City of Rochester

Rochester, NY
All-America City
1998

FAX (585) 428-6010
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Department of
Environmental Services

Office of the Commissioner
Division of Environmental Quality
30 Church Street, Rm 300B
Rochester, New York 14614-1278
Tel#: (585) 428-6294

April 26, 2007

Ms. Kelly Lewandowski
Chief, Site Control Section
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7020

Re: Environmental Restoration Program (ERP) Remediation-Phase Grant Application
Former Photech Imaging Systems, Inc. Site
1000 Driving Park Avenue
City of Rochester, Monroe County, New York
Site Number B-00016-8

Dear Ms. Lewandowski:

Enclosed for your review and consideration is an Environmental Restoration Program (ERP) Remediation-Phase grant application from the City of Rochester (City) for cleanup of the former Photech Imaging Systems, Inc. site, located at 1000 Driving Park Avenue in the City of Rochester. The City of Rochester's current brownfield program has been instrumental in achieving both environmental and economic objectives, and we hope that with additional assistance from the ERP program the City can continue to redevelop underutilized and unproductive brownfield properties.

The former Photech site is a 12.5 acre parcel of land that is currently owned by the City. The Photech site was a former photographic film and photographic paper manufacturing facility that currently contains several former manufacturing, process, storage, and laboratory buildings totaling more than 100,000 square feet. Manufacturing at the former Photech site ceased operation in the early 1990s, and all of the buildings are in poor condition.

The Photech site was acquired by the City though tax foreclosure in 1997, and in September 1997, the New York State Department of Environmental Conservation (NYSDEC) approved the City's 1996 Title 5 Bond Act grant application for site investigation and remedial alternatives evaluation. In January 2006 the revised site investigation and remedial alternatives (SI/RA) report was submitted to the NYSDEC. The SI/RA report documented several areas of concern, and cleanup will include asbestos abatement, building and equipment decontamination, building demolition, utility decommissioning, wastewater and silver recovery system removal, soil removal, groundwater remediation, and the development and

implementation of engineering controls and institutional controls. The NYSDEC issued a Preliminary Remedial Action Plan (PRAP) in February 2006 The PRAP specified the proposed remedial actions to cleanup the Photech site, the alternatives evaluated, and the estimated cleanup costs. The PRAP was presented at a public meeting held on March 7, 2006, and based on the PRAP and public comments, the NYSDEC issued Record of Decision (ROD) in March 2006 for the Site.

The NYSDEC Clean Air/Clean Water Bond Act program reimburses the City's 50% for asbestos abatement and building demolition, and 90% for all other remedial work. The City is applying for grant funding of approximately $3,101,979 based on a total estimated project cost of approximately $4,506,875. The City's estimated cost share is approximately $1,404,896.

The documented liabilities and potentially significant environmental remediation costs have discouraged redevelopment of the property It is anticipated that the former Photech site will be redeveloped as an industrial park which will subsequently stimulate private sector investment and new economic development.

Please let me know if you need additional information or have questions regarding this grant application. Specific questions regarding the application can be directed to Mr. Joseph Biondolillo, Senior Environmental Specialist with the City's Division of Environmental Quality at (585) 428-6649 or myself at (585) 428-5978.

Sincerely,

Mark Gregor
Manager, Division of Environmental Quality

enclosures
c: Robert Duffy, Mayor
Paul Holahan, Commissioner - City DES
Bart Putzig - NYSDEC Region 8
James Gillis - City Budget
Joseph Biondolillo- City DEQ
Vicki Brawn - City DEQ

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NYSDEC ERP Grant Application

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ENVIRONMENTAL RESTORATION PROGRAM (ERP) APPLICATION

1996 CLEAN WATER/CLEAN AIR BOND ACT

ECL ARTICLE 56 - 6NYCRR 375-4

3/14/06

NAME OF MUNICIPALITY CITY OF ROCHESTER, NEW YORK		FED. ID # 16-6002551
NAME OF INDIVIDUAL AUTHORIZED TO SIGN APPLICATION Robert J. Duffy		
TITLE OF AUTHORIZED INDIVIDUAL Mayor		
ADDRESS CITY HALL, ROOM 307A, 30 CHURCH STREET		
CITY/TOWN ROCHESTER	ZIP CODE 14614	
PHONE 585-428-7045	FAX 585-428-6059	E-MAIL duffyr@cityofrochester.gov
NAME OF COMMUNITY BASED ORGANIZATION (IF APPLICABLE)		
COMMUNITY BASED ORGANIZATION'S REPRESENTATIVE		
ADDRESS		
CITY/TOWN	ZIP CODE	
PHONE	FAX	E-MAIL

SITE NAME Former Photech Imaging Systems, Inc.	
SITE ADDRESS 1000 Driving Park Avenue	
CITY/TOWN ROCHESTER	ZIP CODE 14613
COUNTY MONROE	SIZE (ACRES) 12.48
LATITUDE (degrees/minutes/seconds) 43 ° 11 ' 9 "	LONGITUDE (degrees/minutes/seconds) 77 ° 39 ' 24 "

PLEASE ATTACH A COUNTY TAX MAP WITH IDENTIFIER NUMBERS, ALONG WITH ANY FIGURES NEEDED TO SHOW THE LOCATION AND BOUNDARIES OF THE SITE. ALSO INCLUDE A USGS 7.5 MINUTE QUAD MAP IN WHICH THE SITE IS LOCATED.

1. DO THE SITE BOUNDARIES CORRESPOND TO TAX MAP METES AND BOUNDS? IF NO, PLEASE ATTACH A METES AND BOUNDS DESCRIPTION OF THE SITE IF ONE IS COMPLETED. ☑ YES ☐ NO
2. IS THE SITE PART OF A DESIGNATED BROWNFIELD OPPORTUNITY AREA PURSUANT TO GML970-R? IF YES, IDENTIFY AREA (NAME)_____ ☐ YES ☑ NO
3. IS THE SITE LISTED ON THE NYS REGISTRY OF INACTIVE HAZARDOUS WASTE DISPOSAL SITES? IF YES, FILL IN CURRENT REGISTRY SITE NUMBER AND CLASSIFICATION. ☐ YES ☑ NO

REGISTRY SITE NUMBER:_____ CLASSIFICATION: _____

1. HAS THE APPLICANT GENERATED, TRANSPORTED OR DISPOSED OF, OR ARRANGED FOR OR CAUSED THE GENERATION, TRANSPORTATION OR DISPOSAL OF, HAZARDOUS WASTE OR PETROLEUM ON THE SITE? ☐YES ☑NO

2. HAS THE APPLICANT UNDERTAKEN, OR INTEND TO UNDERTAKE, ANY INDEMNIFICATION OBLIGATION RESPECTING A PARTY RESPONSIBLE UNDER LAW FOR THE REMEDIATION OF THE SITE? ☐YES ☑NO

3. HAS THE APPLICANT LEASED THE SITE TO ANOTHER PARTY THAT GENERATED, TRANSPORTED OR DISPOSED OF, OR THAT ARRANGED FOR OR CAUSED THE GENERATION, TRANSPORTATION OR DISPOSAL OF HAZARDOUS WASTE OR PETROLEUM ON THE SITE? IF YES, CHECK ONE OF THE FOLLOWING: ☐YES ☑NO

   ☐ A. THE APPLICANT DID NOT KNOW THAT SUCH OTHER PARTY GENERATED, TRANSPORTED OR DISPOSED OF, OR ARRANGED FOR OR CAUSED THE GENERATION, TRANSPORTATION OR DISPOSAL OF SUCH HAZARDOUS WASTE OR PETROLEUM.

   ☐ B. THE APPLICANT KNEW THAT SUCH OTHER PARTY GENERATED, TRANSPORTED OR DISPOSED OF, OR ARRANGED FOR OR CAUSED THE GENERATION, TRANSPORTATION OR DISPOSAL OF SUCH HAZARDOUS WASTE OR PETROLEUM AND DID NOT TAKE ACTION TO REMEDIATE OR CAUSE THE REMEDIATION OF SUCH HAZARDOUS WASTE OR PETROLEUM.

   ☐ C. THE APPLICANT KNEW THAT SUCH OTHER PARTY GENERATED, TRANSPORTED OR DISPOSED OF, OR ARRANGED FOR OR CAUSED THE GENERATION, TRANSPORTATION OR DISPOSAL OF SUCH HAZARDOUS WASTE OR PETROLEUM AND TOOK ACTION TO REMEDIATE OR CAUSE THE REMEDIATION OF SUCH HAZARDOUS WASTE OR PETROLEUM.

4. DOES THE APPLICANT CURRENTLY OWN THE SITE OR HAS IT OBTAINED TEMPORARY INCIDENTS OF OWNERSHIP FOR AN INVESTIGATION PURSUANT TO ECL 56-0508? ☑YES ☐NO

IF THE APPLICANT CURRENTLY OWNS THE SITE, ATTACH A COPY OF THE DEED, ATTORNEY CERTIFICATION OF PROOF OF OWNERSHIP, AND, IF THE APPLICANT HAS OBTAINED ONE WITHIN THE PAST YEAR, A TITLE REPORT. IF THE APPLICANT HAS OBTAINED TEMPORARY INCIDENTS OF OWNERSHIP, ATTACH A COPY OF THE ORDER OF THE COURT.

PLEASE ATTACH A DESCRIPTION OF THE PROJECT WHICH INCLUDES THE FOLLOWING INFORMATION (REFER TO THE ENVIRONMENTAL RESTORATION PROGRAM PROCEDURES HANDBOOK FOR DETAILED INSTRUCTIONS).

- PURPOSE AND SCOPE OF THE PROJECT;
- CURRENT AND PROPOSED FUTURE USE OF THE SITE (RESIDENTIAL, COMMERCIAL, INDUSTRIAL);
- ESTIMATED PROJECT COST (INCLUDE ANY RESPONSIBLE PARTY COST RECOVERY PAYMENTS RECEIVED OR ANTICIPATED, AS WELL AS ANY OTHER ACTUAL OR POTENTIAL FUNDING SOURCES FOR THE PROJECT);
- HOW THE PROJECT WOULD SATISFY THE CRITERIA OF ECL 56-0505; AND AN
- ESTIMATED PROJECT SCHEDULE (FIELD WORK MUST BEGIN WITHIN 12 MONTHS OF THE APPLICATION APPROVAL DATE)

TO THE EXTENT THAT EXISTING INFORMATION/STUDIES/REPORTS ARE AVAILABLE TO THE APPLICANT, PLEASE ATTACH THE FOLLOWING:

1. **ENVIRONMENTAL DATA**
   A PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT PREPARED IN ACCORDANCE WITH ASTM E 1527 (American Society for Testing and Materials: Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process), AND ALL ENVIRONMENTAL REPORTS RELATED TO CONTAMINANTS ON OR EMANATING FROM THE SITE.
2. **OWNERS**
   A LIST OF PREVIOUS OWNERS WITH NAMES, LAST KNOWN ADDRESSES AND TELEPHONE NUMBERS (DESCRIBE APPLICANT'S RELATIONSHIP, IF ANY, TO EACH PREVIOUS OWNER LISTED. IF NO RELATIONSHIP, PUT "NONE").
3. **OPERATORS**
   A LIST OF PREVIOUS OPERATORS WITH NAMES, LAST KNOWN ADDRESSES AND TELEPHONE NUMBER (DESCRIBE APPLICANT'S RELATIONSHIP, IF ANY, TO EACH PREVIOUS OPERATOR LISTED. IF NO RELATIONSHIP, PUT "NONE").

INDICATE KNOWN OR SUSPECTED CONTAMINANTS AND THE MEDIA WHICH ARE KNOWN OR SUSPECTED TO HAVE BEEN AFFECTED:

Contaminant Category	Soil	Groundwater	Surface Water	Sediment	Soil Gas
Petroleum	✓	✓			
Chlorinated Solvents	✓	✓			
Other VOCs	✓	✓			
SVOCs	✓	✓			
Metals	✓	✓			
Pesticides					
PCBs					
Other* ASBESTOS	✓				

*PLEASE DESCRIBE: LOCATIONS IDENTIFIED IN PRE-DEMOLITION ASBESTOS SURVEYS - Refer to SI/RA Report

1. HAS THE DEC ISSUED A RECORD OF DECISION FOR THE SITE UNDER THE ERP? ☑YES ☐NO
2. HAS GROUNDWATER OR A SURFACE WATER BODY BEEN CONTAMINATED ABOVE STANDARDS? ☑YES ☐NO
   IF YES, CHECK ALL THAT APPLY:
   - ☐ A. THE INFLUENT TO A PUBLIC OR PRIVATE WATER SUPPLY HAS BEEN CONTAMINATED OR THREATENED.
   - ☐ B. A CLASS A OR AA SURFACE WATER BODY OR A PRIMARY OR PRINCIPAL AQUIFER HAS BEEN CONTAMINATED WITHOUT AFFECTING AN EXISTING WATER SUPPLY.
   - ☑ C. GROUNDWATER HAS BEEN CONTAMINATED ABOVE STANDARDS OR A SURFACE WATER HAS BEEN IMPACTED.
3. HAVE ENDANGERED, THREATENED OR RARE SPECIES, STATE PROTECTED STREAMS, OR STATE REGULATED WETLANDS BEEN IMPACTED BY RELEASES FROM THE SITE? ☐YES ☑NO
4. ARE CONTAMINANTS PRESENT IN SOILS/WASTE AT LEVELS THAT EXCEED DEC DIVISION OF ENVIRONMENTAL REMEDIATION GUIDANCE VALUES? ☑YES ☐NO
5. IS THE SITE LOCATED IN A DESIGNATED EMPIRE ZONE? ☐YES ☑NO
6. IS THE SITE LOCATED IN A DESIGNATED EN-ZONE PURSUANT TO TL § 21 (b)(6)? ☐YES ☑NO
7. HAS ALL OR PART OF THE SITE BEEN IDLE OR ABANDONED FOR MORE THAN ONE YEAR? ☑YES ☐NO
8. HAS THE APPLICANT SIGNED AN AGREEMENT WITH A PRIVATE PARTY TO REUSE THE SITE ONCE IT IS RESTORED? ☐YES ☑NO
9. HAS THE APPLICANT COMMITTED TO A NEW PUBLIC OR RECREATIONAL USE? ☐YES ☑NO
10. HAS THE APPLICANT COMPLIED WITH THE STATE ENVIRONMENTAL QUALITY REVIEW ACT (SEQRA) REGARDING THIS ACTION? IF YES, INCLUDE THE DETERMINATION (NEGATIVE DECLARATION OR FINDINGS STATEMENT) IN THE ATTACHED PROJECT DESCRIPTION AND IDENTIFY ALL INVOLVED AGENCIES IN THE COORDINATED REVIEW. ☑YES ☐NO
11. IS THE APPLICANT AWARE OF OTHER FUNDING SOURCES FOR REMEDIATING THE SITE? IF YES, PROVIDE SOURCES(S) AND DOLLAR AMOUNT IN THE ATTACHED PROJECT DESCRIPTION. ☑YES ☐NO

The undersigned, on behalf of the applicant, does hereby certify that:

- All statements made for the purpose of obtaining State assistance for the proposed project either are set out in full in this application, or are set out in full in exhibits attached to this application and incorporated by this reference; and
- The individual whose signature appears hereon is authorized to sign this application for the municipality.

A FALSE STATEMENT MADE HEREIN IS PUNISHABLE AS A CLASS "A" MISDEMEANOR PURSUANT TO SECTION 210.45 OF THE PENAL LAW.

Signature of Individual Authorized to Sign the Application — Date: 4-30-07

Please note: The application must include a certified copy of the municipal authorization which designates, by title (Mayor, Town Supervisor, etc.), the representative authorized to act on behalf of that municipality in all matters related to financial assistance. The authorization must empower the representative to make application, execute the State Assistance Contract, and otherwise act for the municipality in all State assistance-related matters. A sample form is provided in the Environmental Restoration Projects Procedures Handbook.

The undersigned, on behalf of the Community Based Organization acting in partnership with the municipality, does hereby certify that:

- The Community Based Organization is a not-for-profit corporation, exempt from taxation under section 501(c)(3) of the internal revenue code whose stated mission is promoting reuse of brownfield sites within a specified geographic area in which the Community Based Organization is located, which has 25% or more of its board of directors residing in the community in such area;
- The Community Based Organization represents a community with a demonstrated financial need;
- Not more than 25% of the members, officers or directors of the Community Based Organization are or were employed by or receiving compensation from any person responsible for a site under title 13 or title 14 of article 27 of the Environmental Conservation Law, article 12 of the navigation law or under applicable principles of statutory or common law liability; and
- The individual whose signature appears hereon is authorized to sign this application for the Community Based Organization.

A FALSE STATEMENT MADE HEREIN IS PUNISHABLE AS A CLASS "A" MISDEMEANOR PURSUANT TO SECTION 210.45 OF THE PENAL LAW.

Signature of Individual Authorized to Sign for the Community Based Organization — Date

SUBMITTAL INFORMATION:

Three (3) complete copies, one with original signatures, are required.

- **Two (2)** of the copies, one hard copy with original signatures and one electronic copy in Portable Document Format (PDF), on a CD or diskette, must be sent to:

  Chief, Site Control Section
  New York State Department of Environmental Conservation
  Division of Environmental Remediation
  625 Broadway
  Albany, NY 12233-7020

- **One (1)** copy must be sent to the DEC regional contact in the regional office covering the county in which the site is located. Please check our website for the addresses of our regional offices: http://www.dec.state.ny.us/website/der/index.html

FOR DEPARTMENT USE ONLY:

ERP SITE NO:_____ **ERP SITE T&A CODE:**_____ **PROJECT MANAGER:**_____

City of Rochester
Environmental Restoration Program (ERP)
Remediation-Phase
Grant Application

Project Description
&
Site's Environmental History

Former Photech Imaging Systems, Inc. Site
1000 Driving Park Avenue
Rochester, New York 14613

March 2007

Prepared by City of Rochester, New York
Department of Environmental Services
Division of Environmental Quality

I. Project Description

1. Purpose and Scope of Project

The City of Rochester's Division of Environmental Quality (DEQ) has completed a Site Investigation/Remedial Alternatives project in accordance with the 1996 New York State Clean Water Clean Air Bond Act Title 5 program at the City-owed property known as former Photech Imaging Systems, Inc. (Photech) site located at 1000 Driving Park Avenue, Rochester, New York.

The New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) for the Photech site in March 2006. The ROD documented the environmental conditions and proposed remedial alternatives to address environmental contamination in the existing buildings and related process equipment, and contamination in soil, sediments, and groundwater.

The environmental cleanup of former Photech Site will be completed under the 1996 New York State Clean Water Clean Air Bond Act Title 5 program. The cleanup will be a large and complex project, and will include asbestos abatement, building and equipment decontamination, utility decommissioning, wastewater tank system removal, soil removal, groundwater remediation, and the development and implementation of engineering controls and institutional controls. The demolition and remediation of the Photech facility will likely result in encountering soil and groundwater contamination located under building slabs, building basements, tunnels and underground utility corridors.

A. Site Background

The former Photech Site is approximately 12.5 acres and is owned by the City. The basic Photech Site information is listed below:

Current Owner:	City of Rochester, New York
Tax Map SBL Number:	090 . 630 - 0001 - 001 . 000 / 0000
Acreage:	12.48
City Use Code:	710 - Manufacturing
City Zoning:	M1 (Manufacturing/Industrial)

The property contains 17 buildings that total more than 100,000 square feet, most of which are in a damaged and dilapidated condition.

The former Photech Site was developed around 1948-1950 as a photographic film manufacturer, and was used for manufacturing of photographic film and photographic paper until 1991, when the site was abandoned in the middle of active production. The Photech facility utilized a wide variety of different chemicals throughout the manufacturing process and generated hazardous and solid wastes, which as a result of the abrupt shutdown of the Photech plant, were abandoned in place. The USEPA conducted an emergency removal of abandoned waste primarily located

outside the plant, and the NYSDEC completed an emergency removal of abandoned waste located inside the facility. However, the USEPA or the NYSDEC remedial work was emergency in nature and did not cleanup or decontaminate building materials, and neither agency certified that equipment (e.g., tanks, piping, vessels) were "clean." As a result, residual contamination is present in below-grade vaults, tanks, equipment and piping, and building equipment and building materials have been contaminated with both asbestos and other chemicals. Vandals have entered the building and removed metal piping which was insulated with friable asbestos thermal insulation, causing significant releases of asbestos fibers thought several buildings.

The Photech property was acquired by the City though tax foreclosure in 1997. In September 1997, the New York State Department of Environmental Conservation (NYSDEC) approved the City's 1996 Title 5 Bond Act grant application for reimbursement of site investigation and remedial alternatives evaluation costs. In January 2006, the City retained Day Environmental, Inc. (DAY) to complete the revised site investigation and remedial alternatives (SI/RA) report, and the report was submitted to the NYSDEC for review and comment. After reviewing the SI/RA report, the NYSDEC issued a Preliminary Remedial Action Plan (PRAP) in February 2006 for public review and comment. The PRAP specified the proposed remedial actions to cleanup the site, the alternatives evaluated, and the estimated cleanup costs. The PRAP was presented at a public meeting held on March 7, 2006. Based on the PRAP and public comments regarding the PRAP, the NYSDEC issued Record of Decision (ROD) in March 2006 for the Site.

B. Proposed Remedial Measures

Site contaminants primarily include asbestos, heavy metals such as silver and cadmium, semi-volatile organic compounds (semi-VOCs). Corrective actions and remedial measures include asbestos abatement, demolition, building decontamination, removal of underground utilities, removal of the waste water and silver recovery system, excavation and off-site disposal of an estimated 15,800 tons of soil and fill materials contaminated with heavy metals and semi-VOCs (PAHs). Other remediation phase tasks include the development of a site management plan, implementation of a NYSDEC environmental easement, implementation of institutional and engineering controls, and implementation of a long-term groundwater monitoring plan. According to the March 2006 NYSDEC Record of Decision, "the New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health." The demolition and subsequent environmental cleanup phase will also remove public health threats by eliminating the potential exposures to police, fire, public works and utility workers that have periodically needed to respond to site issues.

The ROD is the formal document that identifies the approved remedial actions that are required to cleanup the Photech Site. The March 2006 ROD will serve as the basis for the design and cleanup of the Photech Site, and contains detailed information regarding the scope of the proposed remedial measures. Due to the nature and extent of contamination, the environmental cleanup of the former Photech site will consist of the simultaneous completion of several integrated remedial measures. The remedial measures consist of the following primary remedial measures:

1. **Project and Site Preparation:** This task includes the development of a site health and safety plan to include community air monitoring for site contaminants, and an emergency contingency plan. Site preparation activities include site clearing, installation of project signs, installation of security fencing, decommissioning of obsolete groundwater monitoring wells, and the construction of raw material staging areas (e.g., backfill), waste processing areas, and waste storage and decontamination areas.

2. **Asbestos Abatement, Building Decontamination, Building Demolition, and Post-Demolition Design-Phase Investigation**: Several of the buildings contain roofs that have failed, and several fires have damaged and weaken buildings, leading to partial building collapses. A structural assessment of the Photech buildings in October and November 2006 by Herrick-Saylor Engineers indicated that the former Photech buildings have safety and structural concerns due to damage to primary and/or secondary structural systems, and some of the buildings have the potential for collapse. In December 2006 the City of Rochester has issued an Emergency Demolition declaration for the Photech buildings, requiring the buildings to be demolished. This task of the Photech cleanup will include the abatement of asbestos inside the buildings and asbestos on building equipment and in building materials. Asbestos abatement will include damages and friable asbestos debris, thermal insulation, asbestos-containing flooring, and other asbestos-containing building materials previously identified in the DAY SI/RA report. Also included in this task is the characterization and disposal of residual waste and contaminated building materials (reagent bottles, laboratory glassware and counters/sinks, laboratory walls and floors, etc.) which has been previously investigated and quantified during the SI/RA, and the complete demolition of all 17 buildings, including all underground utilities, underground tunnels, and subsurface structures. The masonry portions of the buildings will be characterized, and non-contaminated materials will be crushed on-site, and the crushed fill materials will be used as fill materials in accordance with the approved site grading plan. The characterization of all demolition materials will include segregation of known or suspected contaminated materials based on visual observations, odors, field monitoring equipment readings, previously obtained laboratory sampling results, and augmented by the collection of additional samples (e.g., wipe, core, chip, etc.) as necessary to determine if the materials are a regulated solid waste, a characteristic hazardous waste, an exempt Construction or Demolition (C.D.) material, non-regulated solid waste material eligible for potential recycling.

   During the demolition and the removal of floor slabs, foundations, and subsurface structures, visible subsurface media (e.g., soil, groundwater) will be observed, documented, and characterized. If obvious contamination is encountered during the demolition, it is likely that Interim Remedial Measures (IRMs) will be completed to address grossly contaminated and accessible media. The type and magnitude of the IRM work will be based on field conditions and field decisions

rendered by the City DEQ and consultants/contractors retained by the City, but will generally consist of removal of limited volumes of soil or the evacuation and containerization of contaminated groundwater. Following building demolition and the completion of any IRMs, a design-phase investigation will be implemented to determine the extent of contamination under former building footprints. The design-phase investigation will include the advancement of soil test boring and the installation of groundwater monitoring wells, and the collection and analysis of soil and groundwater samples.

3. **Soil Removal and Off-Site Disposal:** In several areas of the Site soil removal and off-site disposal was the selected remedy. These areas include contaminated soil present east and probably under the Chemical Lab Building #11, and several areas located on the eastern portion of the Site, including a former burn pit area, a former retention pond used for the disposal of waste, a former film incinerator, a former tank area, and former drywells and a culvert discharge area. Also selected for soil removal and off-site disposal are several miscellaneous areas including a former methanol tank area and a former hazardous waste storage area. If contaminated soil is encountered under building footprints after demolition, the contaminated soil will be removed and disposed of off-site. The exact quantities of contaminated soil will be dependant upon the final grading plan and the post-demolition design phase investigation, but a total of approximately 7,000 to 10,000 tons or more of contaminated soil and fill materials may be removed and disposed of off-site.

