#7 is high for the potential but uncertain marginal reduction in groundwater concentrations that would be gained by removing those soils." The regulations require that cost-effectiveness be considered in remedy selection. The PRAP concludes that the extra capital costs (i.e., for soil excavation) are nearly off-set by the reduced annual expenses (estimated to be $5,000/year). However, considering that deep bedrock groundwater infiltration is the likely source of contamination observed in MW-307-1, there is no need for long-term monitoring in AOR#7 even if soil removal in AOR#7 is not conducted. It should also be noted that the estimated annual savings of $5,000/year is probably an overestimate for biennial sampling in AOR#7. Based on the information presented above, the Site's Record of Decision should adopt the FS Recommendation for institutional control to address AOR#7 soil impact. Implementing an institutional control will be more cost effective than soil removal, and will most likely provide the same benefit.

RESPONSE 5: The NYSDEC added the fire training area excavation, in accordance with 6NYCCR 375-2.8(c)(4), because the area of contaminated soil is above the soil cleanup objectives, is a relatively small volume, it is located in an undeveloped portion of the site, and it is easily accessible. NYSDEC maintains its position that soil contamination in the area has impacted groundwater and PCBs in soils exceed the restricted commercial cleanup objectives. Source removal is the preferred manner of addressing a source area as set forth in 6NYCCR 375-1.8(c).

COMMENT 6: The PRAP and FS report both recommend institutional control as a component of the remedial alternative. The current and anticipated future use of the on-site building and surrounding area is commercial and industrial. The NYSDEC should be aware that a deed restriction restricting the Site to commercial and industrial uses and preventing the use of groundwater for any purpose already exists. A copy of the deed restriction is attached. The on-site building is currently subdivided into multiple commercial and industrial businesses, which require multiple building entrances/exits, as well as vehicle access to most areas of the Site. As such, institutional actions should be implemented such that building access and/or vehicle movement is not restricted (e.g., capping instead of fencing, etc.). Also, any site management plan should address soil disturbance in only those AORs where impacts remain. As the Site has now been placed into productive use, it is important that the NYSDEC coordinate with the

current owner when developing the content of a site management plan and any further institutional controls.

RESPONSE 6:
The NYSDEC is aware of an existing deed restriction on the property; however, it does not adequately address the requirements of ECL 27-1318(B) which requires an environmental easement as the institutional control for all class 2 inactive hazardous waste disposal sites. In addition to use restrictions, the NYSDEC requires development of a detailed site management plan and periodic certification be included as part of the institutional control for the site.

APPENDIX B

Administrative Record

Valeo – Former GM Delco Site
State Superfund Project
Rochester, Monroe County, New York
Site No. 828099

Proposed Remedial Action Plan for the Valeo- Former GM Delco site*,* dated February 2012, prepared by the Department.

Order on Consent, Index No. B8-0543-98-08, between the Department and General Motors Corporation, executed on July 30, 2002.

"Baseline Study Report Former Delco Chassis Facility", August 1996, Prepared by Haley and Aldrich of New York.

"Response to Comments Former GM Delco Chassis Division Facility" Volume I, December 1998, Prepared by Haley and Aldrich of New York.

"Response to Comments Former GM Delco Chassis Division Facility" Volume II, December 1998, Prepared by Haley and Aldrich of New York.

"Supplement to the Baseline Study Report Valeo Former GM – Delco Chassis Facility," December 2000, Prepared by Haley and Aldrich of New York.

"Report on Remedial Investigation Valeo/Former GM Delco Chassis Division Facility" Volume I, April 2005, Prepared by Haley and Aldrich of New York.

"Report on Remedial Investigation Valeo/Former GM Delco Chassis Division Facility" Volume II, April 2005, Prepared by Haley and Aldrich of New York.

"Report on Remedial Investigation Valeo/Former GM Delco Chassis Division Facility" Volume III, April 2005, Prepared by Haley and Aldrich of New York.

"Report on Remedial Investigation Valeo/Former GM Delco Chassis Division Facility" Volume IV, April 2005, Prepared by Haley and Aldrich of New York.

"Report on Feasibility Study Valeo/Former GM Delco Chassis Division Facility", May 2007, Prepared by Haley and Aldrich of New York.

Operation, Maintenance, and Monitoring Plan, Sub-Slab Depressurization System, Maguire Family Properties, Inc., Valeo/Former GM Delco Chassis Division Facility", May 2009, Prepared by Haley and Aldrich of New York.