4. **Removal of Former Silver Recovery System:** Following building demolition, the former Photech silver recovery system will be characterized, removed, and disposed of off-site. This will involve the removal of an aboveground and underground storage tanks, removal of underground piping, the decommissioning and removal of a 12,000-gallon underground concrete vault filled with liquid and sludge wastes, some of which will likely be characterized as hazardous waste. Based on the Site Investigation findings, contaminated soil associated with the silver recovery system will also be removed and disposed of off-site. Contaminated groundwater encountered in the vicinity of the former silver recovery system will be remediated initially during the construction phase of the cleanup project via pumping of groundwater from the underground vault and excavation. If contaminated groundwater is still present after removal of the former silver recovery system, an in-situ groundwater remediation system may need to be designed, installed and operated.

5. **Long-Term Groundwater Monitoring:** After completing the remedial measures, some residual contamination may will still be present in soil or groundwater. A Site-wide groundwater monitoring well network will be installed, monitored, and sampled on a periodic basis to evaluate the effectiveness of the remedial program and to document natural attenuation.

6. **Site Management Plan and Engineering Controls:** Site-wide soil and groundwater environmental management plan will be developed to address residual contamination which may be disturbed during future redevelopment, to provide guidance on measures to mitigate vapor intrusion into new buildings, to identify land use restrictions, and to specify environmental institutional controls.

7. **Environmental Institutional Controls:** Develop and implement various environmental institutional controls, including such things as placing an environmental institutional control in the City of Rochester's computerized Building Information System, initiating deed restrictions and implementation of an environmental easement.

The remediation of the former Photech site will be a large and complex cleanup project that will require a specialized team of consultants and contractors working closely together. Although portions of the cleanup will involve "typical" construction activities (e.g., demolition, soil excavation, backfilling, grading etc.) much of that work will need to be carefully integrated with hazardous material response, health and safety and community protection measures not typical of most construction projects. Because of the uncertain nature of the fill and subsurface soils on the property, excavation and sorting contractors will be required to work with extreme caution and closely with site health and safety and environmental professionals. The project has the potential for numerous work stoppages due to unknown, hazardous, or unsafe conditions. Those portions of the project associated with soil and groundwater remediation will require specialized technical skills and should be performed by qualified environmental consultants and environmental contractors. This complex remedial project will require the ability to rapidly adapt to ever-changing conditions with an increased potential for unforeseen conditions, and will require close integration of environmental disciplines and normal construction activities to respond to site conditions and risks.

C. Report Preparations

A Remedial Design Work Plan will be developed specifying the remedial measures and corrective actions required to remediate the Site. The Remedial Design Work Plan will be developed in accordance with the NYSDEC Municipal Assistance Environmental Restoration Projects "Brownfield Program" Procedures Handbook. The Work Plan will include development of a site health and safety plan, a community air monitoring plan, an emergency contingency plan, and quality assurance and quality control plan. The Remedial Design Work Plan will also include a summary of all site preparation activities, facility demolition plans, asbestos abatement and monitoring plans, waste disposal and processing plans, excavation/source removal plans, confirmatory sampling plans, decontamination plans, waste management and handling plans, restoration plans, and a project schedule. If bidding is required, bidding documents will be provided to the NYSDEC for review and comment.

After demolition and developed as a separate submittal, a Design Phase Investigation Work Plan will be developed to specify areas of the Site that warrant additional site characterization as a result of buildings and other structures (e.g., tunnels, on-site utilities) previously preventing or

restricting site characterization. The Work Plan will be developed in accordance with the NYSDEC Municipal Assistance Environmental Restoration Projects "Brownfield Program" Procedures Handbook, and will identify proposed sampling locations based on observations and field instrument and laboratory data. The Work Plan will identify the rationale for each sampling location, the suspected constituents of concern, the proposed sampling procedures and methodology, the number and type of proposed samples, and the proposed laboratory analytical program. The Work Plan will be submitted to the NYSDEC for review and comment prior to initiating the work.

A Design Phase Investigation Report will be prepared in accordance with the Municipal Assistance Environmental Restoration Projects "Brownfield Program" Procedures Handbook. The Report will describe the areal and vertical extent and distribution of contaminants detected, the hydrogeologic conditions, and discuss the potential for contaminants to impact future users and owners of both on-site and off-site properties. The report will also include a detailed evaluation of possible remedial alternatives (including IRM's), their effectiveness, and cleanup costs.

At this time, in-situ remedial systems are not anticipated as part of the final remedy of the Site. It is possible that monitored natural attenuation may be part of the final remedy, and that and sub-slab vapor mitigation system will be installed at the time of redevelopment. An Operation, Maintenance and Monitoring Plan (OM&M Plan) will be developed specifying post-remediation monitoring requirements. The OM&M Plan may include a post-remediation groundwater monitoring network sampling plan, and a sub-slab vapor mitigation sampling and an annual certification plan.

D. Citizen Participation Plan

A Citizen Participation Plan (CPP) will be developed in accordance with ECL 56-0505.2, and will be submitted to the NYSDEC for approval prior to the commencement of any investigation or remediation activities. Electronic copies of pertinent documents, including the CPP, will be posted to the City of Rochester DEQ website: http://www.cityofrochester.gov/des/deq.cfm.

2. Current and Proposed Future Use of the Site

The former Photech site is approximately 12.5 acres of land and is located in an M-1 (Industrial) Zoning District in the City of Rochester. The Site currently consists of one tax map parcel owned by the City of Rochester. The Site is located in an industrial sector of the City of Rochester. Holleder Industrial Park is located to the north and west of the Photech Site, and this industrial park contains, warehouses, manufacturing, and offices. A trucking terminal is located to the east, and several manufacturing facilities are located to the northeast. A large automobile part manufacturing facility is located off-site south of the Photech Site across Driving Park Avenue. The only contagious adjacent property which is not identified as having an industrial or commercial use is the LaGrange Avenue Recreation Center which is operated by the City of Rochester and which borders a portion of the former Photech Site to the northeast.

The City of Rochester has a shortage of large tracks (greater then two acres) of undeveloped and vacant industrial land. Given this shortage and the M-1 Zoning District, and it is anticipated that the Site will be redeveloped as an industrial park containing two or more subdivided parcels. In Rochester, environmental assessment and cleanup projects have created the stimuli for subsequent private sector investment and development. The redevelopment of the former Photech Street site for commercial use would put the property back on the City tax roles and could potentially create numerous employment opportunities for the area. Assuming that new buildings occupy between nine and 10 acres (approximately 72 to 80%) and 20 new jobs per acre would be created, it is possible that the Photech Site may result in the creation of 180 to 200 new jobs.

3. Estimated Project Cost

A. Estimated Project Budget

Now that the ROD for the Photech Site has been issued by the NYSDEC, the City is eligible to apply for a 1996 Bond Act grant for the design, demolition, and cleanup of the Photech Site. At the request of the City, DAY submitted a cost estimate in April 2006 to design and implement a remedial cleanup project in accordance with the ROD. A copy of the DAY proposal is attached.

DAY estimated total remediation costs at $4,506,875. The NYSDEC Clean Air/Clean Water Bond Act program reimburses the City's 50% for asbestos abatement and building demolition, and 90% for all other remedial work (e.g., soil and groundwater remediation, silver recovery system removal, engineering and institutional controls, etc.).

Based on the DAY cost estimate, the City's estimated cost share is approximately $1,404,896, and the remedial phase grant is estimated to be approximately $3,101,979. The City has entered into a State Assistance Contract (SAC) with the New York State Department of Environmental Conservation (NYSDEC) for the Site Investigation. A new SAC will be executed for the cleanup of the Photech Site.

If Bond Act funding is obtained, a formal technical proposal detailing the all fieldwork activities, procedures, analytical programs, proposed sampling locations, scope of remedial measures, and a detailed breakdown of costs will be submitted to the NYSDEC as an addendum.

B. Other Funding Sources or Potential Funding Sources for the Project

The documented liabilities and potentially significant environmental remediation costs have discouraged private developers from purchasing and developing the Site. The City is not aware of any potential private funding sources for the Photech site cleanup project.

In December 2006 the City submitted for a proposal for a $200,000 USEPA Brownfield Cleanup Grant. As of April 2007 the City's application is still under review by the USEAP. The City is not aware of any other potential funding sources for the Site.

As a result of emergency response actions subsequent to Photech Imaging Systems shut down of all plant operations and their abandoned the Site, the USEPA incurred costs to remove abandoned chemicals, waste materials, and other hazardous substances. The City acquired the Site via foreclosure in 1977, and the City provided documents and cooperated with previous inquiries from USEPA Office of Inspector General. In 1977 $50,000 "ability to pay" settlement was also reached with W. Daniel Johnson, a prior owner of the Photech facility. According to the USEPA's Office of Inspector General Semiannual Report to the Congress dated April 1, 2000 through September 30, 2000, the USEPA filed a civil suit on April 28, 2000 against Mr. Robert Book to recoup $577,113 in cleanup costs. An agreement was reached with Robert H. Book, a former chairman and consultant to Photech , to pay a $10,000 civil settlement penalty.

4. Project Satisfaction of ECL 56-0505 Criteria

A. Benefit to the Environment

Previous studies have already confirmed that past manufacturing operations at the Site have contaminated surface and subsurface resources, including on-site groundwater, with various other chemicals known to have been used on the Site.

The proposed grant will provide funding to significantly reduce the environmental and health threats associated with site contamination issues by removing sources of soil and groundwater contamination, major areas of soil contamination, and by reducing groundwater contamination. The City of Rochester will use a combination of integrated techniques to reduce and eliminate potential threats from existing contamination as well as any residual contamination that may be present after cleanup is completed. The Site remedy, approved by the NYSDEC in March 2006, addresses the threats to public health and the environment identified during the SI/RA. Reduction in public health and environmental threats from, including site contaminants that are classified as carcinogens, will be accomplished by development of an NYSDEC approved remedial work plan design program, removal of the waste water and silver recovery system, excavation and off-site disposal of an estimated 15,800 tons of soil and fill materials contaminated with heavy metals and semi-VOCs (PAHs), development of a site management plan, imposition of a NYSDEC environmental easement, implementation of institutional and engineering controls, and implementation of a long-term groundwater monitoring plan. According to the March 2006 NYSDEC Record of Decision, "the New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health." Prior to implementing the proposed EPA grant funded cleanup, the City will also significantly reduce threats to public health and environment through asbestos abatement, building and equipment decontamination, and building demolition. The demolition and subsequent environmental cleanup phase will also remove public health threats by eliminating the potential exposures to police, fire, public works and utility workers that have periodically needed to respond to site issues.

In summary, project funding will provide needed resources for the remediation and mitigation of existing and potential environmental, health and safety hazards associated with former operations at the Site remediation of natural resources critical to redevelopment of the area.

B. Economic Benefit to the State

The cleanup of the Site would continue the City's revitalization efforts that are already underway in the area, by facilitating redevelopment and reuse of existing infrastructure. Investigation and cleanup of the site would create numerous temporary construction jobs, as well as new permanent employment opportunities as redevelopment of the Site occurs.

The cleanup grant will contribute to increases in the property value of the Site and of nearby properties. Because the Site was several years tax delinquent and has been in City ownership since 1997, cleanup and subsequent private redevelopment of the Site will clearly result in

increased property taxes and increased assessed valuation. The proposed cleanup grant and project will likely also contribute to increases in the property value of nearby properties. Experience with other completed brownfield cleanup projects in Rochester indicates that higher valuations and greater investment interest that occur after cleanup lead to stability in the affected neighborhood and community. This is particularly so once the site redevelopment is complete. The City's most recent brownfield cleanup and industrial redevelopment of a site similar to the Photech site resulted in more than $14 million in initial investment for new construction and the retention and creation of hundreds of jobs. Estimates for the potential new investment in the redevelopment of the Photech site range from $10 to $20 million. Assuming that new buildings occupy between nine and 10 acres and 20 new jobs per acre would be created, it is possible that the Photech Site may result in the creation of 180 to 200 new jobs depending on the nature of the redevelopment. The cleanup and redevelopment of the Site will create both construction phase and permanent jobs.

C. Potential Public Recreational Use

Since the Site is located in an area of the City Zoned as M-1 (manufacturing), public recreational use is not an anticipated end use for the Site.

It should be noted that one of the properties located contagious to the Photech Site is an existing City recreation center. Also, due to the presence of federally designated wetlands on the Site and other storm water management issues, it is also possible that some portions of the Site could become dedicated "greenspace" during redevelopment.

D. Located in a Brownfield Opportunity Area

At present, the Site is not located in a designated Brownfield Opportunity Area (BOA).

5. Project Schedule

A Preliminary Remedial Project Schedule is attached. It is anticipated that the project will commence within six (6) months of the authorization to proceed (i.e., approval of application and SAC). According to the Preliminary Remedial Schedule, the following tentative schedule is provided below:

Phase I ..... **36 to 68 Weeks**
- Building Decommissioning work plan, HASP, CAMP, and CPP
- Asbestos abatement, liquids and building equipment removal and disposal, building demolition, and preliminary building footprint investigation
- Reporting

Phase II ..... **28 to 40 Weeks**
- Design-phase investigation work plan
- Field activities and analytical laboratory testing
- Reporting

Phase III ..... **32 to 52 Weeks**
- Site remediation work plan, institutional controls
- Removal of system components from Silver Recovery Vault Area

- Removal and disposal of impacted soil (Silver Recovery Vault Area, Area East of-Chemical Lab Building #11, Eastern Portion of Site, and Miscellaneous Areas) and confirmatory sampling and laboratory analysis
- Site backfilling, grading, and restoration
- Reporting

Phase IV ..... **64 to 276 Weeks**

- Operation and maintenance plan
- Up to 5-year groundwater monitoring program, possibly other O&M,
- Reporting

TOTAL PROJECT SCHEDULE = 160 to 436 Weeks

Tasks I, II, and III consist of demolition, abatement, interim remedial measures and other corrective actions. Based on the preliminary remedial schedule, tasks I, II, and III will require approximately 96 to160 weeks to complete. Task IV consisting of operation, maintenance, and monitoring will require an additional 64 to 276 weeks to complete. The total estimate time from authorization to proceed to completion of all work is estimated at 160 to 436 weeks.

II. Site's Environmental History

1. Environmental Data

A. Phase I Environmental Site Assessment (ESA)

A Phase I Environmental Site Assessment (ESA) of the former Photech Site was completed and included in the January 2006 Remedial Investigation/Remedial Alternatives report prepared by Day Environmental, Inc. The SI/RA report (and Phase I ESA report) were previously submitted to the NYSDEC.

B. Other Environmental Reports

The City of Rochester's Division of Environmental Quality (DEQ) has completed a Site Investigation/Remedial Alternatives (SI/RA) project in accordance with the 1996 New York State Clean Water Clean Air Bond Act Title 5 program at the former Photech Site. The SI/RA report dated January 2006 was prepared by Day Environmental, Inc. on behalf of the City, and contains detailed information regarding all contaminants detected on the Site. The 2006 SI/RA report identified six major areas of concern. Primary contaminants in these areas include semi-volatile organic compounds (SVOC's) particularly carcinogenic polycyclic aromatic hydrocarbons (PAHs) and heavy metals. SVOC's identified in soils are benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenzo(a,h)anthracene. Metals of concern identified at the site include: cadmium, chromium, lead, nickel, selenium, silver, and zinc. Groundwater contained metals and SVOCs at concentrations above groundwater standards and guidance values, and relatively low levels of volatile organic compounds (VOCs) were detected in soils and groundwater. No significant source of VOCs was detected on-site, and contaminants do not appear to be migrating off-site.

The New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) for the Photech site in March 2006. The ROD documented the environmental conditions and proposed remedial alternatives to address environmental contamination in the existing buildings and related process equipment, and contamination in soil, sediments, and groundwater.

2. Previous Owners of Site

Listed below is a list of previous owners of the Site based on a review of title deed information provided by the City of Rochester Map and Surveys:

	Former Owner Name	Last Known Address/Phone No.	Contractual Relationship to City of Rochester
a.	Kryptar Corporation	Unknown	None
b.	Anken Industries [(1)] (Fomerly Anken Chemical & Film Corportation)	Unknown [(1)]	None
c.	Bell & Howell Company[(2)]	760 South Wolf Road [(2)] Wheeling, IL 60090 Phone: 847-675-7600	None
d.	Rhone-Poulenc, Inc[(3)]	174, avenue de France [(3)] 75013 Paris, France	None
e.	Photech Imaging Systems, Inc. [(4)]	Unknown [(4)]	None
f.	COMIDA - Photech Imaging [(4)] Systems, Inc.	Photech: Unknown [(4)] COMIDA: CityPlace, Suite 8100, 50 West Main Street Rochester, NY 14614 Phone:585-753-2022	None

Footnotes:

(1); According to CorporateAffiliations.com (http://www.corporateaffiliations.com) Anken Industries acquired by & merged into Rhone-Poulenc Systems Co. In January 1999, Rhône-Poulenc merged with Hoechst AG to form Aventis. In 2004, Aventis merged with Sanofi-Synthélabo to form Sanofi-Aventis.

(2): According to Wikipedia (http://en.wikipedia.org) Bell & Howell Company merged with Böwe Systec Inc in 2003 to become Böwe Bell & Howell, and the firm is currently headquartered in Wheeling, Illinois.

(3) According to Wikipedia (http://en.wikipedia.org), in January 1999, Rhône-Poulenc merged with Hoechst AG to form Aventis. In 2004, Aventis merged with Sanofi-Synthélabo to form Sanofi-Aventis.

(4) Photech Imaging System, Inc. ceased plant operations in 1990. The Site was acquired by the City of Rochester via a tax foreclosure deed in 1997.

3. Previous Operators of Site

Previous operators of the former Photech Site appears to be the same as the previous owners of the Site. Listed below is a list of previous operators of the Site based on a review of limited public information:

	Former Owner Name	Last Known Address/Phone No.	Contractual Relationship to City of Rochester
a.	Kryptar Corporation	Unknown	None
b.	Anken Industries [1] (Fomerly Anken Chemical & Film Corportation)	Unknown [1]	None
c.	Bell & Howell Company[2]	760 South Wolf Road [2] Wheeling, IL 60090 Phone: 847-675-7600	None
d.	Rhone-Poulenc, Inc[3]	174, avenue de France [3] 75013 Paris, France	None
e.	Photech Imaging Systems, Inc. [4]	Unknown [4]	None
f.	COMIDA - Photech Imaging [4] Systems, Inc.	Photech: Unknown [4] COMIDA: CityPlace, Suite 8100, 50 West Main Street Rochester, NY 14614 Phone:585-753-2022	None

Footnotes:

(1); According to CorporateAffiliations.com (http://www.corporateaffiliations.com) Anken Industries acquired by & merged into Rhone-Poulenc Systems Co. In January 1999, Rhône-Poulenc merged with Hoechst AG to form Aventis. In 2004, Aventis merged with Sanofi-Synthélabo to form Sanofi-Aventis.

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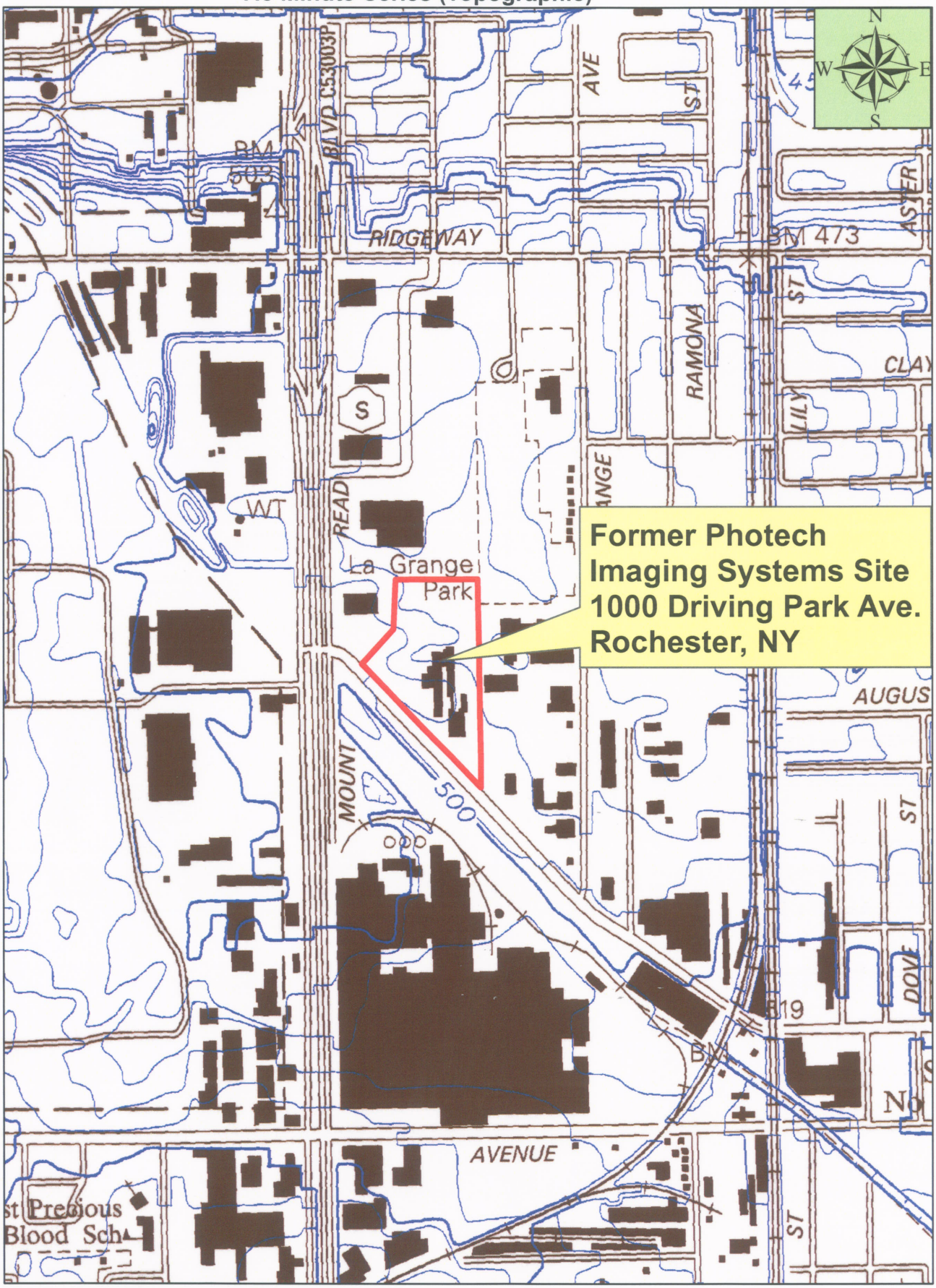
(4) Photech Imaging System, Inc. ceased plant operations in 1990. The Site was acquired by the City of Rochester via a tax foreclosure deed in 1997.

Figures

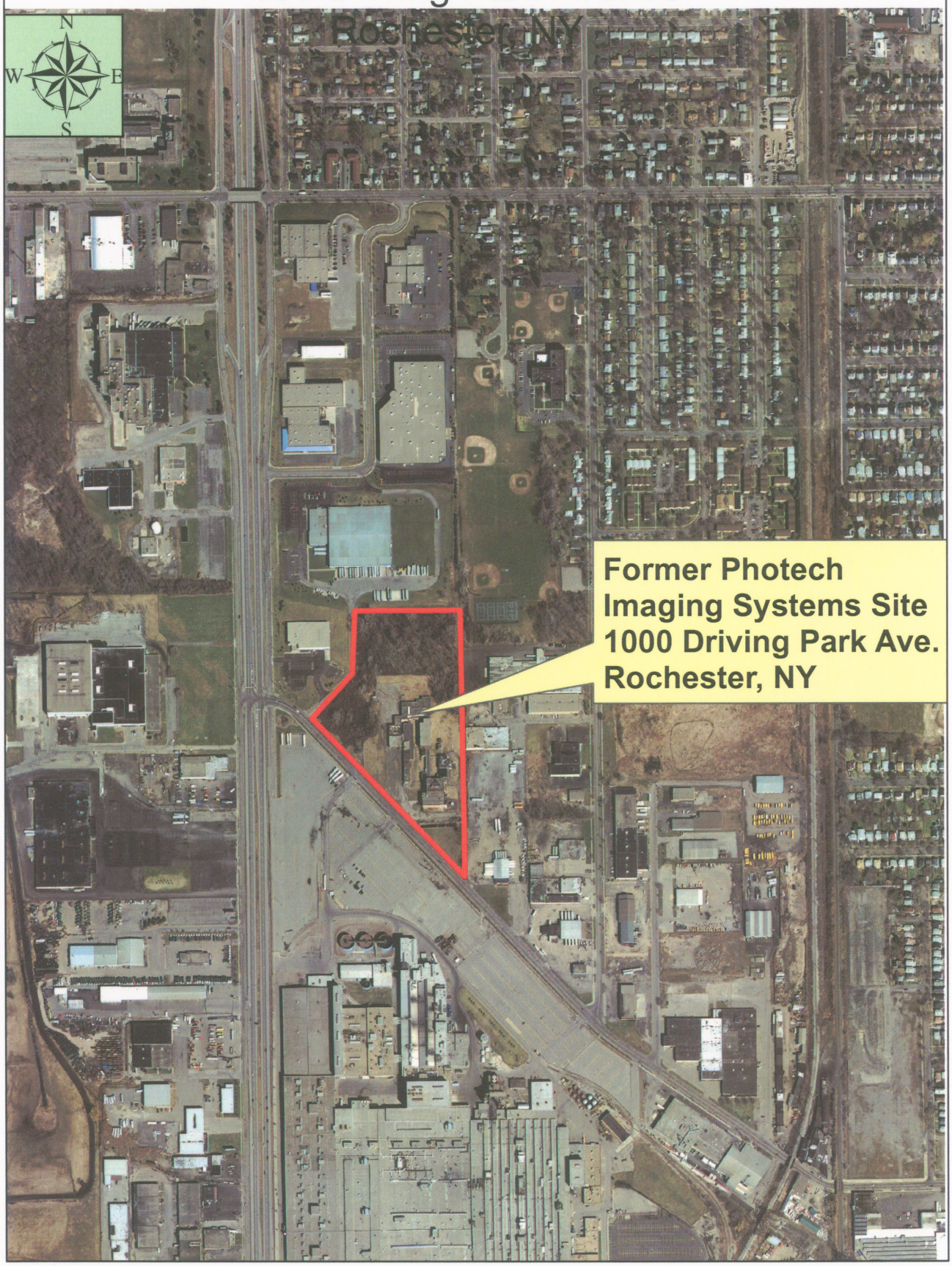
USGS Rochester West Quadrangle

New York - Monroe Co.

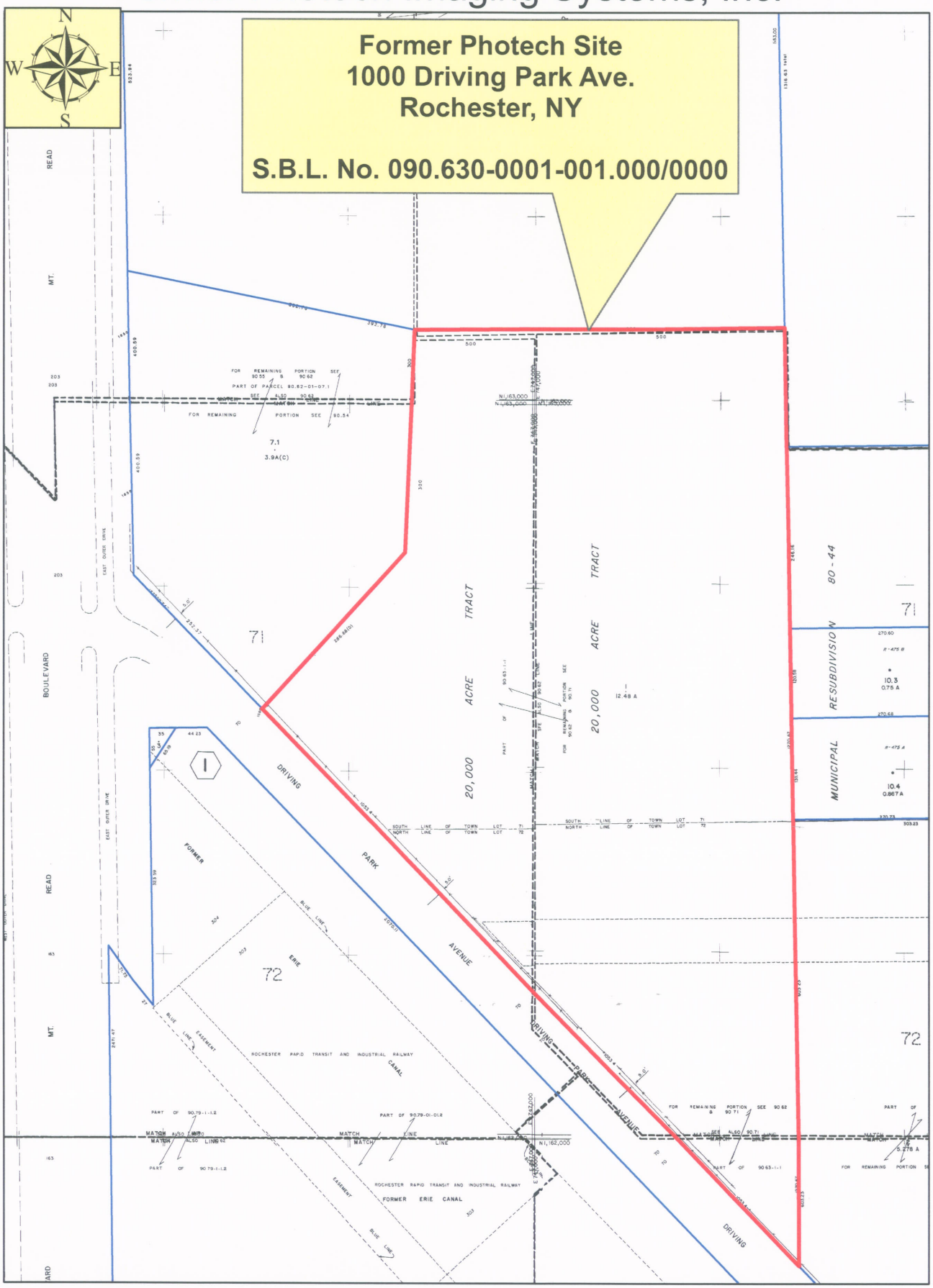
7.5 Minute Series (Topographic)



Site Location Map
Former Photech Imaging Systems, Inc.
1000 Driving Park Avenue



Tax Map
Former Photech Imaging Systems, Inc.



SCALE 1" = 50'

0 50 100

Grid North

REFERENCE:

Liber 6964 Of Deeds, Page 248
Liber 7667 Of Deeds, Page 345
Liber 8903 Of Deeds, Page 379

NOTE: No Abstract of title provided, property may be subject to additional easements or restrictions an updated abstract of title may disclose

LICENSED LAND SURVEYOR
JAMES M. PARKER
No. 49302
STATE OF NEW YORK

I hereby certify that this map was completed on August 8, 2006 from the notes of an instrument survey

James M. Parker L.S. 49302

Now Or Formerly
City Of Rochester
Tax Account No. 90.55 - 1 - 1.4
435 LaCrange Avenue

Now Or Formerly
COMDA – Moore Muffler & Brake
Tax Account No 90.55 - 1 - 29.3
200 Hollender Parkway

Bearings Per Liber Deeds
Liber 7667 Of Deeds, Page 123

N 88°-56'-31" E
300.00'

Now Or Formerly
Shahrokh S. & Delia Hakim
Tax Account No. 90.63 - 1 - 4.1
233 LaCrange Avenue

Now Or Formerly
TSON Associates
Tax Account No. 90.63 - 1 - 10.3
211 LaCrange Avenue

Now Or Formerly
Dorsey Family LLC
Tax Account No. 90.63 - 1 - 10.4
205 LaCrange Avenue

Now Or Formerly
City Of Rochester
Tax Account No. 90.63 - 1 - 1
1000 Driving Park Avenue

Area = 543,663 Sq. Ft.
12.481 Acres

Liber Deeds
Liber 7667 Of Deeds, Page 31

S 1°-00'-11" E
1170.67'

Edge Of Woods & Brush

Brick Block & Stucco Buildings
No. 1000

Now Or Formerly
William Finnerty
Tax Account No. 90.71 - 1 - 2
970 Driving Park Avenue

300.00'
N 1°-00'-11" W

Now Or Formerly
JDM Properties, LLC
Tax Account No. 90.62 - 1 - 7
1850 Mt. Read Boulevard

N 46°-30'-54" E
286.68'

Edge Of Woods & Brush

252.37' To Mt. Read Boulevard

1053.40'
N 43°-29'-06" W

DRIVING PARK (70') AVENUE

MAP OF A SURVEY

Being Part Of Lots 71 & 72, 20,000 Acre Tract
Township 1, Short Range, Mill Seat Tract
Phelps And Gorham Purchase

CITY OF ROCHESTER
MONROE COUNTY NEW YORK

Scale: 1' = 50' August 8, 2006

James M. Parker
Land Surveyor
1162 Telephone Road
Rush, New York 14543

Municipal Authorization

City of Rochester

City Clerks Office

Certified Ordinance

Rochester, N.Y., _____

TO WHOM IT MAY CONCERN:

I hereby certify that the following is a true copy of an ordinance which was duly passed by the Council of the City of Rochester on **June 20, 2006** and **Approved** by the Mayor of the City of Rochester, and was deemed duly adopted on **June 24, 2006** in accordance with the applicable provisions of law.

Ordinance No. 2006-150

Authorizing 1996 Clean Water/Clean Air Bond Act Applications And Agreements With The New York State Department Of Environmental Conservation

WHEREAS, the City of Rochester, after thorough consideration of the various aspects of the problem and study of available data, has hereby determined that certain work, as described in its application and attachments, herein called the "Project", is desirable, is in the public interest, and is required in order to implement the Project; and

WHEREAS, Article 56 of the Environmental Conservation Law authorizes State assistance to municipalities for environmental restoration projects by means of a contract and the City deems it to be in the public interest and benefit under this law to enter into a contract herewith;

NOW, THEREFORE, BE IT ORDAINED, by the Council of the City of Rochester as follows:

Section 1. The Mayor is hereby authorized to submit an application to and enter into an agreement with the New York State Department of Environmental Conservation for such grants that may be available under the 1996 Clean Water/Clean Air Bond Act. Upon execution of the initial Grant agreement, the Manager of the Division of Environmental Quality is hereby authorized to act on behalf of the City in all matters relating to State assistance under Article 56, Title 5, of the Environmental Conservation Law, including but not limited to making applications, executing agreements, submitting Project documentation and otherwise acting for the City in all matters relating to the Project and State assistance. The City agrees that it will fund its portion of the cost of the Project and that funds will be available to initiate the Project's field work within 12 months of written approval of its application by the Department of Environmental Conservation.

Section 2. A certified copy of this ordinance shall be sent to the Albany office of the New York State Department of Environmental Conservation together with the application for State assistance.

Section 3. The applications and agreements shall contain such additional terms and conditions as the Mayor and/or Manager deem to be appropriate.

Section 4. This ordinance shall take effect immediately.

Passed by the following vote:

Ayes - President Giess, Councilmembers Conklin, Douglas, Lightfoot, McFadden, Miller, Pritchard, Santiago, Stevenson - 9.

Nays - None - 0.

Attest _____

City Clerk

Attorney Certification of Proof of Ownership

City of Rochester

TDD/Voice 232-3260 **Department of Law** City Hall Room 400-A
30 Church Street
Rochester, New York 14614-1295

Scott C. Smith, Municipal Attorney
(585) 428-6761

Fax: (585) 428-6950
(Not For Service)

December 20, 2006

Division of Environmental Remediation
New York State Department of Environmental Conservation
50 Wolf Rd.
Albany, NY 12233-7010

Re: City of Rochester Application 1000 Driving Park Ave., Rochester, NY

Dear Sir or Madam,

Regarding the City of Rochester's "1996 Clean Water/Clean Air Bond Act Environmental Restoration Project - Title 5" application related to this property, transmitted to you by Mark Gregor, Manager, Division of Environmental Quality.

I can confirm that the property that is the subject of above application, 1000 Driving Park Avenue, SBL #90.63-1-1 is the same property to which the City acquired title by a Tax Foreclosure Deed dated August 7, 1997, from Linda S. Kingsley, Corporation Counsel, recorded in the Monroe County Clerk's Office on August 11, 1997, in L 8903 of Deeds, p. 379 (copy annexed).

Please contact me if you have further questions about the subject property.

Very truly yours,

Scott C. Smith
Municipal Attorney

SCS/
Enc.
cc: Vicki Brawn, Division of Environmental Quality

EEO Employer/Handicapped

Title Insurance,
Legal Description
&
Deed

Owner's Policy of Title Insurance

Fidelity National Title Insurance Company
A Stock Company

Policy Number NY2210-10-FT-27682-2006.27106-72252802

OWNER'S POLICY OF TITLE INSURANCE

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS FROM COVERAGE CONTAINED IN SCHEDULE B AND THE CONDITIONS AND STIPULATIONS, FIDELITY NATIONAL TITLE INSURANCE COMPANY, a California corporation, herein called the Company, insures, as of Date of Policy shown in Schedule A, against loss or damage, not exceeding the Amount of Insurance stated in Schedule A, sustained or incurred by the insured by reason of:

1. *Title to the estate or interest described in Schedule A being vested other than as stated therein;*
2. *Any defect in or lien or encumbrance on the title;*
3. *Unmarketablility of the title;*
4. *Lack of a right of access to and from the land.*

The Company will also pay the costs, attorneys' fees and expenses incurred in defense of the title, as insured, but only to the extent provided in the Conditions and Stipulations.

IN WITNESS WHEREOF, FIDELITY NATIONAL TITLE INSURANCE COMPANY has caused this policy to be signed and sealed by its duly authorized officers as of Date of Policy shown in Schedule A.

NY2210 FT-27682
Independent Title Service, L.L.C.
99 Ridgeland Road
Rochester, NY 14623
Tel:(585) 424-3750
Fax:(585) 424-3775

FIDELITY NATIONAL TITLE INSURANCE COMPANY

SEAL

By: _____ President

ATTEST _____ Secretary

Countersigned: _____
Authorized Signature
(Please print name below)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land had been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained in the insured claimant had paid value for the estate or interest insured by this policy
4. Any claim which arises out of the transaction vesting in the Insured the estate or interest by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
   (a) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
   (b) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
      (i) to timely record the instrument of transfer; or
      (ii) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

CONDITIONS AND STIPULATIONS

1. DEFINITIONS OF TERMS

The following terms when used in this policy mean:

(a) "insured": the insured named in Schedule A, and, subject to any rights or defenses the company would have had against the named insured, those who succeed to the interest of the named insured by operation of law as distinguished from purchase including, but not limited to, heirs, distributes, devisees, survivors, personal representatives, next of kin, or corporate or fiduciary successors.

(b) "insured claimant": any insured claiming loss or damage.

(c) "knowledge" or "known": actual knowledge, not constructive knowledge or notice which may be imputed to an insured by reason of the public records as defined in this policy or any other records which impart constructive notice of matters affecting the land.

(d) "land": the land described or referred to in Schedule A, and improvements affixed thereto which by law constitute real property. The term "land" does not include any property beyond the lines of the area described or referred to in Schedule A, nor any right, title, interest, estate or easement in abutting streets, roads, avenues, alleys, lanes, ways or waterways, but nothing herein shall modify or limit the extent to which a right of access to and from the land is insured by this policy.

(e) "mortgage": mortgage, deed of trust, trust deed, or other security instrument.

(f) "public records": records established under state statutes at Date of Policy for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without knowledge. With respect to Section 1(a)(iv) of the Exclusions From Coverage, "public records" shall also include environmental protection liens in the records of the clerk of the United States district court for the district in which the land is located.

(g) "unmarketability of the title": an alleged or apparent matter affecting the title to the land, not excluded or excepted from coverage, which would entitle a purchaser of the estate or interest described in Schedule A or the insured mortgage to be released from the obligation to purchase by virtue of a contractual condition requiring the delivery of marketable title.

2. CONTINUATION OF INSURANCE AFTER CONVEYANCE OF TITLE

The coverage of this policy shall continue in force as of Date of Policy in favor of an insured only so long as the insured retains an estate or interest in the land, or holds an indebtedness secured by a purchase money mortgage given by a purchaser from the insured, or only so long as the insured shall have liability by reason of covenants of warranty made by the insured in any transfer conveyance of the estate or interest. This policy shall not continue in force in favor of any purchaser from the insured of either (i) an estate or interest in the land, or (ii) an indebtedness secured by a purchase money mortgage given to the insured.

3. NOTICE OF CLAIM TO BE GIVEN BY INSURED CLAIMANT

The insured shall notify the Company promptly in writing (i) in case of any litigation as set forth in Section 4(a) below, (ii) in case knowledge shall come to an insured hereunder of any claim of title or interest which is adverse to the title to the estate or interest, as insured, and which might cause loss or damage for which the company may be liable by virtue of this policy, or (ii) if title to the estate or interest, as insured, is rejected as unmarketable. If prompt notice shall not be given to the company, then as to the insured all liability of the Company shall terminate with regard to the matter or matters for which prompt notice is required; provided, however, that failure to notify the Company shall in no case prejudice the rights of any insured under this policy unless the Company shall be prejudiced by the failure and then only to the extent of the prejudice.

4. DEFENSE AND PROSECUTION OF ACTIONS: DUTY OF INSURED CLAIMANT TO COOPERATE

(a) Upon written request by the insured and subject to the options contained in Section 6 of these Conditions and Stipulations, the Company, at its own cost and without unreasonable delay, shall provide for the defense of an insured in litigation in which any third party asserts a claim adverse to the title or interest as insured, but only as to those stated causes of action alleging a defect, lien or encumbrance or other matter insured against by this policy. The Company shall have the right to select counsel of its choice (subject to the right of the insured to object for reasonable cause) to represent the insured as to those stated causes of action and shall not be liable for and will not pay the fees of any other counsel. The Company will not pay any fees, cost or expenses incurred by the insured in the defense of those causes of action which allege matters not insured against by this policy.

(b) The Company shall have the right, at its own cost, to institute and prosecute any action or proceeding or to do any other act which in its opinion may be necessary or desirable to establish the title to the estate or interest, as insured, or to prevent or reduce loss or damage to the insured. The Company may take any appropriate action under the term of this policy, whether or not it shall be liable hereunder, and shall not thereby concede liability or waive any provision of this policy. If the Company shall exercise its rights under this paragraph, it shall do so diligently.

(c) Whenever the Company shall have brought an action or interposed a defense as required or permitted by the provisions of this policy, the company may pursue any litigation to final determination by a court of competent jurisdiction and expressly reserves the right, in its sole discretion, to appeal from any adverse judgment or order.

(d) In all cases where this policy permits or requires the Company to prosecute or provide for the defense of any action or proceeding, the insured shall secure to the Company the right to so prosecute or provide defense in the action or proceeding, and all appeals therein, and permit the Company to use, at its option, the name of the insured for this purpose. Whenever requested by the Company, the insured, at the Company's expense, shall give the Company all reasonable aid (i) in any action or proceeding, securing evidence, obtaining witnesses, prosecuting or defending the action or proceeding , or effecting settlement, and (ii) in any other lawful act which I the opinion of the Company may be necessary or desirable to establish the title to the estate or interest, as insured. If the Company is prejudiced by the failure of the insured under the policy shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation, with regard to the matter or matters requiring such cooperation.

Fidelity National Title Insurance Company
OF NEW YORK

File No. FT-27682

Policy No. 27106-72252802

SCHEDULE A

Date of Policy August 11, 1997

Amount of Insurance $35,000.00

1. Name of Insured: New York State Dept. of Environmental Conservation and The City of Rochester

2. The estate or interest in the land which is covered by this policy is: FEE SIMPLE

3. Title to the estate or interest in the land is vested in: New York State Dept. of Environmental Conservation and The City of Rochester

The City of Rochester who acquired title from Linda S. Kingsley, as Corporation Counsel of The City of Rochester by a Tax Foreclosure Deed dated August 7, 1997 and recorded August 11, 1997 in Liber 8903 of Deeds, page 379 in the Office of the Clerk of Monroe County.

4. The land referred to in this policy is described as follows:

See "Schedule A - Description of Insured Premises"

Countersigned:
Independent Title Agency, LLC

By _____
Authorized Signatory

Lynne A. Whitman
PRINT NAME HERE

File No. FT-27682

Policy No. 27106-72252802

SCHEDULE A - DESCRIPTION OF INSURED PREMISES

All that tract or parcel of land, situate in the City of Rochester, County of Monroe and State of New York, bounded and described as follows:

Beginning at a point in the north ROW line of Driving Park Avenue on the east line of premises conveyed to Bell & Howell Company by Trustee's Deed dated March 29, 1949 and recorded the same day in Monroe County Clerk's Office in Liber 2539 of Deeds, page 51 which point is 1305.77 feet southeasterly from the intersection of the north line of Driving Park Avenue and the east line of Mt. Read Boulevard; thence

(1) north along the east line of said Bell & Howell Company's land, a distance of 1270.67 feet to a point; thence

(2) west at an included angle of 89°58'42" with the said east line of the lands conveyed to Bell & Howell Company a distance of 500 feet to a point; thence

(3) south on a line parallel with the said east line of the Bell & Howell property a distance of 300 feet to a point; thence

(4) southwesterly at an included angle with course (3) of 227°31'05" on a line which intersects the northerly line of Driving Park Avenue at a right angle, for a distance of approximately 286.68 feet to the north ROW line of Driving Park Avenue; thence

SCHEDULE A - DESCRIPTION OF INSURED PREMISES

(5) southeasterly along the north ROW line of Driving Park Avenue, a distance of 1053.40 feet to the point and place of beginning.

Being a portion of the premises acquired by the said Bell & Howell Company by Trustee's Deed dated March 29, 1949, and recorded the same day in Monroe County Clerk's Office in Liber 2539 of Deeds at page 51 and consisting of 12.48 acres of land.

Fidelity National Title Insurance Company
OF NEW YORK

File No. FT-27682

Policy No. 27106-72252802

SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorney's fees or expenses) which arise by reason of:

1. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

2. Any encroachments, easements, measurements, variations in area or content, party walls or other facts which a correct survey of the premises would show.

3. Rights or claims of parties in possession.

4. Roads, ways, streams or easements, if any, not shown of record, riparian rights and the title to any filled-in lands.

5. Any state of facts an accurate survey would show and inspection of the premises would disclose.

6. Easement to Rochester Gas & Electric Corporation and Rochester Telephone Corporation dated November 15, 1988 and recorded November 29, 1988 in the Monroe County Clerk's Office in Liber 7506 of Deeds, page 31.

7. Easement to Rochester Pure Waters District dated March 22, 1989 and recorded March 28, 1989 in the Monroe County Clerk's Office in Liber 7595 of Deeds, page 123.

8. Subject to the reservations and conditions recited in deed recorded in Liber 2314 of Deeds, page 379.

Fidelity National Title Insurance Company
OF NEW YORK

STANDARD NEW YORK ENDORSEMENT

(OWNER'S POLICY)

Attached to and made part of Policy Number 27106-72252802
of FIDELITY NATIONAL TITLE INSURANCE COMPANY OF NEW YORK

1. The following is added to the insuring provisions on the face page of this policy:

   "5. Any statutory lien for services, labor or materials furnished prior to the date hereof, and which has now gained or which may hereafter gain priority over the estate or interest of the insured as shown in Schedule A of this policy."

2. The following is added to Paragraph 7 of the Conditions and Stipulations of the policy:

   "(d) If the recording date of the instruments creating the insured interest is later than the policy date, such policy shall also cover intervening liens or encumbrances, except real estate taxes, assessments, water charges and sewer rents."

Nothing herein contained shall be construed as extending or changing the effective date of the policy unless otherwise expressly stated.

This endorsement, when countersigned below by a validating signatory, is made a part of the policy and is subject to the Exclusions from Coverage, Schedules, Conditions and Stipulations therein, except as modified by the provisions hereof.

Signed and sealed this day of August 11, 1997

Countersigned:
Independent Title Agency, LLC

By _____
Authorized Signatory

FORM 5/33-31-2 (5/93)

Fidelity National Title Insurance Company of New York

CORPORATE SEAL

BY _____
President

ATTEST Charles H. Wimer
Secretary

STANDARD NEW YORK ENDORSEMENT
FOR USE WITH ALTA OWNER'S POLICY (10-17-92)

5. PROOF OF LOSS OR DAMAGE

In addition to and after the notices required under Section 3 of these Conditions and Stipulations have been provided the company, a proof of loss or damage signed and sworn to by the insured claimant shall ascertain the facts giving rise to the loss or damage. The proof of loss or damage shall describe the defect in, or lien or encumbrance on the title, other matter insured against by this policy which constitutes the basis of loss or damage and shall state, to the extent possible, the basis of calculating the amount of the loss or damage. If the Company is prejudiced by the failure of the insured claimant to provide the required proof of loss or damage, the Company's obligations to the insure under the policy shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation, with regard to the matter or matters requiring such proof of loss or damage.

In addition, the insured claimant may reasonably be required to submit to examination under oath by an authorized representative of the Company and shall produce for examination, inspection and copying, at such reasonable times and places as may be designated by any authorized representative of the Company, all records, books, ledgers, checks, correspondence and memoranda, whether bearing a date before or after Date of Policy, which reasonably pertain to the loss or damage. Further, if requested by any authorized representative of the Company, all records, books, ledgers, checks, correspondence and memoranda, whether bearing a date before or after Date of Policy, which reasonably pertain to the loss or damage. Further, if requested by an authorized representative of the Company the insured claimant shall grant its permission, in writing, for any authorized representative of the Company to examine, inspect and copy all records, books, ledgers, checks, correspondence and memoranda in the custody or control of a third party, which reasonably pertain to the loss or damage. All information designated as confidential by the insured claimant provided to the Company pursuant to this Section shall not be disclosed to others unless, in the reasonable judgment of the Company, it is necessary in the administration of the claim. Failure of the insured claimant to submit for examination under oath, produce other reasonably requested information or grant permission to secure reasonably necessary information from third parties as required in this paragraph shall terminate any liability of the Company under this policy as to that claim.

6. OPTIONS TO PAY OR OTHERWISE SETTLE CLAIMS; TERMINATION OF LIABILITY

In case of a claim under this policy, the Company shall have the following additional options:

(a) To Pay or Tender Payment of the Amount of Insurance

(i) To pay or tender payment of the amount of insurance under this policy together with any costs, attorneys' fees and expenses incurred by the insured claimant, which were authorized by the Company, up to the time of payment or tender of payment and which the Company is obligated to pay.

(ii) Upon the exercise by the Company of this option, all liability and obligations to the insured under this policy, other than to make the payment required, shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation and the policy shall be surrendered to the Company for cancellation.

(b) To Pay or Otherwise Settle With Parties Other than the Insured or With the Insured Claimant

(i) to pay or otherwise settle with other parties for or in the name of an insured claimant any claim insured against under this policy, together with any costs, attorneys; fees and expenses incurred by the insured claimant which were authorized by the Company up to the time of payment and which the Company is obligated to pay; or

(ii) to pay or otherwise settle with the insured claimant the loss or damage provided for under this policy, together with any costs, attorneys' fees and expenses incurred by the insured claimant which were authorized by the Company up to the time of payment and which the company is obligated to pay. Upon the exercise by the Company of either of the options provided for in paragraphs b(i) or (ii), the Company's obligations to the insured under this policy for the claimed loss or damage, other than the payments required to be made, shall terminate, including any liability or obligation to defend, prosecute or continue any litigation.

7. DETERMINATION, EXTENT OF LIABILITY AND COINSURANCE

This policy is a contract of indemnity against actual monetary loss or damage sustained or incurred by the insured claimant who has suffered loss or damage by reason of matters insured against by this policy and only to the extent herein described.

(a) The liability of the Company under this policy shall not exceed the least of:

(i) the Amount of Insurance stated I Schedule A; or,

(ii) the difference between the value of the insured estate or interest as insured and the value of the insured estate or interest subject to the defect, lien or encumbrance insured against by this policy.

(b) In the event the Amount of Insurance stated in Schedule A at the Date of Policy is less than 80 percent of the value of the insured estate or interest or the full consideration paid for the land, whichever is less, or if subsequent to the Date of Policy an improvement is erected on the land which increases the value of the insured estate or interest by at least 20 percent over the Amount of Insurance stated in Schedule A, then this Policy is subject to the following:

(i) where no subsequent improvement has been made, as to any partial loss, the Company shall only pay the loss pro rata in the proportion that the amount of insurance at Date of Policy bears to the total value of the insured estate or interest at Date of Policy; or

(ii) where a subsequent improvement has been made, as to any partial loss, the Company shall only pay the loss pro rata in the proportion that 120 percent of the Amount of Insurance stated in Schedule A bears to the sum of the Amount of Insurance stated in Schedule A and the amount expended for the improvement. The provisions of this paragraph shall not apply to costs, attorneys' fees and expenses for which the Company is liable under this policy, and shall only apply to that portion of any loss which exceeds, in the aggregate, 10 percent of the Amount of Insurance stated in Schedule A.

(c) The Company will pay only those costs, attorneys' fees and expenses incurred in accordance with Section 4 of these Conditions and Stipulations.

8. APPORTIONMENT

If the land described in Schedule A consists of two or more parcels which are not used as a single site, and a loss is established affecting one or more of the parcels but not all, the loss shall be computed and settled on a pro rata basis as if the amount of insurance under this policy was divided pro rata as to the value on Date of Policy of each separate parcel to the whole, exclusive of any improvements made subsequent to Date of Policy, unless a liability or value has otherwise been agreed upon as to each parcel by the Company and the insured at the time of the issuance of this policy and shown by an express statement or by an endorsement attached to this policy.

9. LIMITATION OF LIABILITY

(a) If the Company establishes the title, or removes the alleged defect, lien or encumbrance, or cures the lack of a right of access to or from the land, or cures the claim of unmarketability of title, all as insured, in a reasonably diligent manner by any method, including litigation and the completion of any appeals therefrom, it shall have fully performed its obligations with respect to that matter and shall not be liable for any loss or damage caused thereby

(b) In the event of any litigation, including litigation by the Company or with the Company's consent, the Company shall have no liability for loss or damage until there has been a final determination by a court of competent jurisdiction, and disposition of all appeals therefrom, adverse to the title, as insured.

(c) The Company shall not be liable for loss or damage to any insured for liability voluntarily assumed by the insured in settling any claim or suit without the prior written consent of the Company.

10. REDUCTION OF INSURANCE; REDUCTION OR TERMINATION OF LIABILITY

All payments under this policy, except payments made for costs, attorneys' fees and expenses, shall reduce the amount of the insurance pro tanto.

11. LIABILITY NONCUMULATIVE

It is expressly understood that the amount of insurance under this policy shall be reduced by any amount the Company may pay under any policy insuring a mortgage to which exception is taken in Schedule B or to which the insured has agreed, assumed, or taken subject, or which is hereafter executed by an insured and which is a charge or lien on the estate or interest described or referred to in Schedule A, and the amount so paid shall be deemed a payment under this policy to the insured owner.

12. PAYMENT OF LOSS

(a) No payment shall be made without producing this policy for endorsement of the payment unless the policy has been lost or destroyed, in which case proof of loss or destruction shall be furnished to the satisfaction of the Company.

(b) When liability and the extent of loss or damage has been definitely fixed in accordance with these Conditions and Stipulations, the loss or damage shall be payable within 30 days thereafter.

13. SUBROGATION UPON PAYMENT OR SETTLEMENT

(a) The Company's Right of Subrogation.

Whenever the Company shall have settled and paid a claim under this policy, all right of subrogation shall vest in the Company unaffected by any act of the insured claimant.

The Company shall be subrogated to and be entitled to all rights and remedies which the insured claimant would have had against any person or property in respect to the claim had this policy not been issued. If requested by the Company the insured claimant shall transfer to the Company all rights and remedies against any person or property necessary to order to perfect this right of subrogation. The insured claimant shall permit the company to sue, compromise or settle in the name of the insured claimant and to use the name of the insured claimant in any transaction or litigation involving these rights or remedies.

If a payment on account of a claim does not fully cover the loss of the insured claimant, the Company shall be subrogated to these rights and remedies in the proportion which the Company's payment bears to the whole amount of the loss.

If loss should result from any act of the insured claimant, as stated above, that act shall not void this policy, but the Company, in that event, shall be required to pay only that part of any losses insured against by this policy which shall exceed the amount, if any, lost to the Company by reason of the impairment by the insured claimant of the Company's right of subrogation.

(b) **The Company's Rights Against Non-Insured Obligors.**

The Company's right of subrogation against non-insured obligors shall exist and shall include, without limitation, the rights of the insured to indemnities, guaranties, other policies of insurance or bonds, notwithstanding any terms or conditions contained in those instruments which provide for subrogation rights by reason of this policy.

14. ARBITRATION

Unless prohibited by applicable law, either the Company or the insured may demand arbitration pursuant to the Title Insurance Arbitration Rules of the American Arbitration Association. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the insured arising out of or relating to this policy, any service of the Company in connection with its issuance or the breach of a policy provision or other obligation. All arbitrable matters when the Amount of Insurance is $1,000,000 or less shall be arbitrated at the option of either the Company or the insured. All arbitrable matters when the Amount of Insurance is in excess of $1,000,000 shall be arbitrated only when agreed to by both the Company and the insured. Arbitration pursuant to this policy and under the Rules in effect on the date the demand for arbitration is made or, at the option of the insured, the Rules in effect at Date of Policy shall be binding upon the parties. The award may include attorneys' fees only if the laws of the state in which the land is located permit a court to award attorneys' fees to a prevailing party. Judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

The law of the situs of the land shall apply to an arbitration under the Title Insurance Arbitration Rules.

A copy of the Rules may be obtained from the Company upon Request.

15. LIABILITY LIMITED TO THIS POLICY; POLICY ENTIRE CONTRACT

(a) This policy together with all endorsements, if any, attached hereto by the Company is the entire policy and contract between the insured and the Company. In interpreting any provision of this policy, this policy shall be construed as a whole.

(b) Any claim of loss or damage, whether or not based on negligence, and which arises out of the status of the title to the estate or interest covered hereby or by any action asserting such claim, shall be restricted to this policy.

(c) No amendment of or endorsement to this policy can be made except by a writing endorsed hereon or attached hereto signed by either the President, a Vice President, the Secretary, an Assistant Secretary, or validating officer or authorized signatory of the Company.

16. SEVERABILITY

In the event any provision of the policy is held invalid or unenforceable under applicable law, the policy shall be deemed not to include that provision and all other provisions shall remain in full force and effect.

17. NOTICES, WHERE SENT

All notices required to be given the Company and any statement in writing required to be furnished the Company shall include the number of this policy and shall be addressed to the Company at Fidelity National Title Insurance Company, Claims Department, P.O. Box 45023, Jacksonville, Florida 32232-5023.

LEGAL DESCRIPTION OF
1000 DRIVING PARK AVENUE
T.A. #090.630-01-001

All that tract or parcel of land situate in the City of Rochester, County of Monroe, State of New York, more particularly bounded and described as follows:

Beginning at a point in the northerly ROW line of Driving Park Avenue, on the east line of lands conveyed to Bell & Howell Company by Trustees Deed, dated March 29, 1949 and filed in Liber 2539 of Deeds, Page 51, said point being 1305.77 feet southeasterly from the ROW intersection of said Driving Park Avenue and the easterly ROW line of Mt Read Boulevard, said point also being the Point or Place of Beginning; thence

1) Northerly, along said east line of Bell & Howell Company, a distance of 1270.67 feet to a point; thence
2) Westerly, at an included angle of 89°58'42", a distance of 500.00 feet to a point; thence
3) Southerly, on a line parallel with said east line of Bell & Howell Company, a distance of 300.00 feet to a point; thence
4) Southwesterly, at an included angle of 227°31'05", on a line that intersects the said northerly line of Driving Park Avenue at a 90° angle, a distance of 286.68 feet to the said northerly ROW line of Driving Park Avenue; thence
5) Southeasterly, along the said northerly ROW line of Driving Park Avenue, a distance of 1053.40 feet to the Point or Place of Beginning.

Subject to covenants, easements or restrictions of record, if any.

Being the same premises conveyed to the City of Rochester by a deed dated July 30, 1997 in Liber 8903 of Deeds, Page 379.

February 24, 2006
G:\DIV\MAPS\DESC\REGULAR\A-M\DRIVINGPARK1000.wpd

L8903 P 380

8-11-97

TAX FORECLOSURE DEED

Made this 7th day of August, 1997, between LINDA S. KINGSLEY, as Corporation Counsel of the City of Rochester, with offices at 400A City Hall, Rochester, New York 14614, grantor, and CITY OF ROCHESTER, a municipal corporation with offices at 30 Church Street, Rochester, New York 14614, grantee,

WITNESSETH:

WHEREAS, an action entitled "In the Matter of the Foreclosure of Tax Liens Pursuant to Title 4 of Part E of Article IX of the Charter of the City of Rochester - List of Delinquent Taxes as of July 1, 1996", Index No. 3430/97, was duly brought in Supreme Court, Monroe County, by the Corporation Counsel for the foreclosure of certain tax liens, by the due filing of a List of Delinquent Taxes in the office of the Monroe County Clerk on April 3, 1997, and due publication of public notice of foreclosure on April 3, 1997, and other subsequent dates, and due mailing thereof to owners and lienors of all property affected, and

WHEREAS, at a term of the said court held at the Hall of Justice, in the City of Rochester, New York on June 18, 1997, a Judgment was duly rendered, wherein it as adjudged, among other things, that the parcel listed on said Judgment be sold at public auction pursuant to Section 9-143 of the City Charter, and that the grantor, as Corporation Counsel of the City of Rochester, execute and deliver a deed for each parcel, conveying to the purchaser at the auction title to the parcel, and

WHEREAS, the said Judgment was duly entered in the Monroe County Clerk's Office on June 26, 1997, and

WHEREAS, a public auction was duly conducted by the City Treasurer on July 30, 1997, pursuant to the above-referenced Judgment, and the grantee submitted the highest responsible bid on the parcel or parcel of property listed below, and has duly paid the amount of such bid to the City Treasurer,

NOW, THEREFORE, the grantor, by virtue of and in pursuance of the aforesaid Judgment and the provisions of the Charter of the City of Rochester, does hereby grant and convey unto the grantee, the grantee's successors and assigns, a full and complete title in and to:

All that Tract or Parcel of Land, situate in the City of Rochester, County of Monroe, and State of New York, more particularly described as:

SBL NO.	ADDRESS	FORMER OWNER'S NAME
090.63-1-01	1000 Driving Park Avenue	COMIDA-Photech Imaging Systems, Inc.

free and clear of all liens and encumbrances which existed at the time of the above-referenced public auction,

TO HAVE AND TO HOLD, all and singular, the premises above mentioned and described and hereby conveyed unto the grantee, the grantee's successors and assigns forever.

IN WITNESS WHEREOF, the grantor has hereunto set her hand the date and year first above written.

LINDA S. KINGSLEY
Corporation Counsel

STATE OF NEW YORK)
COUNTY OF MONROE) SS:
CITY OF ROCHESTER)

On this 7th day of August, 1997, before me, the subscriber, personally appeared LINDA S. KINGSLEY, Corporation Counsel of the City of Rochester, to me known to be the person described in, and who executed, the within instrument and she acknowledged to me that she executed the same.

SUZANNE C. SUTTON
Notary Public in the State of New York
MONROE COUNTY
Commission Expires Oct. 16, 1997

TAX BILLING ADDRESS: 30 Church Street
Rochester, New York 14614

R+R

1000 Driving Park Avenue

Estimated Project Cost

day
DAY ENVIRONMENTAL, INC.

ENVIRONMENTAL CONSULTANTS
AN AFFILIATE OF DAY ENGINEERING, P.C.

June 13, 2006

Mr. Joseph Biondolillo
Environmental Specialist
City of Rochester
30 Church Street, Room 300B
Rochester, New York 14614

RE: Former Photech Imaging Systems, Inc.
1000 Driving Park Avenue
Rochester, New York
NYSDEC ERP #B00016-8

Dear Mr. Biondolillo:

Day Environmental, Inc. is providing this letter to document the estimated remediation cost for the above-referenced project in accordance with the recommendations outlined in the New York State Department of Environmental Conservation (NYSDEC) Record of Decision (ROD) dated March 31, 2006 and the Site Investigation/Remedial Alternatives (SI/RA) report dated January 2006. This project would be completed under the NYSDEC Environmental Restoration Program.

The Site consists of 12.5 acres of land with a total of 15 buildings comprising approximately 108,000 square feet of space. From approximately 1948 until 1991, the Site formerly contained several businesses, which manufactured photographic film and photographic paper. The Site contains former manufacturing areas, process areas, research and testing rooms, laboratories, warehouse buildings, and offices. There are several buildings with full or partial basements, below-grade pits/sumps, and several below-grade tunnels, which connect select buildings.

It is anticipated that the remediation project will be completed using the following phased approach:

Phase I (Building Demolition, Asbestos Removal, Liquids and Equipment Disposal, and Preliminary Building Footprint Investigation): The general dilapidated condition of most buildings at the Site, the presence of significant quantities of damaged and friable asbestos-containing materials (ACM) dispersed throughout the buildings, former laboratories, chemical storage areas, and process equipment has resulted in building materials that are contaminated with ACM and/or other hazardous substances. As a result, building demolition, asbestos removal and liquids and equipment disposal for each building at the Site would be completed in a highly integrated fashion, including close coordination with hazardous material response, health and safety plans, and community protection. Given the large size of the Site and its manufacturing history, the work plan for Phase I will have to be highly adaptable and dynamic, and general procedures will need to be developed to address unknown or undefined conditions that may arise and require immediate action.

40 COMMERCIAL STREET
ROCHESTER, NEW YORK 14614-1008
(585) 454-0210
FAX (585) 454-0825

www.dayenvironmental.com

60 EAST 42ND STREET, SUITE 1641
NEW YORK, NEW YORK 10165-1617
(212) 986-8645
FAX (212) 986-8657

Prior to the start of demolition, provisions for dewatering excavations during the demolition work would be implemented to address stormwater and potentially contaminated groundwater entering demolition-related excavations. As part of the facility demolition, the consultant will perform an assessment of subsurface media and conditions beneath all building footprints removed during the demolition-phase of the project. During demolition, known subsurface structures (e.g., tunnels, sumps, pits, etc.) and any unknown subsurface structures will be assessed, characterized and inventoried so that associated waste streams can be managed in accordance with applicable regulations. This work is required in order to prevent and/or minimize releases of hazardous substances that could impact human health or the environment.

During demolition, the consultant and subcontractors will document the removal and decommissioning of floor slabs and sub-grade structures, including drainage structures, floor drains, wastewater structures, piping, pits, drywells, and/or chases. It is likely that some unknown sub-grade structures will also be encountered, such as pits, vaults, drywells, wastewater discharge structures, underground storage tanks and process piping, and that some of these structures will contain residual waste (e.g., sediments, sludges, liquids, etc.) that requires containment, proper staging, subsequent characterization, and disposal. The consultant will identify and evaluate each subsurface structure and soil, sediments, or groundwater in the immediate vicinity of the structure. This assessment will include an evaluation of visual and olfactory observations, use of portable screening instruments, the collection of samples for subsequent analytical testing as deemed appropriate, and associated documentation.

A preliminary investigation of suspect subsurface conditions beneath the buildings would be performed as the floor slabs/basement slabs are being removed. If it is determined or suspected that releases to site soils have occurred, then the demolition contractor and consultant will conduct a preliminary assessment to evaluate and identify significant and obvious areas of contamination that require corrective actions or remedial measures. The preliminary investigation will include such things as field screening of subsurface media for evidence of any environmental impact, documenting the condition of subsurface structures, and collecting and analyzing samples of subsurface media (e.g., concrete, soil, sludge, etc.). Based on field observations, field measurements, or laboratory analytical testing, limited interim remedial measures (IRMs) may be recommended during the demolition phase of the project. Implementation of IRMs will require immediate input with the City and/or the NYSDEC. IRMs typically consisting of the removal of the subsurface structure, excavation and disposal of grossly impacted soil or sediments, or pumping and disposal of contaminated liquids or groundwater will be completed to address "hotspots" or pockets of contamination. One or more reports would be developed that document the completion of these tasks.

A professional services consultant would use a variety of information and data to properly characterize and manage waste streams generated during this phase of the project. Decisions will be made to either transport and dispose of wastes off-site, decontaminate building materials for off-site disposal or on-site re-use, and/or process certain materials for subsequent re-use on-site. Construction and environmental site observations, sampling and analytical laboratory testing, on-site testing equipment, facility knowledge and other data will be used to properly characterize,

handle, transport and dispose of waste streams that are generated. The consultant will assist in classifying the waste streams, completing waste profiles, tracking waste quantities, and identifying appropriate waste disposal facilities.

Phase II (Design Phase Investigation): A work plan would be developed for this phase of the project. The design-phase investigation is likely to be an iterative process to define the areal and vertical extent of soil and/or groundwater contamination at each area of concern at the Site that requires further delineation of impact prior to designing and implementing the remedial measures that have been identified in the ROD. The design-phase investigation would also be conducted on portions of the Site that were previously covered by buildings if further delineation of these areas is required. It is anticipated that the design-phase investigation would include the use of field screening technologies, as well as sampling and analytical laboratory testing, of Site media. This phase of the project will require managing, interpreting and presenting significant volumes of data and information, which will be utilized in the development of work plans and specifications for remedial actions and corrective actions. Sample locations and pertinent data will be collected and presented using global positioning system (GPS) and geographic information systems (GIS) technologies. A report would be developed that documents the findings, conclusions and recommended actions as a result of completing the design phase investigation.

Phase III (Site Remediation): A work plan would be developed for this phase of the project that specifies the remedial actions that may be required to address each remaining area of concern at the Site. Remedial actions include: removal of components (tanks, treatment vault, piping) associated with area of concern AOC2 (Silver Recovery Vault Area); removal of liquids from the silver recovery vault system; removal of contaminated soil from areas of concern AOC1 (East of Chemical Lab Building #11), AOC2 (Silver Recovery Vault Area), AOC3 (Eastern Portion of Site, and AOC4 (Miscellaneous Areas); and disposal of contaminated soils at a permitted facility (e.g., regulated landfill). The work plan will include a health and safety plan (HASP), a community air monitoring plan (CAMP), decontamination requirements, a confirmatory sampling plan, and quality assurance/quality control (QA/QC) protocols. In addition to remedial actions, the work plan will present institutional controls (e.g., deed restrictions, site management plan, etc.) that are required for the Site. The site management plan will include provisions for evaluating whether residual contamination (if any) has the potential for representing a vapor intrusion exposure that requires engineering controls on future buildings, etc. The components of the work plan would then be implemented in a logistical manner. Remediation components will include solids and liquids removal, transport and disposal, oversight and documentation, confirmatory sampling and analysis, backfilling, and site restoration. A report would be developed to document the completion of the remediation activities.

Operation and Maintenance: A work plan would be developed for operation and maintenance. It is anticipated that this work would consist of a five-year groundwater monitoring program (monitored natural attenuation) to evaluate the overall effectiveness of the Site-wide remediation. However, based on the findings of the design-phase investigation and site remediation, other in-situ remedial systems requiring operation and maintenance may be warranted for the Site. As such, a cost for operation and maintenance is not identified at this time. The monitored natural attenuation could include bi-annual sampling from up to ten wells during the first two years, and annual sampling and analysis from up to ten wells during the next three years. A report would be

developed to document the completion of the remediation activities. In addition, yearly or bi-annual groundwater monitoring reports would be developed. The first year or two of groundwater sample test results would be incorporated into the remediation report, and subsequent rounds of groundwater sample test results would be provided in yearly or bi-annual groundwater monitoring reports.

As shown, this project will require specialized services of an environmental consultant on a full time basis. This includes characterization and documentation in order to segregate contaminated building materials from uncontaminated building materials to ensure they are handled, transported, and disposed/re-used properly in accordance with applicable regulations. The environmental consultant will be tasked with obtaining and documenting environmental samples (e.g., building materials, underlying soil, etc.) for characterization and confirmatory purposes, and provide other specialized services including the use of a GPS and GIS to locate and document site features such as buried structures of environmental concern. Special skills will be required to interpret analytical laboratory test results, etc., and properly address environmental conditions as they arise. This project will require a high level of field decisions in relation to environmental aspects, including during asbestos abatement and demolition activities. It is also anticipated that a high level of project coordination and flexibility will be needed for this project.

Due to the complexity of corrective actions required, it is anticipated that the entire project would be difficult to publicly bid. However, it should be possible to obtain competitive quotes for certain aspects/tasks associated with this project (e.g., laboratory services, surveying services, various design-phase investigation and remediation services).

The estimated costs for each major component of each phase of the project are shown on the enclosed Summary of Estimated Total Project Cost for Remediation Table. This table includes the estimated costs, the percentage and estimated cost of the NYSDEC's share and City's share for the major components of each phase of the project, and the estimated costs including a 10% contingency for the total project cost, the NYSDEC's share and the City's share. It is recommended that a budget for completing this remediation project be based on the estimated costs including the 10% contingency in order to provide a budgetary amount available to address unforeseen expenses that may arise as the project progresses. These total estimated costs are summarized below:

Phase I (Building Demolition, Asbestos Removal, Liquids and Equipment Disposal, and Preliminary Building Footprint Investigation)	$3,023,350.00
Phase II (Design Phase Investigation)	$234,850.00
Phase III (Site Remediation)	$1,699,362.50
Total Estimated Project Cost Including 10% Contingency =	**$4,957,562.50**

This remedial cost estimate uses many of the assumptions that are outlined in the referenced documents. As an example, it is assumed that a total of approximately 15,800 tons of contaminated soil will require removal, transport and disposal off-site at a regulated landfill facility. In addition, the building demolition cost is based on a square foot unit rate that was realized on a similar City of Rochester demolition project. Other assumptions concerning demolition include: that floor

slabs/basement slabs, basement walls, blacktop pavement and 70% of building exterior walls will be crushed and used as fill for basement areas; that approximately 9,190 cubic yards of additional fill will be required for basement areas; and, that basement areas will be filled at the time of building demolition.

If there are any questions, please contact this office.

Very truly yours,
Day Environmental, Inc.

Jeffrey A. Danzinger
Project Manager

Timothy K. Hampton, P.E
Vice President

JAD/s

Enclosure

JD5464 / 3779R-06

SUMMARY OF ESTIMATED TOTAL PROJECT COST FOR REMEDIATION TABLE
Former Photech Imaging Systems, Inc.
1000 Driving Park Avenue
Rochester, New York
NYSDEC EPA Project #B00016-8

Work Effort	Estimated Cost	NYSDEC Share at 90% Reimbursement	NYSDEC Share at 50% Reimbursement	City Share of Costs
PHASE I - BUILDING DEMOLITION/ASBESTOS REMOVAL/LIQUIDS AND EQUIPMENT DISPOSAL & BUILDING FOOTPRINT INVESTIGATION				
Building/Asbestos/Residuals				
Engineering Design	$ 55,000.00		$ 27,500.00	$ 27,500.00
Permits	$ 1,000.00		$ 500.00	$ 500.00
Asbestos Abatement	$ 1,176,000.00		$ 588,000.00	$ 588,000.00
Building Demolition	$ 1,029,000.00		$ 514,500.00	$ 514,500.00
Liquids & Equipment Disposal	$ 157,500.00	$ 141,750.00		$ 15,750.00
Dewatering	$ 105,000.00	$ 94,500.00		$ 10,500.00
Construction Site Observation	$ 70,000.00		$ 35,000.00	$ 35,000.00
ACM Abatement Monitoring	$ 50,000.00		$ 25,000.00	$ 25,000.00
Reporting	$ 40,000.00		$ 20,000.00	$ 20,000.00
Building Footprint				
Engineering Design	$ 15,000.00	$ 13,500.00		$ 1,500.00
Environmental Monitoring	$ 40,000.00	$ 36,000.00		$ 4,000.00
Reporting	$ 10,000.00	$ 9,000.00		$ 1,000.00
PHASE I TOTALS	**$ 2,748,500.00**	**$ 294,750.00**	**$ 1,210,500.00**	**$ 1,243,250.00**
PHASE II - DESIGN PHASE INVESTIGATION				
Delineation Work				
Work Plan	$ 40,000.00	$ 36,000.00		$ 4,000.00
Drilling	$ 31,500.00	$ 28,350.00		$ 3,150.00
Oversight & Sampling	$ 50,000.00	$ 45,000.00		$ 5,000.00
Analytical Testing	$ 42,000.00	$ 37,800.00		$ 4,200.00
Reporting	$ 50,000.00	$ 45,000.00		$ 5,000.00
PHASE II TOTALS	**$ 213,500.00**	**$ 192,150.00**		**$ 21,350.00**
PHASE III - SITE REMEDIATION				
Soil Removal				
Work Plan	$ 40,000.00	$ 36,000.00		$ 4,000.00
Mobilization	$ 21,000.00	$ 18,900.00		$ 2,100.00
Solids Removal, Transport, and Disposal	$ 903,000.00	$ 812,700.00		$ 90,300.00
Liquid Removal, Transport, and Disposal	$ 39,375.00	$ 35,437.50		$ 3,937.50
Backfill	$ 262,500.00	$ 236,250.00		$ 26,250.00
Restoration	$ 52,500.00	$ 47,250.00		$ 5,250.00
Confirmatory Sampling	$ 31,500.00	$ 28,350.00		$ 3,150.00
Oversight and Documentation	$ 80,000.00	$ 72,000.00		$ 8,000.00
Reporting	$ 75,000.00	$ 67,500.00		$ 7,500.00
Institutional Controls				
Deed Restrictions	$ 10,000.00	$ 9,000.00		$ 1,000.00
Site Management Plan	$ 30,000.00	$ 27,000.00		$ 3,000.00
PHASE III TOTALS	**$ 1,544,875.00**	**$ 1,390,387.50**		**$ 154,487.50**
TOTAL COSTS	**$ 4,506,875.00**	**$ 1,877,287.50**	**$ 1,210,500.00**	**$ 1,419,087.50**

TOTAL NYSDEC SHARE = $3,087,787.50

TOTAL NYSDEC SHARE WITH 10% CONTINGENCY = $3,396,566.25

TOTAL CITY SHARE = $1,419,087.50

TOTAL CITY SHARE WITH 10% CONTINGENCY = $1,560,996.25

TOTAL PROJECT COST = $4,506,875.00

TOTAL PROJECT COST WITH 10% CONTINGENCY = $4,957,562.50

6/13/2006

Project Schedule

Preliminary Remedial Project Schedule

Former Photech Imaging Systems, Inc.
1000 Driving Park Avenue
Rochester, New York
NYSDEC ERP #B00016-8

April 23, 2007

This tentative remedial schedule provided below is considered preliminary and is subject to change. This schedule presumes that the health and safety plan (HASP), community air monitoring plan (CAMP) and citizen participation plan (CPP) developed in Phase I will require little or no modification for use during performance of subsequent phases of the project. The schedule also includes time for City of Rochester, regulatory agency review and citizen participation review of project documents, as warranted.

Phase I ..... **36 to 68 Weeks Total**

Building Decommissioning work plan, HASP, CAMP, and CPP - 12 to 24 Weeks

Asbestos abatement, liquids and building equipment removal and disposal, building demolition, preliminary building footprint investigation, and interim remedial measures (e.g., hot spot removals if discovered beneath building footprints during or after demolition) - 16 to 32 Weeks

Reporting - 8 to 12 Weeks

Phase II ..... **28 to 40 Weeks**

Design-phase investigation work plan - 12 to 16 Weeks

Field activities and analytical laboratory testing - 8 to 12 Weeks

Reporting - 8 to 12 Weeks

Phase III ..... **32 to 52 Weeks**

Site remediation work plan, institutional controls - 12 to 16 Weeks

Removal of system components from Silver Recovery Vault Area – 2 to 4 Weeks

Removal and disposal of impacted soil (Silver Recovery Vault Area, Area East of Chemical Lab Building #11, Eastern Portion of Site, Miscellaneous Areas, and any remaining areas within former building footprints) and confirmatory sampling and laboratory analysis – 6 to 12 Weeks

Site backfilling, grading, and restoration – 4 to 8 Weeks

Reporting – 8 to 12 Weeks

TOTAL SCHEDULE FOR PHASES I,II AND III = 96 to 160 Weeks

Phase IV ..... **64 to 276 Weeks**

Operation and maintenance plan - 12 to 16 Weeks

Up to 5-year groundwater monitoring program, possibly other O&M, reporting – 52 to 260 Weeks

TOTAL PROJECT SCHEDULE (PHASE I,II,III AND IV) = 160 to 436 Weeks

Other Non-ERP Potential Funding Sources

City of Rochester

Rochester, NY
All-America City
1998

FAX (585) 428-6059
TDD/Voice 428-6054

Robert J. Duffy
Mayor

City Hall, Room 307-A
30 Church Street
Rochester, New York 14614-1284
(585) 428-7045

November 30, 2006

Environmental Management Support, Inc.
Attention: Mr. Don West
8601 Georgia Avenue, Suite 500
Silver Spring, MD 20910
Phone 301-589-5318

Re: City of Rochester, New York - USEPA Brownfield Cleanup Grant Proposal
Former Photech Site (1000 Driving Park Avenue)

Dear Mr. West:

I am pleased to submit this $200,000 cleanup grant proposal from the City of Rochester, New York for your consideration. This proposed grant will provide cleanup services for a 12.2 acre brownfield site located on Rochester's northwest side. The City of Rochester has completed detailed investigations, interim remedial actions, and remedy selection under New York State's Environmental Restoration Program for municipal brownfield sites. As a result of the City's site activities to date, the New York State Department of Environmental Conservation has issued a Record of Decision for the remedy at the Former Photech site. The City expects to begin preparation of the site remedial work plan in the Spring of 2007. If awarded this hazardous substance cleanup grant, Rochester will be ready to implement the cleanup after execution of the cleanup cooperative agreement with the Environmental Protection Agency.

The Former Photech site is located in an industrial section of Rochester, and there has been significant redevelopment interest in the site. City initiated brownfield projects of similar size in this area have resulted in over $14 million dollars in investment and the retention and creation of hundreds of jobs in the last three years.

As required in the proposal guidelines, we are providing the following information:

Applicant Identification:
City of Rochester, New York
Department of Environmental Services
Division of Environmental Quality
30 Church Street Room 300 B
Rochester, New York 14614

Location:
City of Rochester, New York
Mayor Robert J. Duffy
30 Church Street Room 307A
Rochester, New York 14614
585-428-7045/Fax 585-428-6059

Contacts:

Project Director: Mark Gregor
Manager, Division of Environmental Quality
Phone number: 585-428-5978
Fax number: 585-428-6010
e-mail address: mgregor@cityofrochester.gov
30 Church Street Room 300B
Rochester, New York 14614

Mayor Robert J. Duffy
Phone number: 585-428-7045
Fax number: 585-428-6059
email address: duffyr@cityofrochester.gov
City of Rochester, New York
30 Church Street Room 307A
Rochester, New York 14614

Date Submitted: December 8, 2006
(Submitted to EPA via U.S. Postal Service).

Project Period: October 1, 2007-September 30, 2010
City of Rochester Population: 220,000

Other:
The City of Rochester is a federally designated Empowerment Zone/Enterprise Community, a federally designated Renewal Community, and a community with an Official Recognition from the Department of Justice for its Weed and Seed strategy. Several areas of the City are also established as New York State Empire Development Zones and Brownfield Environmental Zones.

Cooperative Partners:
Phil Banks, Rochester Economic Development Corporation - 585-428-6965
Victoria Pratt, Greater Rochester Enterprise - 585-530-6200
Cindy Kaleh, Maplewood Neighborhood Association, (NBN Sector 2) - 585-232-8420
Todd Caffoe, New York State Department of Environmental Conservation - 585-226-5350

We appreciate EPA's continued leadership and support of our past brownfield efforts, and appreciate the opportunity to share our successes with EPA. In response to EPA's recent request for proposals, Rochester is applying for both this $200,000 cleanup grant and a $200,000 assessment grant. Please let me know if you need additional information or have questions regarding this application.

Thank you again for your consideration.

Sincerely,

Robert J. Duffy
Mayor

Enclosure
xc: Patricia Malgieri, Deputy Mayor
Larry D'Andrea, EPA Region 2
Bill Ansbrow, Budget Bureau
Paul Holahan, Commissioner, DES
M. Gregor, DEQ
K. Altman, EDD

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City of Rochester, New York
EPA Brownfield Cleanup Grant Proposal
Former Photech Site
1000 Driving Park Avenue, Rochester, New York
December 8, 2006

Threshold Criteria

A. Applicant Eligibility
The City of Rochester is an incorporated general purpose unit of local government in New York State.

B. Letter from the State or Tribal Environmental Authority
An acknowledgment letter from Dale Desnoyers, Director of the Division of Environmental Remediation for the New York State Department of Environmental Conservation (NYSDEC) is provided in **Attachment 1**.

C. Site Eligibility and Property Ownership Eligibility
C.1. Basic Site Information
C.1.(a.) Name of the site: Former Photech Imaging Systems , Inc. Site
C.1.(b.) Address of the site: 1000 Driving Park Avenue, Rochester New York
C.1.(c.) Current owner of the site: City of Rochester, New York
C.1.(d.) If not current owner...: Not applicable

C.2. Status and History of Contamination at the Site
C.2. (a) Contamination: Hazardous substances
C.2. (b) Operational history and current uses(s) of the site:
The former Photech Imaging Systems, Inc. property (Site) is located at 1000 Driving Park Avenue in a industrially zoned area in the City of Rochester, Monroe County. The Site is comprised of 12.2 acres of land with a total of 15 buildings, and the area is served by public water. The Site was originally developed in 1948 for manufacturing photographic film and paper. Several different companies have owned and operated the facility for photographic paper and film production through 1991. Site operations of concern included a chemical laboratory, coating operations, solvent, fuel, product and waste storage, an incinerator and waste management. The most recent operator, Photech Imaging Systems, Inc., ceased operations and abandoned the facility in 1991. Under property tax foreclosure proceedings, the City of Rochester obtained the property in August 1997. The site is currently vacant industrial land and has been unused since the City took title. Additionally, the roofs have failed on several of the buildings, and a fire in 2004 severely damaged the former warehouse building. The City of Rochester completed a detailed site investigation and remedy selection in January 2006 under the New York State Environmental Restoration municipal brownfield grant program. In March 2006 the New York State Department of Environmental Conservation (NYSDEC) issued the Record of Decision for the site remedy.

C. 2. (c) environmental concerns, if known, at the site ...
Large amounts of chemicals, wastes, and various supplies and materials were left "as-is" on-site when the facility was abandoned. In 1994, the NYSDEC and the United States Environmental Protection Agency (EPA) performed bulk waste and chemical removal actions at the site. This work successfully removed bulk chemicals from the facility; however, residual chemicals remained in some of the on-site buildings. Since the removal action, the buildings have been severely vandalized. As a result, asbestos and chemical residues present have been disturbed inside many of the buildings. The Site also includes several below grade tunnels and vault areas.

The City completed a Site Investigation/Remedial Alternatives (SI/RAR) report in January 2006. The SI/RAR identified six areas of concern (AOCs) on the Site and evaluated each separately. The report identified contamination with metals and polycyclic aromatic hydrocarbons (PAHs) in on-site soils and groundwater. Additionally, low levels of volatile organic compounds (VOCs) were detected in on-site groundwater. The predominant metals detected at the site were silver and cadmium. These metals are used in the manufacture of photographic film and paper. The majority of soil contamination is limited to the areas surrounding the on-site buildings and wastewater treatment systems.

C. 2. (d) How the site became contaminated...nature and extent of contamination

The Site was originally developed in 1948 for manufacturing photographic film and paper. Several different companies have owned and operated the facility at the Site for photographic paper and film production since its construction in 1948. Such manufacturing and supporting laboratory operations use an assortment of solvents, alcohols, heavy metals, pigments and industrial processes that can result in soil and groundwater contamination, tank system releases and hazardous waste generation. A 1986 environmental inspection of the plant identified its waste handling practices, and information from soil borings and groundwater testing identified several concerns: a former underground wastewater silver recovery system adjacent to the Research and Development Building was identified as suspect; one or more of the underground fuel tanks leaked into the surrounding soil; the underground 500-gallon waste methanol tank piping had failed; and the facility waste handling practices required upgrading or modification to meet regulatory requirements.

The Photech site contained an assortment of abandoned oxidizers, reactive chemicals, flammable liquids, corrosives, poisons, and shock sensitive chemicals that were stored both inside and outside of facility buildings. Many of these chemical materials were stored in deteriorating containers and in unsafe conditions. Although the EPA and NYSDEC completed removal actions including removing and disposing of hazardous wastes and relocating chemical products (i.e. glycols) to a more secure area, process tanks were not certified as "clean", small containers of chemicals were left in some of the buildings; and residual chemicals remain in some process vessels and piping. The City's 2006 site investigation and remedial alternatives report identified six major areas of concern. Primary contaminants in these areas are semivolatile organic compounds (SVOC's) particulary carcinogenic polycyclic aromatic hydrocarbons (PAHs) and heavy metals. PAHs identified in soils are benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenz(a,h)anthracene. Metals of concern identified at the site include: cadmium, chromium, lead, nickel, selenium, silver, and zinc. Metals contamination in soil and ground waters was found. Other contaminants detected on-site include very low levels of volatile organic compounds (VOCs) in soils and groundwater. No significant source of VOCs was detected on-site. Contaminants do not appear to be migrating off-site.

C.3. Sites Ineligible for Funding. Affirm that the site is:

C. 3.(a.) ... not listed or proposed for listing on the NPL ...

The Photech site in not currently listed or proposed for listing on the National Priorities List.

C.3. (b.) ... not subject to unilateral administrative orders ...

The Site is not subject to unilateral administrative orders, court orders, administrative orders on consent, or judicial consent decrees issued to or entered into by parties under CERCLA.

C.3.(c) ... not subject to the jurisdiction, custody, or control ...

The Site is not subject to the jurisdiction, custody, or control of the United States government.

C.4. Sites Requiring a Property-Specific Determination

In accordance with Appendix 3 Section 3.4.1. the City is providing documentation in **Attachment 2** that an EPA removal action was completed in October 1994 at the Photech site. According to the Pollution Report issued by the EPA OSC "all objectives set forth in the Action Memorandum have been achieved." The site is not subject to

a planned or ongoing CERCLA removal action. A property specific funding determination is therefore not required. The City contacted the EPA OSC, Mike Ferriola, to confirm the completion status of the removal action.

C. 5. Environmental Assessment Required for Cleanup Proposals.

In April 1997, the City of Rochester applied to and was awarded a NYSDEC Environmental Restoration Program grant to perform a Site Investigation and Remedial Alternatives Analysis (SI/RA) at the Site. The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site. The SI/RA was conducted between November 1998 and May 2005. Field activities and findings of the investigation are described in the SI/RA report. The following activities were conducted during the SI: Completion of "a Phase I site assessment in accordance with American Society for Testing and Materials (ASTM) E 1527-97." This assessment included several interviews with the former plant engineer; An asbestos survey and sampling program consisting of 26 wipe samples and 212 bulk samples for asbestos analyses; A building and equipment decontamination survey to assess residual chemical contamination inside the building that consisted of 110 wipe samples and 32 bulk samples for chemical analysis; Cleaning, removal and disposal of four aboveground storage tanks (ASTs); Excavation and removal of the buried spill containment drum from the former hazardous waste storage area; Installation of forty (40) soil borings and ten (10) monitoring wells for analysis of soils, groundwater, and physical properties of soil and hydrogeologic conditions; Sampling of shallow subsurface soils (0-9" below ground surface) at seventeen (17) locations; and Soil and groundwater sampling at ten monitoring well locations. The SI/RA report was completed and dated January 2006 and included the ASTM phase I site assessment. Based on the City's Site Investigation/Remedial Alternatives Report the NYSDEC prepared a Preliminary Remedial Action Plan in February 2006. After a March 7, 2006 public meeting and comment period, the NYSDEC issued the Photech site Record of Decision in late March 2006.

C. 6. Affirm that you are not potentially liable...

The City of Rochester is not a potentially responsible party under CERCLA Section 107. The City acquired the property through property tax foreclosure in 1997, an involuntary acquisition providing a liability exclusion and affirmative liability defense for local governments under CERCLA Sections 101 (20) (D).

C.7. Enforcement Actions. Identify known ongoing or anticipated environmental enforcement actions ...

There are no ongoing or planned environmental enforcement actions related to the 1000 Driving Park site. The City provided documents and cooperated with previous inquiries from EPA investigators which led to a January 1997 $50,000 ability to pay settlement with W. Daniel Johnson, the prior owner, and to an agreement by Robert H. Book, an associate of the prior owner, to pay a $10,000 civil penalty as a result of a Stipulation of Dismissal (Civil Action 0359 filed in May 2000 in the Western District of New York). In October 2000 the EPA Inspector Generals Office notified the City in writing that it no longer needed Photech documents and returned the documents to the City. According to the NYSDEC "there are currently no ongoing enforcement actions" and the NYSDEC is not planning to initiate remedial actions at the Site.

C.8. Information on Liability and Defenses/Protections

C. 8. a. Information on Property Acquisition

The City of Rochester took sole ownership of the 1000 Driving Park Avenue property through property tax foreclosure on August 11, 1997. The City acquired fee simple title ownership through a foreclosure judgement issued from Monroe County Supreme Court. The owner at the time of the foreclosure judgement was COMIDA-Photech Imaging Systems, Inc. In the late 1980's, the City of Rochester had provided a $680,000 Section 108 business loan to Photech Imaging Systems, Inc. The property and business operations were subsequently abandoned, and the City was unable to collect from the owner and forced to write off the loan as a loss.

C. 8. b. Timing of Hazardous Substance Disposal

All disposal of hazardous substances at the site occurred before the City of Rochester acquired the property, and the City has not caused or contributed to any release of hazardous substances at the site. The City did not at any time arrange for the disposal of hazardous substances at the site or transport hazardous substances to the site.

C. 8. c. Pre-purchase Inquiry

Once the property became abandoned and tax delinquent in 1991, City Division of Environmental Quality (DEQ) remediation specialists, with several years experience and advanced environmental educations, performed an in-house preliminary site assessment on the property, its prior ownership and operations, and environmental concerns. DEQ updated the assessment annually until it foreclosed in August 1997. The City also worked closely with the NYSDEC and USEPA during the removal actions completed in 1994. The City periodically visited the site as the NYSDEC and the USEPA performed a bulk waste and chemical removal action at the Site. The City does not intend to establish a bonafide purchaser defense because the property was acquired through tax foreclosure, an involuntary acquisition providing a liability exclusion and affirmative liability defense for local governments under CERCLA Sections 101 (20) (D).

C. 8. (d). Post-Acquisition Uses

The only activities on the property have been associated with the completion of environmental site investigations under the oversight of the NYSDEC, site security, responses to break-ins, and arson fires. The City has not used the property for any other purpose or leased, licensed or permitted the use of the property for any other purpose since foreclosing on the property.

C.8.(e). Continuing Obligations

The City of Rochester has exercised appropriate care since acquiring the site to stop and prevent releases of hazardous substances by completing needed interim remedial measures. The IRMs included closure of the following four aboveground storage tanks (ASTs): a 10,000-gallon steel fuel oil AST; a 10,000-gallon virgin methanol AST; a 2,500-gallon virgin methanol AST; and a 2,500-gallon waste methanol AST . The IRMs also included removal of suspect underground structures and a containment drum used to collect runoff and drainage from the former hazardous waste storage shed structure. All of the ASTs and associated secondary containment structures were removed and disposed of off-site. Confirmatory soil sample results beneath the ASTs showed no residual contamination. The City has also attempted to secure the property to limit site access and exposures. The City maintained and repeatedly performed board ups, repaired site fencing, posted signage, and periodically inspected the property. The City completed the IRMs and detailed site investigation and remedy selection all under NYSDEC oversight. As a result of the City's responsible site actions, the NYSDEC issued the site Record of Decision in March 2006.

Confirm you commitment to...

The City of Rochester will comply with all land use restrictions and institutional controls including NYSDEC environmental easements. The City's building permit based environmental institutional control system will also be used to control activities on the site. The City will provide assistance to and cooperate with the environmental consultant and contractors performing the cleanup as well as regulatory agencies and provide access to the property. The City will also comply with all information requests and administrative subpoenas that have or may be issued in connection with the property; and provide all legally required notices including those required for cleanup activities under the NYS ERP program. The City recognizes that it must meet all its continuing obligations.

D. Cleanup Authority and Oversight Structure

D.1. Describe how you will oversee the cleanup...

The City has already enrolled in the NYSDEC's ERP program and performed all site investigation, interim remedial

actions, and remedy selection activities under NYSDEC oversight. The City is planning to continue the remedial design and remedial action phase under the ERP municipal brownfield program. All remedial activities will be performed under the oversight of the NYSDEC. The City has assigned a senior environmental staff person to oversee and manage the environmental firm selected to perform the remediation work. Remedial services will be performed through a professional services agreement, and will be procured using an advertised, open competitive selection process in accordance with NYS General Municipal Law and 40 CFR Part 31.36. The selected firm and agreement amount will be subject to Rochester City Council authorization. In accordance with standard City brownfield cleanup procedures, the City project manager will coordinate the review and approval process for the remedial action with the Monroe County Department of Health and the NYSDEC. Citizen participation activities and involvement will be based on a NYSDEC approved Citizen Participation Plan. The City project manager will carefully coordinate site reuse plans with remedial work plan development and site remediation activities.

D.2. Cleanup response activities often impact adjacent ...

Site investigations to date have not revealed any off-site contamination and no off-site cleanup activities are required by the Record of Decision. The Site is bounded on the south and west side by public roads and rights-of-way and no residences are adjacent to the site. The City has already involved adjoining property owners in the ERP project citizen participation planning, and has experience on several other sites in the successful negotiation of access agreements should any remedial work need to be performed on private property. The City will follow its general practice of advising adjoining property owners of potential impacts of remedial projects and discuss the potential for the need for access before any work begins. Should property access agreements be needed the City will negotiate mutually acceptable terms including restoration of any damage to property.

E. Cost Share

In anticipation of the need to finance the cleanup of this site the City established general obligation debt allocations in its five-year capital improvement program based on preliminary cleanup estimates. The early estimates were lower than the current projected cost. As a result, the City's current project match of $1.57 million, alone is not enough to finance the entire estimated project cost. Although not the majority of the proposed funding for the project, the EPA grant therefore is needed in order for the City to proceed with this project. The City's share exceeds the required 20% cost share requirements for the proposed cleanup grant.

Ranking Criteria

A. Former Photech site (1000 Driving Park) EPA Hazardous Substances Cleanup Grant Budget

Budget Category	Task 1 Cleanup Design & Work Plan	Task 2 Community Participation	Task 3 Site Cleanup	Task 4 Reporting & Institutional Controls	Total
Personnel	$1,373	$2,059	$2,402	$3,432	$9,266
Fringe	$627	$941	$1,098	$1,568	$4,234
Travel	$0	$0	$0	$0	$0
Equipment	$0	$0	$0	$0	$0
Supplies	$0	$100	$0	$0	$100

Contractual	$0	$2,400	$184,000	$0	$186,400
Other	$0	$0	$0	$0	$0
EPA Grant	**$2,000**	**$5,500**	**$187,500**	**$5,000**	**$200,000**
City Share *	$130,000	$6,550	$1,320,000	$115,000	$1,571,550
Total Project Cost	**$132,000**	**$12,050**	**$1,507,500**	**$120,000**	**$1,771,550**

*Funding sources are City of Rochester general obligation bonds for contractual services and operating budget (personnel, equipment & supplies). All procurement will comply with procedures in 40CFR 31.36.

Project Description and Task Narrative:

Task 1 This task will include the preparation by an environmental consultant of required draft and final Remedial Work Plan including a Soil Management Plan, Community Air Monitoring Plan (CAMP), and a Health & Safety Plan (HASP), plan submission & presentation to agencies, and any revisions needed for approval. These plans will be required by the NYSDEC and will be subject to county and state health department approvals. This task may include design phase investigation and pilot testing of remedial techniques if required by the NYSDEC. Budgeted amount is for DEQ staff programmatic costs for work planning.

Task 2 This task includes preparation of the site Community Participation Plan (CPP) and activities such as neighborhood meetings, notices, presentations, and reuse planning, that are required during the design and remedial phase of the project. The CPP will include establishing a project complaint response process. Budgeted funds are for City staff CPP program management and consultant CPP services. The City will also make project documents available on its web-page: http://www.cityofrochester.gov/des/deq.cfm.

Task 3 Contractual cleanup actions will include: the removal of a silver recovery system components, solids and liquids removal; soil remedial action is anticipated to require the installation of additional temporary exclusion zone fencing, excavation, removal and disposal of 15,800 tons of heavy metals and PAH contaminated soil from several areas of concern including the former chemical laboratory, waste characterization sampling, dewatering of excavations as necessary, confirmatory soil sampling, backfilling, and compaction. This work will be completed through contractual professional services. Site restoration activities will include grading, compaction, topsoil and landscaping. Active groundwater remediation is not required, however a program to monitor natural attenuation of site contaminants in groundwater will be implemented. Budgeted amounts are for DEQ program management and contractual services.

Task 4 This tasks includes DEQ staff and consultant services for the preparation of draft and final remedial construction engineering reporting and groundwater monitoring program performance reporting required by the NYSDEC. The task will generate documentation of the cleanup, ongoing operations, maintenance and monitoring requirements including any engineering controls and use restrictions. The City's institutional control, the building permit flagging system, will be established based on these documents.

B. Community Need

B. 1. Provide a detailed description of the target community that the project(s) will benefit.

The City of Rochester is facing a projected budget gap of more than $ 26.6 million in the next fiscal year. This projected gap increases to $ 94.7 million by fiscal year 2011-12. In the City of Rochester, 23.4 % of the families live in poverty and 37.5 % of families with related young children under five years old were below the poverty level as of 2000. The total number of households in Rochester decreased by 4,500 from 1990 to 2000. Median household income in 2000 was $27,123 (2000 Census data). Rochester's Renewal Community Zone has been particularly hard hit by these trends. Rochester is a City of 220,000 people in a metropolitan area of

approximately one million people, yet in the last 20 years Eastman Kodak Company alone has reduced its workforce from over 60,000 to less than 14,000 in the Rochester area.

B.2. Explain how the targeted community will benefit from this grant.
Ironically although there has been significant downsizing of its largest employers, there is a severe lack of development-ready industrial land in the City. This is because many of the older under utilized facilities are highly specialized, obsolete and, as in case of the Photech site, environmentally contaminated and deteriorated beyond repair. Smaller growing companies in Rochester, as a result, often cannot find sites on which to expand in the City and leave for green fields in suburban and rural areas or leave the Rochester area altogether. The City of Rochester currently owns less than ten acres of industrial land that is ready for redevelopment. A major key for the future of economic conditions in Rochester is the success of its smaller and mid-size manufacturing companies. Environmental cleanup of the Photech site will more than double the City's inventory of land for new industrial redevelopment and offer more opportunity to retain and grow Rochester's manufacturing base.

Rochester's experience has been that EPA brownfield cooperative agreements and funding create increased support and positive attention for the affected neighborhoods around sites. The proposed cleanup grant and project will directly contribute to increases in the property value of the site and of nearby properties. Experience with other completed brownfield cleanup projects in Rochester indicates that higher valuations occur after cleanup which lead to stability in neighborhoods and increased property tax revenues, particularly once the site redevelopment is complete. The City's most recent brownfield cleanup and industrial redevelopment of a site similar in size to Photech resulted in over $14 million dollars in initial investment for new construction and the retention and creation of hundreds of jobs in the last three years. This proposed cleanup grant does not target an area of Rochester that was previously targeted by an EPA brownfield cooperative agreement.

B.3. Characterize the impact of brownfields on your targeted community ...
There are approximately 5,900 manufacturing and commercial properties in the City of Rochester and roughly 40% of these properties present enough environmental risk to be considered brownfields. In an area-wide brownfield planning study now underway two miles southeast of the Photech site, 160 brownfield properties have been identified in a 394 acre mixed-use study area. Abandoned brownfield sites, including 1000 Driving Park Avenue, have become magnets for illegal dumping, vandalism, drug activity, and other illicit activity. The Photech site has been the location of arson fires, vandalism, drug activity, and scavengers striping copper pipe and other metals with scrap value. This is a large facility, and its current condition has a negative affect on property values and the appearance of this industrial and commercial section of Rochester.

Each year Rochester manages an inventory of tax delinquent brownfield properties that collectively amount to approximately $5 million in delinquent taxes and fines. Based on the number of pre-foreclosure environmental reviews performed from 1995 to 2004, there has been an increase of 50% in the number of tax delinquent commercial and industrial properties reflecting a rising number of brownfields in the community. Although the City actively acquires and performs cleanups on several sites each year the vast majority, 95%, of brownfields remain in private ownership. The number of vacant properties in Rochester has risen approximately 50% in the last five years. Most of Rochester's brownfields are located in neighborhoods that experienced almost a decade of declining property values.

C. Sustainable Reuse of Brownfields
C. 1. prevent pollution and reduce resource consumption...
The grant will provide the additional funding needed for Rochester to proceed with the site cleanup in late 2007 and early 2008. The proposed grant and cleanup will set the stage for redevelopment of the site. This grant will help promote the reuse of existing infrastructure and reduce air pollution and energy consumption because

it will provide over 12 acres of industrial land ready for redevelopment in the established population center of the greater Rochester region. The need to reduce transportation related pollution in Rochester was recently highlighted by EPA's Community Initiative. Mobile sources were identified through EPA's 2004 Community Initiative for Rochester as contributing 56% of air toxins in the area. The City has a successful track record of stimulating redevelopment of brownfields in ways that contributes to pollution prevention, reduced energy and resource consumption. This grant will help lead to redevelopment with features such as the City's recently completed construction of a LEED certified Water Operations Center. The project was completed on a remediated brownfield site which involved reuse of processed demolition debris for nearly all of the structure fill needed for site construction. The City will use the LEED approach in the redevelopment requests for redevelopment proposals (RFP) for the Former Photech site.

Rochester's adopted Comprehensive Plan established strategies that link brownfield assessment and redevelopment to pollution prevention, energy efficiency, and recycling of building materials. Typically through its RFP process, the City strongly encourages energy efficient construction and heating systems. Resource conservation through sustainable development and Smart Growth is a central theme in the City's Comprehensive plan. City redevelopment requirements for the Former Photech site will include guidelines for green building construction, storm water best management practices, energy efficient design and construction, and encourage alternative energy systems such as geothermal energy which has proven successful in the Rochester area.

C.2. promote economic benefits ...

The cleanup grant will contribute to increases in the property value of the Site and of nearby properties. Because the site was several years tax delinquent and has been in City ownership since 1997, cleanup and redevelopment of the site will clearly result in increased property taxes and increased assessed valuation. The proposed cleanup grant and project will likely also contribute to increases in the property value of nearby properties. Experience with other completed brownfield cleanup projects in Rochester indicates that higher valuations and greater investment interest that occurs after cleanup lead to stability in the affected neighborhood and community. This is particularly so once the site redevelopment is complete. The City's most recent brownfield cleanup and industrial redevelopment of a site similar to the Photech site resulted in over $14 million dollars in initial investment for new construction and the retention and creation of hundreds of jobs. Estimates for the potential new investment in the redevelopment of the Photech site range from $10 to $20 million dollars and the creation/retention of 150 to 400 jobs depending on the nature of the redevelopment. The cleanup and redevelopment of the site will create both construction phase and permanent jobs. Rochester's experience has been that EPA brownfield cooperative agreements and funding create increased community interest, support and positive attention for the affected neighborhoods around sites.

C.3. promote a vibrant, equitable, and healthy community, through, e.g. smart growth,...

The proposed grant and the site cleanup will set the stage for significant industrial sector investment, job creation and retention, and help the existing nearby commercial/industrial businesses. Successful redevelopment of this 12.2 acre industrial site will transform the appearance of this area of Driving Park Avenue and will encourage additional private and public investment. Site cleanup will create an opportunity for one or more businesses to locate in the urban center of the Rochester serviced by existing infrastructure, transportation systems and potentially avoid development of open space or undeveloped areas in suburban or rural areas around Rochester. Redevelopment of this site is consistent with the principles of Smart Growth and resource conservation. It is also likely that the City will require that a portion of the wooded area at the north end of the property will remain as open space for workers and as a buffer to the adjoining Holleder Industrial Park.

D. Creation and/or Preservation of Green Space/Open Space or Nonprofit Purpose...

Redevelopment of this site, located in an already heavily industrial area of the City, may help avoid new

construction at green field sites in outlying areas. This Photech site along with the adjacent Holleder Industrial Park offer a viable alternative for businesses considering whether to locate in the City or to construct on green fields in suburban and rural areas. The northern portion of the Photech site includes a wooded area and small freshwater wetland. Redevelopment concept plans are being prepared that preserve and protect this beneficial and unusual urban greenspace. The City will use its institutional control system, the Building Permit Flagging System, to ensure proper Site management as well as precautions for and control of future activities at the site. The greenspace maintenance and preservation will be incorporated into the redevelopment request for proposal and be binding on the site developer(s). This proposed cleanup grant will include the preparation of a management plan and development guidance document that will be part of the NYSDEC required site operations, maintenance and monitoring plan. Under the NYSDEC brownfield cleanup program, the City will also be required to grant the state an environmental easement for the property to protect and preserve the approved land uses.

E. Pre-Award Community Notification

E.1. Describe how the targeted community(ies) was or will be notified of your proposed plans...

The City Division of Environmental Quality contacted leaders of the Neighbors Building Neighborhoods Sector 2, the Maplewood Neighborhood Association and nonprofit economic development organizations with interest in the Photech site by telephone during the weeks of November 27 and December 4 to update them on the progress toward cleanup of the Photech Site and inform them of the cleanup grant proposal. An electronic version of the draft proposal was forwarded to those organizations expressing an interest in seeing the proposal. A copy of this proposal will be made available at the City's Neighborhood Empowerment Team (NET) Offices in Sector 2 where the Photech Site is located. A pdf version of the proposal is also available on the DEQ web page on the City's site: http://www.cityofrochester.gov/des/deq.cfm.

E. 2. Explain why the notification method proposed above was/is the most appropriate way...

During both the pre-award and post award periods the City will use its well established, award winning Neighbors Building Neighborhoods (NBN) community-based planning process to inform and involve residents, businesses, and neighborhood groups in the Photech site cleanup and reuse planning. Under the NYSDEC ERP program community involvement activities required in the site CPP will be performed. Public notices regarding the Photech site were issued during the site investigation and remedy selection phase to a contact list of property owners, businesses, neighborhood groups, and regulatory agency representatives. The most recent public meeting was held in March 2006 to present the proposed remedy and accept public comments. The CPP will be prepared for the remedial design/remedial action phase that will describe anticipated citizen participation efforts. The City will also create an electronic document repository on the DEQ web page. The method of pre-award community notification reflects the prior involvement of the community in the Photech site investigation phase, required cleanup phase community involvement under the NYSDEC ERP brownfield cleanup program, and the City's NBN community-based planning system.

E. 3. How long of a comment period did/do you propose...

The grant proposal is being provided to the interested community and neighborhood groups and NBN sector leaders prior to proposal submission. The City will accept comments and suggestions at any time prior to and after selection by EPA. If selected by EPA for a brownfield assessment cooperative agreement, the City will advertise in the local Democrat and Chronicle newspaper both the selection and availability of the grant proposal for comment. The City will accept formal comments for 30 days and will use the comments to refine the cooperative agreement work plan. In accordance with the Citizen Participation Plan requirements the City Environmental Quality staff will also present the EPA cleanup grant proposal and information about the cleanup project to NBN Sector 2 and affected neighborhood groups at a neighborhood meeting.

E. 4. What were/are your plans for addressing comments received?

If selected, the City will evaluate comments received and use the comments to refine and improve the City's cooperative agreement work plan with EPA for the Photech site. The City will prepare a responsiveness summary as appropriate, post the summary on the DEQ web-page and provide a copy to the Maplewood Neighborhood Association, Sector 2 NBN community leaders, and City NET office. The City will incorporate relevant comments into the remedial action work plan that will be submitted to the NYSDEC for approval. Before and during the cleanup the City will encourage comments and suggestions on the plan for EPA funded activities and the entire management of the site and the cleanup process.

F. On-going Community Involvement

F.1. Discuss your plan for involving the affected community ...

Several community involvement activities have already occurred during the site investigation and remedy selection phase for the Photech site. Based on the City's completed investigation and remedy selection efforts, the NYSDEC issued a Preliminary Remedial Action Plan (PRAP) in February 2006. During the 30 day public comment period the City and NYSDEC hosted a public meeting to present the remedy. The NYSDEC prepared a responsiveness summary and issued the site Record of Decision in March 2006. The City will provide copies of project work plans and reports for the public at a document repository and electronically on the DEQ web page. The NYS Environmental Restoration municipal brownfield cleanup process requires several public involvement activities. Requirements include the preparation of the written CPP; the creation of a contact list of affected and interested residents, property owners, businesses, neighborhood groups, public officials and agencies; the mailing of public notices and fact sheets, public meetings at strategic points in the remedial process, public comment on the significant changes to the proposed remedy. Redevelopment concept plans are being prepared by a consultant in order to coordinate the cleanup phase with redevelopment site preparation. All future public meetings regarding the remedial design and subsequent remediation phase will include discussion of redevelopment plans. The City's practice is to provide opportunities for the community to help plan both cleanup and redevelopment at brownfield sites.

F.2. Describe your efforts and/or plans to develop partnerships...

The City Division of Environmental Quality strives to establish and maintain long-term, day-to-day working relationships with staff from the State and Monroe County health and environmental agencies. The City DEQ has been an active member of the Monroe County Waste Site Advisory Committee for over 20 years. The WSAC meets bi-monthly to review brownfield and Superfund site progress. The New York State ERP program is administered by the NYS Departments of State and Environmental Conservation and coordinated with the New York State Health Department (NYSDOH). The City has completed and is in process of performing several other ERP projects with the NYSDEC. ERP projects are performed under agreements with and the direct oversight of the NYSDEC.

City DEQ project staff work directly with residents, neighborhood groups, City Council representatives, developers, Rochester Economic Development Corp. (REDCO), Greater Rochester Enterprise (GRE), and investors on brownfield cleanup and redevelopment projects. For each new brownfield project affected neighborhoods and City planning sectors are identified and contacts made with neighborhood leaders. Redevelopment concepts are discussed with the neighborhood and revised with community input throughout the project. Project coordination meetings are held with affected City, Monroe County and State agencies, public utilities, and neighborhood leaders. Stakeholder partnerships are essential to all brownfield projects. The City works to involve the NYSDEC, NYSDOH and MCDOH early in all projects, particularly those where engineering and institutional controls are anticipated to mitigate residual contamination. In Rochester, brownfield redevelopment projects must meet established City site plan, environmental review, community notice and review, zoning, and if applicable, City institutional control system requirements to ensure appropriate and sustainable redevelopment. These processes involve partnerships between City departments and the NYSDEC and Monroe County Health

Department. City institutional control system guidance documents are prepared with the involvement of the NYSDEC and MCDOH to assure consistency in future relationships with permit applicants. City environmental and economic development staff will work closely with the project developers, environmental and health regulatory agencies and the community to ensure an appropriate and sustainable cleanup and redevelopment project.

F.3. Describe your specific plans for communicating the progress of your project to citizens...
The City has and will continue to communicate project progress to citizens and the neighborhoods using several techniques including direct project updates mailing, neighborhood meetings, project fact sheets and the DEQ web page. A project contact list of neighbors, interested parties, and agency personnel has already been established and approved by the NYSDEC. Site progress reports are also e-mailed to involved agencies, neighborhood group leaders, and interested citizens. Courtesy phone calls are made when new activities are started on the site. Project documents will be made available at the document repository and also on the DEQ web page. Although the demographics of Driving Park Avenue and Maplewood neighborhood indicate that few non English speaking reside there, the need for communications in other languages is being monitored and second language updates will be provided as requested.

F.4. Provide a list of the community-based organizations involved in this project...

Mark LaRuez Neighbors Building Neighborhoods (NBN) Sector 2 Co-Chairperson 1600 Dewey Avenue Rochester, New York 14615 585-458-3900	Neighbors Building Neighborhoods planning sectors are comprised of one or more neighborhood groups that develop community-based action plans for their section of the City. These action plans, developed mostly by volunteers, are used by the City to allocate resources and plan projects for a broad range of quality of life initiatives.
Cindy Kaleh Maplewood Neighborhood Association 1495 Lake Avenue PO Box 13529 Rochester, New York 14613 585-232-8420	The Maplewood Neighborhood Association represents the neighborhood in dealings with City Hall, Monroe County and the State of New York. MNA's goal is to plan for its community as a diverse and vibrant neighborhood, celebrate the strengths and creativity of the residents, encourage home ownership and the residential character of the neighborhood, and represent its interests in decisions that affect the Maplewood neighborhood.
Phil Banks Rochester Economic Development Corp. 30 Church Street Rochester, New York 14614 585-428-6965	The Rochester Economic Development Corporation (REDCO) is a not-for-profit corporation dedicated to stimulating and increasing business investment in Rochester. REDCO is operated by an experienced board of bankers, public officials, business and neighborhood leaders.
Victoria Pratt Greater Rochester Enterprise ~~PO Box 40366~~ 100 Chestnut Rochester, New York 14604 585-530-6200	The GRE is a public/private partnership established to professionally market the Rochester metropolitan area as a competitive, high-profile region for business location and growth. GRE will collaborate with business, academia, not-for-profit organizations and government to ensure a unified approach to regional economic development efforts.

G. Reduction of Threats to Human Health and the Environment

G.1. How and to what extent will funds be used to identify and or reduce threats to human health...
The proposed grant will provide funding to significantly reduce the environmental and health threats

associated with site contamination issues by removing sources of soil and groundwater contamination, major areas of soil contamination, and by reducing groundwater contamination. The City of Rochester will use a combination of integrated techniques to reduce and eliminate potential threats from existing contamination as well as any residual contamination that may be present after cleanup is completed. The Site remedy, approved by the NYSDEC in March 2006, addresses the threats to public health and the environment identified during the SI/RA. Reduction in public health and environmental threats from, including site contaminants that are classified as carcinogens, will be accomplished by the following: development of an NYSDEC approved remedial work plan design program; removal of the silver recovery system; excavation and off-site disposal of an estimated 15,800 tons of heavy metals and PAH contaminated soils; development of a site management plan; imposition of a NYSDEC environmental easement; periodic certification of the institutional and engineering controls; and implementation of a long-term groundwater monitoring plan. According to the March 2006 NYSDEC Record of Decision, "the New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health." Prior to implementing the proposed EPA grant funded cleanup, the City will also significantly reduce threats to public health and environment through asbestos abatement, building and equipment decontamination, and building demolition. The demolition and subsequent environmental cleanup phase will also remove public health threats by eliminating the potential exposures to police, fire, public works and utility workers that have periodically needed to respond to site issues.

The planned site reuse is for industrial redevelopment consistent with current zoning and its prior use. The proposed end-use was a major factor in the remedy selection process and will continue to guide the implementation of institutional controls and monitoring during the site redevelopment. Long-term health and environmental threats from residual contamination that may be present after the cleanup is completed will also be mitigated. In addition to a NYSDEC environmental easement, the City's established brownfield institutional control program, the Building Permit Flagging System (BPFS), will be used to protect future site users and construction workers. The BPFS protects the integrity of site remediations and agreed upon land uses. It will require developers and future owners to comply with the site management plan as a condition of all future City permits and land use approvals. After completion of the remedial action, annual certifications regarding any engineering controls and an environmental easement will be required by the NYSDEC.

G.2. To what extent are you working with your state or tribal environmental authority...

The cleanup will be completed under the NYSDEC brownfield cleanup program and as will the operations, maintenance and monitoring phase activities in order to ensure the protection of public health and the environment. Rochester has and will continue to work closely with the Monroe County Department of Health and New York State health and environmental agencies. Under the ERP, the NYSDEC routinely makes referrals to and consults with the State and Monroe County Departments of Health on work planning, site investigations, remedy selection, cleanups, and reporting. The City has substantial experience in the NYSDEC ERP remedial program having received the first grant in 1997 and is currently working on four large ERP projects. Rochester also works to directly involve the health departments to ensure that health issues are addressed on its brownfield projects and regularly meets with the Monroe County Health Department Waste Site Advisory Committee. This committee includes NYSDEC, NYSDOH, county health, local sewer and environmental management agencies. A formal memorandum of agreement exists between the County health department and the NYSDEC regarding waste site information and decision making.

After site cleanup is completed and prior to redevelopment overlapping institutional controls will be established. The City institutional control system, the BPFS, will be initiated once an operations and maintenance plan is prepared as part of the site closure. The BPFS involves referrals to NYSDEC and Monroe County Department of Health when the City receives various building and construction permit applications for City cleanup sites where use limitations and engineering controls are in place. This is done to protect site users, construction

workers, and building occupants. This institutional control program has been used for over ten years and has become standard practice for City brownfield projects. In addition, the NYSDEC will require an environmental easement and deed restriction for the site. Annual certification requirements with regard to any engineering control systems and site monitoring requirements will also be required.

G.3. Describe the proposed cleanup plan for the site and the estimated costs to complete the cleanup.
The cleanup will be completed under the NYSDEC Environmental Restoration municipal brownfield cleanup program. (Prior to implementing the proposed EPA grant supported cleanup, the City will complete asbestos abatement and building demolition under a separately financed project.) Site remedial services will be performed through contractual professional environmental services. The cleanup includes four major tasks:

1. The first task is the preparation by an environmental consultant of the required draft and final remedial work plan including a Soil Management Plan, Community Air Monitoring Plan (CAMP), and a Health & Safety Plan (HASP), Quality Assurance/Quality Controls, submission & presentation to agencies, and any revisions needed for approval. These plans will be required by the NYSDEC and will be subject to county and state health department approvals. The work plan will address all site locations of concern. This task includes remedial design phase investigations and pilot testing of remedial techniques if required by the NYSDEC.

2. A Community Participation Plan (CPP) will be prepared for the remedial design and remedial action phase of the project and be submitted for NYSDEC approval. Community involvement will include activities such as phone calls to neighbors, community meetings, notices, presentations, and reuse planning. Opportunity will be provided for community involvement in the planning of the site redevelopment.

3. The remedial action will include removal of the tanks, treatment vault, and piping associated with the silver recovery system; removal of liquids from the silver recovery vault system; removal of contaminated soils associated with the chemical laboratory building, the silver recovery vault, areas impacted by waste management activities, and other miscellaneous locations with surficial and subsurface contamination. It is estimated that 15,800 tons of heavy metals and PAH contaminated soils will require transportation and off-site treatment/disposal. The soil remediation project phase is anticipated to require the installation of temporary exclusion zone fencing in several areas, excavation, confirmatory soil sampling, dewatering of excavations as necessary, backfilling, and compaction. Transportation and disposal will require waste characterization sampling, staging and loading operations. Excavation locations, removal depths, confirmatory sample locations, subsurface structures and other key features will be recorded using global position system (GPS) technology and transferred to the City's geographic information system. Active groundwater remediation is not required by the ROD, however a program to monitor natural attenuation of site contaminants in groundwater will be implemented. Site restoration activities will include placement of general and engineered fill, compaction, grading, topsoil, seeding and landscaping consistent with the required remedy and redevelopment concept.

4. The remedial action will conclude with the preparation of a draft and final remedial construction engineering reporting and groundwater monitoring program performance reporting required by the NYSDEC. This task will generate documentation of the cleanup, ongoing operations, maintenance and monitoring requirements including a site management plan, appropriate engineering controls and use restrictions. The City's institutional control, the building permit flagging system, will be also be used. City Environmental Quality staff will a prepare written activity use limitation (AUL) request for the property tax account number and address in the City's building information system. The AUL request will result in the electronic flagging of the parcel in the system as well as any future subdivided tax account parcels. The flag requires that all future permits and land use approvals conform to site management plan, engineering controls and other restrictions. Referrals will be made the

NYSDEC when a proposed action could conflict with these site controls. The NYSDEC will be granted and environmental easement to the site which will also be included in the BPFS.

The estimated cost of this remedial program is $1.77 million based on June 2006 estimates from the environmental consultant that completed the site Investigation/remedial alternatives report.

H. Leveraging of Additional Resources

H.1. Identify the funds (e.g., general revenues, tax increment financing (TIF), staff time/in-kind)...

The City has allocated a portion of its five-year capital improvement program (CIP) funding toward meeting the local share and balance of the cleanup costs. The proposed EPA cleanup grant will help the City complete the cleanup funding plan because the City currently does not have adequate capital funding to perform both site demolition and environmental remediation. In its current CIP, the City of Rochester has allocated general obligation debt of $1.5 million for site demolition and $1.57 million toward site remediation. The June 2006 estimate for the remediation phase exceeds the City's capital allocation by over $200,000. In addition to the debt funding allocation, $40,000 in cash capital has already been directed toward site reuse planning including preliminary site plan concepts, mass balance calculations, and an assessment of utility improvements that will be needed. A CIP request has also been submitted for preliminary engineering design for utility upgrades and improvements to the site entrance from Driving Park Avenue. An initial$300,000 street scape improvement project has already been funded for Driving Park Avenue, and the City's Economic Development Department is programming site preparation and marketing funds.

H. 2. Demonstrate your ability to leverage funds...

During the last seven years Rochester has used EPA grant funds to stimulate the investigation of over 65 acres of brownfields at 16 sites. These projects leveraged over $40 million dollars in additional private and public sector investment in cleanup and redevelopment. Resulting redevelopment projects have included a $27 million 15,000 seat professional soccer stadium and 200,000 square feet of industrial redevelopment on a former municipal landfill. The City recently secured $2.3 million in Restore New York grant funding for demolition and site preparation for several sites which is expected to leverage additional private investment. The City also has had success leveraging private investment at brownfield sites that are tax delinquent. In the most recent example, $25,000 in City site assessment activity is resulting in $1.8 million in private investor funding for cleanup and reuse of a tax delinquent 10 acre site that had been abandoned for over 15 years.

The City is also in the process of preparing a grant application to the NYS Environmental Restoration Program (ERP) for reimbursement of eligible remedial design and remedial action costs for the Photech site. ERP grants reimburse municipalities for up to 90% of eligible cleanup expenses. The ERP also provides important New York State indemnification of municipal recipients and all successors in title. The ERP program provides this indemnification without regard to whether grant funding is awarded. The City has previously leveraged this full indemnification to secure significant private sector investment including bank financing at a residential brownfield redevelopment site. Our experience suggests that the indemnification will stimulate private financing for the redevelopment of the Photech site. The City has been successful in securing NYS ERP grants at four other sites and as well as combining ERP grants with NYS brownfield opportunity area planning grants to address areas with concentrations of brownfields.

I. Programmatic Capability

I.1. Demonstrate your ability to manage this grant and successfully perform all phases ...

The City DEQ has over 15 years experience in managing New York State and federal EPA brownfield grants. In addition to completing its original EPA pilot assessment cooperative agreement, the DEQ is largely

complete with subsequent EPA assessment ($280,000) and has already completed one of two EPA cleanup grants ($400,000). DEQ is also initiating two new EPA cleanup grants ($400,000) for sites previously investigated using EPA assessment grant funding. DEQ is managing over $5 million in NYS 1996 Bond Act Environmental Restoration Program grant funds for four brownfield project sites in addition to the two NYS Brownfield Opportunity Area planning grants. DEQ also managed $6.2 million in grants for investigation and cleanup of a 21 acre NYS Superfund site that was redeveloped into a $26.4 million regional fire training facility. DEQ has received a small grant from ICMA for a study of the City's environmental institutional control system. DEQ staff collectively have over 65 years of experience in managing environmental assessment and cleanup projects. We plan to procure contractual professional remediation services and to manage selected consultants in accordance with City and EPA procurement requirements. DEQ and the City Purchasing Bureau will use well established advertising and request for proposal or public bidding procedures to hire environmental services in accordance with NYS General Municipal Law. In 2006 DEQ added additional grants management staffing.

Under its prior EPA cooperative agreements Rochester has several noteworthy accomplishments that leveraged significant outside investment. Under its first pilot assessment grant Rochester completed a remedial investigation, remedy selection, and remedial work plans for a key City-owned site, the Erie Canal Industrial Park (ECIP). The City then performed a City-funded $750,000 NYS voluntary cleanup of the site in 1998. The EPA assessment pilot funded work helped set the stage for reuse of the ECIP site as the new home for the Rochester Rhinos professional soccer team. The Rochester Rhinos opened the new 15,000 seat, $27 million soccer stadium on the ECIP site in June 2006. Stadium funding included more than $9 million in privately secured financing and more than $15 million from the State of New York. This is an excellent illustration of the importance that relatively modest EPA brownfield grants can make in building the momentum to transform brownfield problems into exciting new reuse opportunities. Using its assessment grants, Rochester established its Brownfield Assistance Program (BAP). During its first 5 years the BAP resulted in the investigation of over 50 acres of brownfields at 15 sites by the private sector. Over $17 million dollars has been leveraged with an additional $14.75 million possible in future redevelopment phases. More than 590 jobs have been retained and at least 226 jobs have been created. The City was awarded the 2006 Local Government Innovation Award from the New York State Conference of Mayors and was recognized by the National League of Cities for the BAP.

I.2. Describe your history of managing federal funds...

The City of Rochester has a well established program for management and accounting of both state and federal funds. Rochester has an established grant monitoring and audit process and has not received any adverse audit findings. Rochester is not required to comply with any special high risk terms and conditions described in OMB Circular A-102.

I.3. If you are, ... provide information regarding your compliance with quarterly progress...

Quarterly progress reporting, reporting measures and annual financial reports for the existing EPA assessment pilot are up to date and were generally made in a timely manner. Some quarterly reporting delays occurred during the six years of reporting for the assessment pilot grant, generally during hiring freeze related staff vacancies and during periods of low activity. Annual financial reporting was performed as required by the City's Accounting Bureau. New forms were provided when needed. The City's Quarterly reporting routinely links progress toward achieving grant output goals, for example, numbers of site assessments completed, to actual performance. Rochester frequently communicates progress and accomplishments to both its EPA Region 2 project manager and the Regional 2 Brownfield Coordinator. The City of Rochester completed it's pilot assessment BAP program and a report of program outcomes was prepared and submitted within the closeout time frame. Each BAP application was tracked during the pilot demonstration project and key milestone dates and accomplishments recorded. As a result, several useful parameters were calculated and include key findings related to the program demand, efficiency, costs and results were identified and reported.

Rochester's performance demonstrates that it is achieving the results expected from its cooperative agreements with EPA and is a successful ambassador for EPA's brownfield program. Using its first two assessment grants, Rochester established the Brownfield Assistance Program to provide direct financial assistance to the private sector. During its first four years the BAP resulted in the investigation of over 50 acres of brownfields at 15 sites by the private sector. Over $17 million dollars has been leveraged with an additional $14.75 million possible in future redevelopment phases. More than 590 jobs have been retained and at least 226 jobs have been created. Total BAP expenditures to date are under $200,000 for these projects. The City was awarded an additional $200,000 by the EPA in 2006 to continue this award winning private sector incentive program. EPA grant funded investigations have been completed at two City-owned sites, 935 West Broad Street and 399 Gregory Street. Successful progress on these sites led to EPA cleanup grant awards for each site in 2006. These cleanup projects are expected to be completed in 2007. An EPA cleanup grant funded project at 80-100 Charlotte Street was completed in 2006 making the site ready for market rate housing and a second EPA funded cleanup at 151-191 Mt. Hope Avenue on the Genesee River will begin in the spring of 2007. Rochester is also actively updating its Brownfield Cleanup Revolving Loan Program work plan and recently requested a no-cost time extension in order to transition to the RLF program established under the 2002 Small Business Liability Relief and Brownfield Revitalization Act.

I.4. Describe your plans for tracking and measuring progress towards achieving the expected outputs...
Rochester's plans for tracking and measuring its output and outcome progress are based on its well established grants and project management system. The City DEQ currently tracks EPA cooperative agreement actual work plan outputs against work plan estimates, and DEQ will continue to focus on delivering planned results in a timely manner. City DEQ project managers and consultants provide performance data and status information to the DEQ grants compliance coordinator. The grants compliance coordinator monitors financial, budget, environmental outputs and deliverables, and helps assemble output and outcome data for the Project Director to evaluate. Variances from expected cooperative agreement work plan progress are investigated and reported to EPA both informally and through required reporting.

The City already measures some outcome data such as numbers of sites and numbers of acres remediated each year. These data are tracked for all City brownfield sites and reported in the City's annual budget. Average remedial costs per acre are calculated based on intended future use (i.e. commercial/industrial versus residential) and are tracked as well. The City is also tracking outside and private sector site investment, increases in assessed valuation, and annual property tax revenues, and project specific job retention and creation specifically for its brownfield sites as part of the City's Rochester By the Numbers (RBN) performance management system. Such outcomes for the Photech site will be reported to EPA as sites progress through the cleanup and redevelopment phase.

New York State Department of Environmental Conservation
Division of Environmental Remediation, 12th Floor
625 Broadway, Albany, New York 12233-7011
Phone: (518) 402-9706 • **FAX:** (518) 402-9020
Website: www.dec.state.ny.us

Denise M. Sheehan
Commissioner

November 29, 2006

Mr. Mark D. Gregor, CHMM
Manager, Division of Environmental Quality
Department of Environmental Services
City of Rochester
30 Church Street, Room 300B
Rochester, NY 14614-1278

Dear Mr. Gregor:

This is to acknowledge that the New York State Department of Environmental Conservation (Department) received your notification of the City of Rochester, Department of Environmental Service's intention to apply for one United States Environmental Protection Agency (USEPA) Brownfields Cleanup Grant and one Community-wide Assessment Grant. If awarded, I understand that the City of Rochester plans to use the funds to conduct cleanup activities at a 1000 Driving Park site. The City also plans to use the Community-wide Assessment Grant funds to perform time sensitive site investigations within Brownfield Opportunity Areas in the City of Rochester..

The Department encourages initiatives to redevelop brownfields with the goal of mitigating any environmental and health impacts that they might pose. I applaud the City of Rochester's efforts to move this initiative forward.

Sincerely,

Dale A. Desnoyers

Dale A. Desnoyers
Director
Division of Environmental Remediation

cc: L. D'Andrea, USEPA

Mark Sluger

PHOTEC / 1000 DRIVING PARK

U.S. ENVIRONMENTAL PROTECTION AGENCY

PROGRESS POLLUTION REPORT

DATE: October 14, 1994

FROM: Michael Ferriola, OSC, USEPA Region II
Removal Action Branch Michael Ferriola

TO:
W. Muszynski, EPA
G. Pavlou, EPA
R. Salkie, EPA
G. Zachos, EPA
M. Pane, EPA
B. Carr, EPA
TAT
R. Burns, IG
K. Callahan, EPA
W. McCabe, EPA
J. Marshall, EPA
M. O'Toole, NYSDEC
M. J. Peachey, NYSDEC-Region 8
ERD, Washington (E-Mail)
T. Vickerson, NYSDEC

SUBJECT: Photech, Rochester,
Monroe County, New York

POLREP NO.: Eight (8) - Tanks & Drums

RECEIVED
DEC - 2 1994
NYS DEPT. OF ENVIR. CONSERVATION-REGION 8
(SUBSTS./REM.)

I. BACKGROUND

Site No.:	CZ
Delivery Order No.:	2002-02-007
Response Authority:	CERCLA/SARA
NPL Status:	N/A
State Notification:	NYSDEC notified
Action Memorandum:	Approved August 8, 1994
Start Date:	March 24, 1994
Demobilization Date:	October 13, 1994
Completion Date:	Pending

II. SITE INFORMATION

A. Incident Category

CERCLA Incident Category: Abandoned chemicals

B. Site Description

The Photech site is located at 1000 Driving Park Avenue, Rochester, New York. The site property, approximately 12.5 acres in size, is mostly covered by office and production buildings and/or paved. An intact security fence surrounds the property.

The area around the site is mostly industrial with some light to moderate residential areas beginning ¼ mile to the east and northeast of the property boundaries. The site is bounded by Driving Park Avenue to the west and south, and a box trailer storage yard to the east and south. A large General Motors plant

is situated on the opposite side of Driving Park Avenue. The site is located four miles north of the Rochester-Monroe County Airport, three miles southwest of Lake Ontario, and 1¼ miles west of the Genesee River. Highways 390 and 490 are located less than one mile from the site.

Photech operations consisted mainly of the manufacture of specialty photographic film. Research and Development operations were also present for testing various types of film. There are seventeen multi-level buildings on the property, including: R&D, Emulsion, Coating Alley, Chem Lab, Subcoat, Process, Dryer Addition, and Warehouse buildings, containing in excess of 100 different rooms. The remainder of the buildings are ancillary to the major operations.

2. Description of Threat

Oxidizers, flammable liquids, corrosives, poisons and toxic chemicals are currently being stored in deteriorating drums. Extremely reactive (temperature sensitive and explosive) laboratory chemicals are present. Aqueous tank liquids, contaminated with heavy metals (Cd, Ag, Pb, Cr), are stored in both above and below ground tanks.

As a result of the above conditions, a fire and explosion hazard, and a significant threat to human health and the environment exists.

III. RESPONSE INFORMATION

A. Planned Removal Actions

This phase of the removal action will entail disposal of hazardous wastes and substances in drums, above and below ground storage tanks, outdated photochemicals (corrosives) and recycling of unused raw materials. All drums and outdated photochemicals (corrosives) are presently located in the Building #13 warehouse. Aqueous tank liquids are currently being stored in their original vessels.

B. Situation

1. Current Situation

Raw materials and/or unopened chemical products continued to be returned to the original chemical manufacturers. One drum of Ethoquad C/25, an Akzo product, was returned to Akzo Chemicals located in McCook, Illinois for recycling. One drum from the Upjohn Company (Kalamazoo, Michigan) was transported to the Chemical Waste Model City landfill for disposal, in lieu of recycling/reuse. The Upjohn Company made all necessary arrangements for transportation and ultimate disposal.

ERCS circulated the contents of the T-2 underground storage tank to ensure the material was homogenous for off-site shipment. This activity was performed using a three (3) inch centrifugal pump and continued during the time period September 12th - 13th.

On September 14th, five (5) Clean Harbors tanker trucks arrived on site to transport all aqueous tank liquids to the Cleveland, Ohio wastewater treatment facility. A total of 25,150 gallons of water contaminated with cadmium, chromium, and silver were removed. Included in the 25,150 gallons was 1,700 gallons of the "NL" bulk liquid wastestream.

A 2½ foot thick layer of wood shavings and sludge was discovered during the liquid removal of tank T-2. The OSC calculated the volume of this material to be approximately 26 yd^3. A composite sample of this material was subsequently sent to a private laboratory for a complete TAL metals scan and TCLP metals analysis. The resident plant overseer stated that the wood chips were used as part of the treatment process for the silver recovery system. The OSC/TAT/ERCS immediately began researching recycling/disposal options.

ENSCO completed sampling and waste profiling of all drums and outdated photochemical wastes on September 13th. Samples and waste material data sheets were overnight shipped to their El Dorado, Arkansas facility for approval.

A transportation subcontractor to ENSCO, Tri State Motor Transit, arrived on site to pick-up the hazardous wastes and substances found in drums, and the outdated corrosive photochemicals. Two (2) box trailers were utilized to transport 20 pallets and 55 drums to the ENSCO facility located in El Dorado, Arkansas for incineration. All hazardous wastes and substances have now been removed from the Building #13 warehouse following the off-site shipment of the above listed materials.

The OSC and ERCS RM continued to call various RCRA TSDFs for incineration of the reactive laboratory chemicals. LWD, an incinerator located in Kentucky informed the OSC that they could not accept this material. BDT, located in Clarence, New York also had the same response for the reactive materials.

ERCS received a call from the Rollins Environmental Chempak group on September 16th in reference to the reactive laboratory chemicals. Rollins stated that they could package and incinerate all reactives at their Baton Rouge, Louisiana incinerator. ERCS was immediately tasked to provide prompt off-site disposal of this material.

2. Removal Actions to Date

Analytical data for the contaminated wood shavings/sludge was received on September 19th. The material was classified as a D006 cadmium waste because it failed the TCLP for this constituent.

Other major contaminants were chromium, lead, and silver. Due to a silver content of 1520 ppm, several smelters were contacted for reclamation of this precious metal. However, since the cadmium content was approximately 2.2%, none of the smelters were able to accept this material. Subsequently, the OSC and ERCS researched alternate disposal facilities for this material. A total of nine (9) different RCRA TSDFs were contacted for disposal acceptance and best available price.

On September 20th, Hyman Container Corporation was on-site to transport 301 RCRA empty drums to their Buffalo, NY facility for reclamation or total destruction.

ERCS solicited bids for vacuum truck and dewatering services for the contaminated wood shavings/sludge in the underground concrete silver recovery pit. A local clean-up contractor, Environmental Products and Services (EPS), was selected to vacuum the materials from the pit, dewater, and containerize into 55 gallon drums. This service was performed on October 5th & 6th. A total of 45 solids drums and 1600 gallons of liquids were generated as a result of this activity. EPS utilized confined space entry procedures and Level C PPE to perform this service. All operations were conducted without incident.

On October 6th, 45 drums containing the cadmium contaminated wood shavings/sludge were transported off-site to the ENSCO, El Dorado, Arkansas facility for incineration.

Two chemists from the Rollins Chempak group arrived on October 5th to stabilize and package the eleven reactive laboratory chemicals for incineration. The chemicals were first checked for their stability in water. Next, each container was diluted with water to a 10% solution and individually labpacked for off-site incineration. A total of twelve (12) labpack containers were generated and shipped off-site for incineration at the Rollins facilities in Bridgeport, NJ and Baton Rouge, La.

On October 12th, a transporter for Clean Harbors, Franks Vacuum Service, transported 1600 gallons of aqueous tank liquids to the Clean Harbors, Cleveland, Ohio facility for wastewater treatment. The 1600 gallons of aqueous tank liquids were the remaining liquids generated from the sludge dewatering operation conducted on October 5th - 6th.

Demobilization activities for the site were completed on October 13th.

3. Enforcement

The EPA has identified the former PHOTECH owner as a PRP. To date, the Program Support Branch and Office of Regional Counsel (ORC) are actively trying to contact this PRP. Due to the time critical nature of this request, a prompt removal action was undertaken to protect public health and the environment. Efforts

to locate the PRP will continue to support cost recovery efforts and possible PRP involvement in any future response actions.

C. Next Steps

With the completion of all activities outlined in the Action Memorandum, proposed action description section, the Photech site will be referred back to the New York State Department of Environmental Conservation.

D. Key Issues

Upon receipt of signed manifests from Rollins, ENSCO, and Clean Harbors, the removal action will have been officially completed.

All laboratory size containers, grossly contaminated glassware, drums, raw materials, storage tank liquids and solids, and outdated photochemicals have been removed for off-site disposal or recycling/reuse. Residual contamination, however, still does exist in the various laboratories, R & D areas, and production buildings. Additionally, above and below ground storage tanks are not certified "clean".

With the completion of this phase of the removal action, all objectives set forth in the Action Memorandum have been achieved.

IV. COST INFORMATION

	Amount Budgeted	Cost To Date
ERCS Contractor (w/ 20% contingency)	$ 401,000	$ 339,374
TAT	$ 44,000	$ 26,710
EPA Intramural (HQ and Region)	$ 65,000	$ 60,466
Extramural Contingencies	$ 67,000	$ 0
TOTALS	$ 577,000	$ 426,550
Percent of Project Funds Remaining		26.1 %

The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written, the OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

V. DISPOSITION OF HAZARDOUS SUBSTANCES

WASTE STREAM	MEDIUM	QUANTITY	CONTAINMENT-MIGRATION CONTROL	TREATMENT	DISPOSAL
Reactive laboratory chemicals	Liquid & Solid	11-5 gallon, 1-20 gallon fiber	Fiber Drum	Incineration	Rollins Inc, Baton Rouge, Louisiana & Bridgeport, NJ
Wood shavings/sludge (Cd, Ag, Cr, Pb)	Solid	45-55 Gallon steel drums	Drum	Incineration	ENSCO, El Dorado, Arkansas

Fax Cover Sheet

Name:	Lya Theodoratos
Organization:	U. S. EPA, Region 2
Fax:	212-637-3083
Phone:	212-637-3260
From:	Vicki Brawn
Date:	January 24, 2007
Subject:	Photech foreclosure deed
Pages:	3

☐ Urgent ☐ Reply ASAP ☐ Please Comment ☒ For Your Records

Comments: [Comments]

As requested, attached is the foreclosure deed for Photech. If you need further information, let me know.

From the desk of...

Vicki Brawn
City of Rochster
DES/Environmental Quality
30 Church Street - Room 300B
Rochester, NY 14614

585-428-6294
(Fax) 585-428-6010

MONROE COUNTY CLERK'S OFFICE
County Clerk's Recording Page

[redacted]

Return To:

CITY OF ROCHESTER
30 CHURCH STREET
ROCHESTER NY 14614

Index DEEDS
Book 08903 Page 0379
No. Pages 0002
Instrument DEED
Date : 8/11/1997
Time : 11:50:00
Control # 199708110362

COMIDA PHOTECH IMAGING SYSTEMS

ROCHESTER CITY OF

TT# TT 0000 000552
Employee ID KD

FILE FEE-S	$	26.75
FILE FEE-C	$	8.25
REC FEE	$	6.00
	$	.00
TRANS TAX	$	.00
MISC FEE-C	$	5.00
	$	.00
	$	.00
	$	.00
Total:	$	46.00

MORTGAGE TAX

TRANSFER AMT	$	.00
BASIC MTG TAX	$	.00
SPEC ADDIT MTG TAX	$	.00
ADDITIONAL MTG TAX	$	.00
Total	$	.00

STATE OF NEW YORK
MONROE COUNTY CLERK'S OFFICE

WARNING - THIS SHEET CONSTITUTES THE CLERKS ENDORSEMENT, REQUIRED BY SECTION 316-a(5) & SECTION 319 OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK. DO NOT DETACH

TRANSFER TAX

TRANSFER AMT	$	.00
Transfer Tax	$	.00

Maggie Brooks, County Clerk

D089030379

[090-63-01-01]
1000 Driving Park Ave.

TAX FORECLOSURE DEED

Made this 7th day of August, 1997, between LINDA S. KINGSLEY, as Corporation Counsel of the City of Rochester, with offices at 400A City Hall, Rochester, New York 14614, grantor, and CITY OF ROCHESTER, a municipal corporation with offices at 30 Church Street, Rochester, New York 14614, grantee,

WITNESSETH:

WHEREAS, an action entitled "In the Matter of the Foreclosure of Tax Liens Pursuant to Title 4 of Part E of Article IX of the Charter of the City of Rochester - List of Delinquent Taxes as of July 1, 1996", Index No. 3430/97, was duly brought in Supreme Court, Monroe County, by the Corporation Counsel for the foreclosure of certain tax liens, by the due filing of a List of Delinquent Taxes in the office of the Monroe County Clerk on April 3, 1997, and due publication of public notice of foreclosure on April 3, 1997, and other subsequent dates, and due mailing thereof to owners and lienors of all property affected, and

WHEREAS, at a term of the said court held at the Hall of Justice, in the City of Rochester, New York on June 18, 1997, a Judgment was duly rendered, wherein it as adjudged, among other things, that the parcel listed on said Judgment be sold at public auction pursuant to Section 9-143 of the City Charter, and that the grantor, as Corporation Counsel of the City of Rochester, execute and deliver a deed for each parcel, conveying to the purchaser at the auction title to the parcel, and

WHEREAS, the said Judgment was duly entered in the Monroe County Clerk's Office on June 26, 1997, and

WHEREAS, a public auction was duly conducted by the City Treasurer on July 30, 1997, pursuant to the above-referenced Judgment, and the grantee submitted the highest responsible bid on the parcel or parcel of property listed below, and has duly paid the amount of such bid to the City Treasurer,

NOW, THEREFORE, the grantor, by virtue of and in pursuance of the aforesaid Judgment and the provisions of the Charter of the City of Rochester, does hereby grant and convey unto the grantee, the grantee's successors and assigns, a full and complete title in and to:

All that Tract or Parcel of Land, situate in the City of Rochester, County of Monroe, and State of New York, more particularly described as:

SBL NO.	ADDRESS	FORMER OWNER'S NAME
090.63-1-01	1000 Driving Park Avenue	COMIDA-Photech Imaging Systems, Inc.

free and clear of all liens and encumbrances which existed at the time of the above-referenced public auction,

TO HAVE AND TO HOLD, all and singular, the premises above mentioned and described and hereby conveyed unto the grantee, the grantee's successors and assigns forever.

IN WITNESS WHEREOF, the grantor has hereunto set her hand the date and year first above written.

LINDA S. KINGSLEY
Corporation Counsel

RECORDED
AUG 11 1997
COUNTY CLERK

STATE OF NEW YORK)
COUNTY OF MONROE) SS:
CITY OF ROCHESTER)

On this 7th day of August, 1997, before me, the subscriber, personally appeared LINDA S. KINGSLEY, Corporation Counsel of the City of Rochester, to me known to be the person described in, and who executed, the within Instrument and she acknowledged to me that she executed the same.

SUZANNE C. SUTERA
Notary Public in the State of New York
MONROE COUNTY
Commission Expires Oct. 16, 1997

TAX BILLING ADDRESS: 30 Church Street
Rochester, New York 14614

R+R

Environmental Data

Department of Environmental Conservation

Division of Environmental Remediation

Environmental Restoration
Record of Decision
Former Photech Imaging Site
Rochester, Monroe County, New York
Site Number B-00016-8

March 2006

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* DENISE M. SHEEHAN, *Commissioner*

DECLARATION STATEMENT
ENVIRONMENTAL RESTORATION RECORD OF DECISION

Former Photech Imaging Environmental Restoration Site
City of Rochester, Monroe County, New York
Site No. B-00-016

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Former Photech Imaging site, an environmental restoration site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law 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 (NYSDEC) for the Former Photech Imaging environmental restoration site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and/or the environment.

Description of Selected Remedy

Based on the results of the Site Investigation/Remedial Alternatives Report (SI/RAR) for the Former Photech Imaging site and the criteria identified for evaluation of alternatives, the NYSDEC has selected excavation and off-site disposal of contaminated soils and groundwater monitoring. The components of the remedy are as follows:

- A remedial design program;
- Asbestos abatement, building and equipment decontamination, and building demolition;
- A design-phase investigation;
- Removal of the silver recovery system;
- Excavation and off-site disposal of contaminated soils;

- Development of a site management plan;
- Imposition of an environmental easement;
- Periodic certification of the institutional and engineering controls; and
- Implementation of a long-term groundwater monitoring plan.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected 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.

MAR 31 2006

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

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Environmental Restoration
RECORD OF DECISION

Former Photech Imaging Site
City of Rochester, Monroe County,} New York
Site No. B-00016-8
March 2006

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the Former Photech Imaging site. The presence of hazardous substances has created threats to human health and/or the environment that are addressed by this remedy.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Under the Environmental Restoration (Brownfields) Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated the property can then be reused.

As more fully described in Sections 3 and 5 of this document, manufacturing operations of photographic film and paper have resulted in the disposal of hazardous substances, including polycyclic aromatic hydrocarbons (PAHs) and metals. These hazardous substances have contaminated the groundwater and soil at the site, and have resulted in:

- a threat to human health associated with potential exposure to polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) and metals in soils and groundwater.
- an environmental threat associated with the impacts of PAHs and metals in groundwater.

To eliminate or mitigate these threats, the NYSDEC has selected the following remedy to allow for commercial/industrial use of the site:

- A remedial design program to provide the details necessary to implement the remedial program;
- Asbestos abatement, building and equipment decontamination, and building demolition including removal of basements and tunnels;
- A design-phase investigation to delineate the extent of soil contamination, and to confirm the extent of groundwater contamination;

- Removal of the silver recovery system;
- Excavation and off-site disposal of contaminated soils;
- Development of a site management plan to address residual contamination and any use restrictions. The site management plan would also require an evaluation of the potential for vapor intrusion in any buildings to be developed on the site;
- Imposition of an environmental easement;
- Periodic certification of the institutional and engineering controls; and
- Implementation of a long-term groundwater monitoring plan .

The selected remedy, discussed in detail in Section 8, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially 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.

SECTION 2: SITE LOCATION AND DESCRIPTION

The former Photech Imaging Systems, Inc. property (Site) is located at 1000 Driving Park Avenue in a commercial/industrial-zoned area in the northwest quadrant of the City of Rochester, Monroe County. The site is comprised of 12.5 acres of land that include a total of 15 buildings comprising approximately 108,000 square feet of space. These buildings formerly housed various manufacturing, laboratory, office, and warehouse operations. A series of below ground tunnels connect several buildings. Various underground (UST) and aboveground storage tanks (AST), a below ground silver recovery system and associated wastewater system piping were formerly used at this facility. Other features of the Site include a former burn pit area, a retention pond basin, asphalt parking lots, and three wooden shed-like structures.

The Site is currently bound by: Driving Park Avenue to the south; Holleder Industrial Park to the north; Rochester Distribution Unlimited, Inc. to the east; and Electronic Media Solutions, Inc. to the west. Directly to the south of Driving Park Avenue is the Delphi manufacturing facility. The Delphi property is currently listed in the Registry of Inactive Hazardous Waste Sites as a class 2. The Photech Site is approximately 1000 feet east of Mt. Read Boulevard and 2 miles east of Interstate Route 390. Please refer to Figures 1 and 2 for a site location and a site plan.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The Site was originally developed in 1948 for manufacturing photographic film and paper. Several different companies have owned and operated the facility at the Site for photographic paper and film production since its construction in 1948. The most recent owner, Photech

Imaging Systems, Inc., ceased operations and abandoned the facility in 1991. Large amounts of chemicals, wastes, and various supplies and materials were left "as-is" on-site when the facility was abandoned. In 1994, the NYSDEC and the United States Environmental Protection Agency (USEPA) performed a bulk waste and chemical removal action at the Site. This work successfully removed bulk chemicals from the facility; however, tanks were not certified as "clean"; small containers of chemicals were left in some of the buildings; and residual chemicals remain in some process vessels and piping. Since the removal action, the buildings have been vandalized, with ceilings, walls, piping and equipment severely damaged. As a result, asbestos and chemical residues are suspected to be present in many interior areas of the buildings. Additionally, the roofs have failed on several of the buildings and there was a fire in 2004 in the former warehouse portion of the facility. Due to the extreme state of dilapidation, all of the structures will need to be razed prior to any site remediation or development.

3.2: Remedial History

Burn Pit Cleanup

Anecdotal information exists regarding a reported 'cleanup' performed by the former owners sometime in the 1970's or 1980's. This cleanup reportedly involved the removal and off-site disposal of solid waste from the former retention pond and burn pit area.

1986 Site Audit

An independent contractor completed a site audit in 1986. The audit included a detailed environmental inspection of the plant, a review of waste handling practices, and the completion of a limited number of soil borings, and limited groundwater sampling. The most significant findings of the 1986 audit included:

- The former underground wastewater silver recovery vault located adjacent to the Research and Development Building had not contributed to any soil or groundwater contamination in the immediate area;
- One or more of the underground fuel tanks leaked into the surrounding soil;
- The underground 500-gallon waste methanol tank piping had failed; and
- The facility waste handling practices required upgrading or modification to meet regulatory requirements.

Bulk Chemical and Waste Removal Projects

After closing in 1991, the previous owner of the Photech facility did not perform a facility closure to remove and dispose of chemical material and wastes. As a result, the Photech site contained an assortment of abandoned oxidizers, reactive chemicals, flammable liquids, corrosives, poisons, and shock sensitive chemicals that were stored both inside and outside of facility buildings. Many of these chemical materials were stored in deteriorating containers and

in unsafe conditions. Subsequent to the closing of the facility, the NYSDEC completed several small interim remedial measures such as removing and disposing of hazardous wastes and relocating chemical products (i.e. glycols) to a more secure interior staging area.

In 1994, the NYSDEC and the USEPA performed a bulk waste and chemical removal action at the Site. A wide variety of hazardous wastes, process chemicals, and laboratory chemicals stored at the property were removed and shipped off-site for proper disposal. The contents of numerous drums and tanks stored on-site were emptied and/or removed from the site. This project successfully removed the bulk chemicals from the facility.

SECTION 4: ENFORCEMENT STATUS

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

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. The City of Rochester will assist the state in its efforts by providing all information to the state which identifies PRPs. The City of Rochester will also not enter into any agreement regarding response costs without the approval of the NYSDEC.

SECTION 5: SITE CONTAMINATION

The City of Rochester has recently completed a site investigation/remedial alternatives report (SI/RAR) to determine the nature and extent of any contamination by hazardous substances at this environmental restoration site.

5.1: Summary of the Site Investigation

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site. The SI/RAR was conducted between November 1998 and May 2005. The field activities and findings of the investigation are described in the SI/RAR report. The following activities were conducted during the SI:

- Performed a Phase I site assessment in accordance with American Society for Testing and Materials (ASTM) E 1527-97. This assessment included several interviews with the former Plant Engineer for the Photech facility;

- Conducted an asbestos survey and sampling program inside the buildings. The sampling consisted of 26 wipe samples and 212 bulk samples for asbestos analyses;

- Conducted a building and equipment decontamination survey to assess residual chemical contamination inside the building. The sampling program consisted of 110 wipe samples and 32 bulk samples for chemical analysis;

- Cleaned, removed and disposed of four aboveground storage tanks (ASTs);

- Excavated and removed the buried spill containment drum from the former hazardous waste storage area;

- Installed forty (40) soil borings and ten (10) monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions;

- Sampled shallow subsurface soils (0-9" below ground surface) at seventeen (17) locations; and

- Soil and groundwater sampling at ten monitoring well locations.

To determine whether the soil and groundwater contain contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on NYSDEC "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the NYSDEC "Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels". The site-specific cleanup level for cadmium in TAGM 4046 is 1 ppm. Cleanup of cadmium to this level will remediate silver in soils to levels that are protective of human health and the environment.

Based on the SI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized below. More complete information can be found in the SI report.

5.1.1: Site Geology and Hydrogeology

The overburden material and geology underlying the Site consists of variably textured lacustrine, glaciolacustrine, and till deposits that overlie Rochester Shale bedrock. The depth to bedrock ranges from 8 to 20 feet below ground surface. The deepest point for bedrock was adjacent to the underground tunnel at Well-06. This suggests that bedrock may have been blasted or excavated for construction of these tunnels. Ten groundwater monitoring wells were constructed at the bedrock/overburden interface. Groundwater occurs within the overburden at all locations and appears to flowing radially inward to the site towards Well-06. Groundwater flow direction appears to be influenced by the underground tunnels and drainage systems on-site. Rising head hydraulic conductivity values range from 1.42×10^{-4} cm/ s to 1.05×10^{-2} cm/s.

5.1.2: Nature of Contamination

As described in the SI/RAR report, many soil and groundwater samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main

categories of contaminants that exceed their SCGs are semivolatile organic compounds (SVOCs), and inorganics (metals).

The SI/RAR identified six areas of concern (AOCs) on the Site and evaluated each separately. These areas are shown in Figure 2 and are as follows:

AOC1 - East of Chemical Lab Building #11
AOC2 - Silver Recovery Vault Area
AOC3 - Eastern Portion of the Site
AOC4 - Miscellaneous Areas
AOC5 - Asbestos Containing Materials
AOC6 - Residual Chemicals inside buildings

SVOCs identified at the site include the following polycyclic aromatic hydrocarbons (PAHs) in soils: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenz(a,h)anthracene. PAHs can be associated with waste oil, creosote (preservative for railroad ties, telephone poles and piers), stripped paint, incinerator ash, incomplete combustion of fossil fuels, and natural sources such as in petroleum and smoke from fires, etc.

Inorganic elements (metals) identified at the site include: cadmium, chromium, lead, nickel, selenium, silver, and zinc.

Other contaminants detected on-site include very low levels of volatile organic compounds (VOCs) in soils and groundwater. No significant source of VOCs was detected on-site.

5.1.3: Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated. The findings are presented by both areas of concern (AOCs) and by media. Please refer to Figure 2 which identifies the AOCs; Figures 3 & 4 which describe soil contamination; and Tables 3 & 4 which summarize groundwater contamination.

AOC1

East of Chemical Lab Building #11: Concentrations of the following metals: cadmium; nickel; selenium; and zinc, and the following PAHs benzo(a)anthracene; chrysene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenzo(a,h)anthracene exceeded SCGs in shallow subsurface soils. PAHs detected in subsurface soils are as follows: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; indeno(1,2,3-cd)pyrene; and dibenzo(a,h)anthracene. The highest levels of PAHs were detected in the subsurface soil sample collected from the soil boring at Well 06 (WS-06). The extent of contamination has not been fully defined in this area. Additional investigation will be required after Building #11 is demolished. Please refer to Figure 3 for the estimated extent of soil contamination.

AOC2

Silver Recovery Vault Area: The liquid contents of the underground concrete silver recovery vault have high enough levels of silver to be considered a characteristic hazardous waste. The integrity of the recovery vault is suspect. Leakage from this silver recovery system appears to have resulted in releases to adjacent subsurface soil and groundwater. Some of the subsurface soil samples in proximity to the underground silver recovery vault contain concentrations of benzo(a)pyrene, cadmium, copper, nickel, selenium and silver that exceed SCGs. The highest site-wide concentrations of metals in soils are located adjacent to the silver recovery vault. These highest concentrations are as follows: cadmium at 6,320 ppm and silver 846 ppm. Groundwater in the vicinity is contaminated with cadmium, chromium, silver, and selenium at concentrations that exceed SCGs. The full extent of metals and SVOC contamination in this area has not been fully defined. Additional investigation will be required after Building #1 is demolished. Please refer to Figure 3 for the estimated extent of soil contamination.

AOC3

Eastern Portion of the Site: Former operations at various areas on the eastern portion of the Site appear to have contributed to intermittent contamination of shallow subsurface soil, subsurface soil, and groundwater on the eastern portion of the Site. It appears that the extent of contamination is generally irregular. In many cases, soil and groundwater sample results did not exceed SCGs. The operations include the following areas:

Former open burn pit area: The burn pit was located within the limits of the former retention pond. SCGs were exceeded in subsurface soils for cadmium, nickel, selenium and zinc;

Former retention pond: Solid waste was burned and/or dumped in a portion of the pond area. SCGs in subsurface soils were exceeded for cadmium, chromium, lead, nickel, selenium and zinc. Groundwater is contaminated with lead, silver and zinc;

Former film incinerators: Subsurface soils are contaminated with the following PAHs and metals that exceed SGCs: benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, nickel and selenium. Groundwater is contaminated with 1,1-dichloroethane, arsenic, beryllium, chromium, copper, iron, lead, silver and zinc.

Former transformer pad area: Shallow subsurface soils are contaminated with cadmium and silver above SCGs and the following PAHs: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenzo(a,h)anthracene. No PCBs were detected.

Retention pond cement culvert discharge area: Shallow subsurface soils are contaminated with cadmium above SCGs and the following PAHs that exceed SCGs: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenzo(a,h)anthracene.

Former UST(s): Subsurface soils are contaminated with benzo(a)pyrene above SCGs.

Former concrete drywell area: Groundwater is contaminated with 1,1,-dichloroethane and selenium.

Please refer to Figure 4 for the estimated extent of soil contamination

AOC4

Miscellaneous Areas: Operations at various miscellaneous areas of the Site (i.e., areas not included as part of other AOCs) appear to have contributed to intermittent contamination of shallow subsurface soil, subsurface soil, and groundwater at the Site. It appears that the extent is generally irregular. In many cases, soil and groundwater sample results did not exceed SCGs. The operations include the following areas:

Former hazardous waste storage area: There is a shed located along the western property line that included a buried spill containment drum. Shallow subsurface soils are contaminated with selenium at 2.47 ppm in the vicinity of the former spill containment drum. Please refer to Figure 2 for the spill containment drum location.

Former Waste Methanol tank area: Groundwater is contaminated with cadmium and zinc.

AOC5

Asbestos Containing Materials: The purpose of the facility-wide asbestos survey was to identify areas with regulated asbestos-containing materials (ACM) within the buildings. The asbestos survey found ACM present inside most of the buildings at the Photech facility. Specific information on the sampling conducted, locations, quantities, and types of materials can be found in the asbestos survey report in Appendix F of the SI/RAR report. Asbestos abatement will need to be performed prior to demolition of all on-site structures.

AOC6

Residual Chemicals: Many of the buildings contain waste/process materials and have impacted building materials. Based on bulk sampling, some of the waste/process materials will require disposal as characteristic hazardous waste.

Contaminants by Media

Chemical concentrations are reported in parts per billion (ppb) for groundwater and parts per million (ppm) for soil. For comparison purposes, where applicable, SCGs are provided for each medium.

Table 1 summarizes the degree of contamination for the contaminants of concern in shallow subsurface soil, subsurface soil, and groundwater and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Shallow Subsurface Soil
(0-9" below ground surface)

VOCs

Very low levels of VOCs were detected at 10 of 15 shallow subsurface soil samples locations. The concentrations were all estimated to be less than 6 ppb and are well below SCGs.

SVOCs

SVOC test results indicate that PAHs exceed SCGs in 7 of 16 shallow subsurface soil sample locations. The following PAHs exceed SGCs: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenzo(a,h)anthracene. These sample results are in AOC1 and AOC3 in the following locations: the scupper drain discharge location near Building #11 (AOC1); the former transformer pad (AOC3); and the cement culvert discharge area north of the former retention pond (AOC3).

Metals

Metals detected exceeded SCGs in 15 of the 17 shallow subsurface soil locations analyzed for metals. The metals of concern that exceeded SCGs include: cadmium, nickel, selenium and silver. Zinc concentrations exceed the TAGM 4046 SCG of 20 ppm in 15 of the shallow subsurface soil locations. Sample results at one or more of the locations along the east side of Building #11 in proximity to scupper drain discharge (AOC1) have concentrations of cadmium, nickel, selenium, and zinc exceeding SCGs. Concentrations of selenium and zinc exceed SCGs near the former hazardous waste storage shed (AOC4); concentrations of silver and cadmium exceed SCGs at the transformer pad (AOC3); and concentrations of cadmium exceed SCGs at the cement culvert discharge area north of the former retention pond (AOC3).

Please refer to Figures 3 & 4.

Subsurface Soil

Subsurface soil samples were collected from forty(40) soil boring locations and ten(10) monitoring well locations. Samples were tested for one or more of the following parameters: VOCs, SVOCs, TCLP metals, target analyte list (TAL) metals, total petroleum hydrocarbons (TPH), and alcohols. The detected concentrations of these parameters were compared to SCGs in NYSDEC TAGM 4046.

VOCs

Very low levels of VOCs were detected in 9 of 42 soil samples. The concentrations of specific and total VOCs were well below SCGs. There is no apparent source areas of VOCs in subsurface soils.

SVOCs

Sample results indicated that concentrations of PAHs exceeded SCGs in 4 of the the 38 samples analyzed for SVOCs. Total PAH concentrations ranged from an estimated 1.6 ppm to 140 ppm at these locations. The highest concentration of PAHs was detected in the soil boring for Well-06 (WS-06) in AOC1 near Building #11. The following PAHs exceeded SGCs: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; indeno(1,2,3-cd)pyrene; and dibenzo(a,h)anthracene. The other locations where PAH concentrations exceeded SCGs are as follows:

Sample GS-16, silver recovery vault: Total PAH concentration of 1.6 ppm (AOC2);

Sample GS-07, former fuel oil USTs: Total PAH concentration of 1.7 ppm (AOC3); and

Sample GS-50, former film incinerator: Total PAH concentration of 5.1 ppm(AOC3).

Please refer to Figures 3 & 4 for these sample locations.

Metals

Metals contamination in subsurface soil at the Site is predominant in AOC2 (silver recovery vault area) and AOC3 (eastern portions of the site). The metals in subsurface soils that exceed SCGs at the site are: cadmium, chromium, lead, nickel, selenium, silver, vanadium, and zinc. The highest concentration of metals is located adjacent to the silver recovery pit (AOC2) in sample GS-17 with cadmium at 6,320 ppm and silver 846 ppm. SCGs for selenium (3.2 ppm) and nickel (23.9 ppm) were also exceeded at this location. In addition, the soil sample from the boring for Well-01 (WS-01) had cadmium concentrations of 720 ppm. TCLP analysis of this sample did not fail hazardous waste characteristics.

SCGs for cadmium, chromium, lead, nickel and zinc were exceeded at one or more of the following four locations within AOC3.

Sample GS-01, former open burn pit area: cadmium, nickel, selenium, and zinc;

Sample GS-03, former retention pond area: chromium, nickel, selenium, and zinc;

Sample GS-39, former open burn pit area: cadmium, lead, nickel, and zinc; and

Sample GS-50, former film incinerator: nickel and selenium.

Please refer to Figures 3 & 4.

Groundwater

Two rounds of groundwater samples were collected from each of the ten well locations. The first round of sampling was conducted in January 2000 and samples were analyzed for one or more of the following parameters: VOCs, SVOCs, Metals, and alcohols. The second round of sampling was conducted in May 2005 and samples were analyzed for VOCs and metals. Please refer to Figure 5 for well locations and Tables 3 and 4 for groundwater contaminant concentrations.

VOCs

With the exception of Well-09 and Well-08 very low levels of VOCs were detected in site groundwater. SCGs were exceeded for 1,1-dichloroethane in Well-09 and trichloroethene in Well-08.

SVOCs

Very low levels of the following PAHs were detected in Well-06: naphthalene; benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and indeno(1,2,3-cd)pyrene. Concentrations were reported as "J" values and are estimated to be just above SCGs.

Metals

The following metals were detected above SCGs in the first round of sampling: arsenic, cadmium, chromium, lead, nickel, selenium, and silver. In the second round of sampling the only metals exceeding SCGs were cadmium and silver. The variability of these sampling events may be due to sample turbidity. The second round of sample data does appear to be more consistent with the on-site soils data. In both rounds, the highest concentration of metals was in Well-01 near the silver recovery vault (AOC2).

5.2: 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 completion of the SI/RAR.

Several IRMs were conducted in conjunction with the completion of the SI/RA project. The objective of the IRMs were to mitigate any potential human health and environmental risks related to aboveground and underground tanks. The IRMs included closure of the following four aboveground storage tanks (ASTs):

- A 10,000-gallon steel fuel oil AST
- A 10,000-gallon virgin methanol AST
- A 2,500-gallon virgin methanol AST
- A 2,500-gallon waste methanol AST

The scope of the IRMs also included removal of suspected underground structures: A 500-gallon steel waste chemical tank; a concrete vault structure of unknown size; and a containment drum used to collect runoff and drainage from the former hazardous waste storage shed structure.

All of the ASTs and their associated secondary containment structures were removed and disposed of off-site. Confirmatory soil sample results beneath the ASTs showed no contamination.

The two suspected underground structures could not be located. Three test pits were excavated identifying a former concrete tank saddle and straps and some associated piping. No tanks or vaults could be located. Confirmatory soil sample results did not show any contamination.

The spill containment drum and its contents were removed from the former hazardous waste storage area and disposed of off-site. Confirmatory soil sample results did not show any significant contamination.

5.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 7.0 of the SI/RAR report.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.
The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

There are no confirmed complete pathways that are known to exist either on-site or off-site at this time. Public water serves the area; therefore, ingestion of contaminated groundwater used for drinking water is unlikely. The following receptor populations potentially may be exposed to site contaminants:

- Persons in contact with SVOCs and metals in shallow subsurface soils identified in AOC1, AOC3 and AOC4;
- Future site workers in contact with SVOCs and metals in shallow subsurface and subsurface soils during excavation/construction activities; and
- Future site workers and future building occupants in contact with SVOCs, VOCs and metals from contaminated groundwater.

The primary potential pathways of exposure to site contaminants include the following:

- Direct contact or incidental ingestion of contaminated soils;
- Inhalation of contaminated dust generated during construction activities;
- Direct contact or accidental ingestion of contaminated groundwater; and
- Inhalation of VOCs in the indoor air of future site buildings through vapor intrusion.

Potential exposure pathways require remediation and/or controls. Since it is planned that this property will be redeveloped, remediation and/or controls will also be required to mitigate the potential future exposure pathways.

5.4: Summary of Environmental Impacts

This section summarizes the existing and potential future environmental impacts presented by the site. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

The site is in a commercial/industrial setting and there are no significant environmental resources located (i.e. wetlands, streams, habitats) in the vicinity of the site. Soils contamination appears to be limited to the site boundaries.

Site contamination has impacted the groundwater resource in the overburden/bedrock unit. Groundwater is not used as a drinking water source. Furthermore, the City of Rochester has an ordinance prohibiting groundwater use as a potable drinking water source.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS AND THE PROPOSED USE OF THE SITE

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous substances disposed at the site through the proper application of scientific and engineering principles.

The proposed future use for the Former Photech Imaging Site is commercial/industrial.

The remediation goals for this site are to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to metals and PAHs in on-site soils and groundwater;
- the release of contaminants from soil or groundwater into indoor air of future overlying buildings through vapor intrusion;
- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and
- the release of contaminants from shallow subsurface soil into storm drainage systems through storm water erosion.

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient groundwater quality standards;

- Soil cleanup levels in TAGM 4046 for surface and subsurface soils; and

- The site-specific cleanup level for cadmium in TAGM 4046 is 1 ppm. Cleanup of cadmium to this level will remediate silver in soils to levels that are protective of human health and the environment.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements. Potential remedial alternatives for the Former Photech Imaging Site were identified, screened and evaluated in the RA report which is available at the document repositories identified in Section 1.

A summary of the remedial alternatives that were considered for this site are discussed below. The present worth 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.

7.1: Description of Remedial Alternatives

The following potential remedies were considered to address the contaminated groundwater and soils at the site.

AOC1: East of Chemical Lab Building #11

AOC1 - Alternative #1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

AOC1-Alternative #2: Institutional Action with Delineation

Present Worth: $350,865
Demo and Asbestos Cost $306,000
Capital Cost: $31,030
Annual OM&M $900

Under this alternative, institutional controls (i.e., environmental easements) , and development of a site management plan (SMP) including a health and safety plan (HASP) would be implemented to protect against exposure and also control Site use. In addition, this area of concern would be

fully delineated under a design-phase investigation. Asbestos abatement, decontamination, and demolition of Building #11 would be completed prior to the investigation work because it is assumed that soil contamination extends beneath this building. This remedy could be designed and implemented in 12 to 18 months.

AOC1 - Alternative #3: Soil Cover

Present Worth	$416,770
Capital Cost	$101,500
Demo and Asbestos	$306,000
Annual OM&M	$9,270

Under this alternative, the institutional controls, SMP, and design-phase investigation work described above would be implemented for this area of concern. In addition, a cover consisting of a minimum 1-foot of clean soil and/or a low permeability paved surface would be placed over the area of impacted soil. The soil cover would be underlain by a warning/demarcation layer to identify the presence of potentially contaminated soil beneath it, and to provide a physical barrier against unintended penetrations. Periodic monitoring of the area would be conducted to ensure this area is not being disturbed. Asbestos abatement, decontamination, and demolition of Building #11 would be completed prior to implementation. This remedy could be designed and implemented in 12 to 18 months.

AOC1 - Alternative #4: Soil Removal and Disposal

Present Worth	$495,655
Demo and Asbestos Cost	$306,000
Capital Cost	$175,820
Annual OM&M	$900

Under this alternative, the institutional controls, SMP, and design-phase investigation work described above would be implemented for this area of concern. The design-phase investigation would be conducted to determine the extent of contamination within the footprint of Building #11, and to provide a better estimate for soil removal quantities. An estimated 2,000 tons of contaminated soil would be removed to meet site cleanup levels , and the excavation would be backfilled with clean material. This soil quantity estimate assumes soil beneath Building #11 would be excavated and removed and it includes a 20% contingency. This alternative would include asbestos abatement, decontamination, and demolition of Building #11. This remedy could be designed and implemented in 12 to 18 months.

AOC2: Silver Recovery Vault Area

AOC2 - Alternative #1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an

unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

AOC2 - Alternative #2: Institutional Action

Present Worth $27,035
Capital Cost $13,200
Annual OM&M $900

Under this alternative (i.e. environmental easements) , and development of a SMP including a HASP would be implemented to protect against exposure to contaminants in the area of the silver recovery vault area. This alternative could be implemented in less than 6 months.

AOC2 - Alternative #3: Soil/Liquid Removal and Groundwater Monitoring

Present Worth $753,826
Demo and Asbestos Cost $114,000
Capital Cost $501,156
Annual OM&M $32,030

Under this alternative, the institutional controls described above would be implemented for this area of concern. Initially, asbestos abatement, decontamination and demolition of Building #1 would be completed. A design-phase investigation would be conducted to determine the extent of contamination within the footprint of Building #1, and to provide a better estimate for soil removal quantities. Approximately 30,000 gallons of liquids in the silver recovery vault, silver recovery UST, wastewater AST, and associated piping would be removed and disposed of off-site. All equipment associated with the silver recovery system would be removed and disposed of off-site. An estimated 2000 cubic yards of contaminated soil would be removed to meet site cleanup levels , and the excavation would be backfilled with clean material. This soil quantity estimate assumes soil beneath Building #1 would be excavated and removed and it includes a 20% contingency. A large portion of the contaminated groundwater would be removed while dewatering the open excavations. Upon completion of the removal action, a groundwater monitoring program would be initiated to evaluate the effectiveness of the soil removal action. If residual groundwater contamination does not meet levels acceptable to the NYSDEC, further groundwater remediation would be evaluated. . . This remedy could be designed and implemented in 18 to 24 months.

AOC3: Eastern Portion of Site

AOC3 - Alternative #1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

AOC3 - Alternative #2: Institutional Action

Present Worth $27,035
Capital Cost $13,200
Annual OM&M $900

Under this alternative, institutional controls (i.e., environmental easements) ,and development of a SMP including a HASP would be implemented to protect against exposure and also control site use. This alternative could be implemented in less than 6 months.

AOC3 - Alternative #3: Soil Cover

Present Worth $119,180
Capital Cost $105,280
OM&M Cost $13,900

Under this alternative, the institutional controls and SMP described above would be implemented for the eastern portion of the Site. In addition, the area would be delineated in a design-phase investigation and a cover consisting of a minimum 1-foot of clean soil and/or a low permeability paved surface would be placed over the area of impacted soil. The soil cover would be underlain by a warning/demarcation layer to identify the presence of potentially contaminated soil beneath it, and to provide a physical barrier against unintended penetrations. Periodic monitoring of the area would be conducted to ensure this area is not being disturbed. This remedy could be designed and implemented in 12 to 18 months.

AOC3 - Alternative #4: Soil Removal and Disposal

Present Worth $594,635
Capital Cost $580,800
Annual OM&M $900

Under this alternative, the institutional controls and SMP described above would be implemented for this area of concern. A design-phase investigation would be implemented to delineate the extent of soils contamination and to provide a better estimate of soil excavation quantities. For cost estimation purposes it is assumed that 8,000 tons of soil with contaminant concentrations above site cleanup levels would be removed and disposed off-site, and the excavation would be backfilled with clean material. This soil quantity estimate assumes soil removal beneath buildings and it includes a 20% contingency. The design-phase investigation would allow for a more accurate cost estimate. This remedy could be designed and implemented in 12 to 18 months

AOC4: Miscellaneous Areas

AOC4 - Alternative #1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

AOC4 - Alternative #2: Institutional Action

Present Worth $27,035
Capital Cost $13,200
Annual OM&M$ $900

Under this alternative, institutional controls (i.e., environmental easements) , and development of a SMP including a HASP would be implemented to protect against exposure and also control site use. This alternative could be implemented in 6 months or less.

AOC4 - Alternative #3: Institutional Action and Continued Groundwater Monitoring

Present Worth $155,470
Capital Cost $16,800
Annual OM&M $32,030

Under this alternative, institutional controls (e.g., environmental easements , and development of a SMP would be implemented to protect against exposure and control site use. In addition, the existing monitoring wells at the Site would be monitored over time to ensure contaminant concentrations in groundwater are not increasing.

AOC4 - Alternative #4: Soil Cover

Present Worth ..... $ 226,470
Capital Cost $73,900
Annual OM&M $33,830

Under this alternative, the institutional controls, SMP, and groundwater monitoring described above would be implemented for the Miscellaneous Areas. In addition, the areas of impacted soil would be delineated and a cover consisting of a minimum 1-foot of clean soil and/or a low permeability paved surface would be placed over the areas of impacted soil. The soil cover would be underlain by a warning/demarcation layer to identify the presence of potentially contaminated soil beneath it, and to provide a physical barrier against unintended penetrations. Periodic monitoring of the capped areas would be conducted to ensure this area is not being disturbed. This remedy could be designed and implemented in 12 to 18 months.

AOC4 - Alternative #5: Soil Removal and Disposal

Present Worth	$166,935
Capital Cost	$153,100
Annual OM&M	$900

Under this alternative, the institutional controls, and SMP described above would be implemented for this area of concern. In addition, the areas of impacted soil would be fully delineated in a design-phase investigation. An estimated 1,400 tons of contaminated soil would be excavated and disposed of off-site to meet the site cleanup levels. The excavation would be backfilled with clean material. This remedy could be designed and implemented in 12 to 18 months.

AOC5 and AOC6 - Alternative #1: Asbestos Abatement, Building decontamination and Building Demolition

Present Worth Asbestos Removal	$1,169,380
Present Worth Building Decon.	$279,000
Present Worth Building Demo.	$844,380
Total Present Worth	$2,292,760
Total Capital Cost	$2,292,760
Annual OM&M	$0

Due to the extreme dilapidated state of the on-site buildings and the risks associated with leaving the structures in place, it would be required to demolish all remaining buildings on-site. The above costs do not include demolition of Buildings #11 and #1. Demolition costs are included in the remedial alternatives for AOC1 and AOC2 respectively. The building demolition would be conducted in three phases. Phase I would involve asbestos abatement and off-site disposal of asbestos containing materials; Phase II would be removal of chemical contaminated equipment and materials; and the final phase would be demolition of the buildings.

7.2 Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375, which governs the remediation of environmental restoration projects in New York State. A detailed discussion of the evaluation criteria and comparative analysis is included in the RA 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.

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 NYSDEC has determined to be applicable on a case-specific basis.

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

3. Short-term 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.

4. 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.

5. 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.

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.

7. Cost-Effectivness. Capital costs and 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. The costs for each alternative are presented in Table 2.

This final criterion 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.

8. Community Acceptance - Concerns of the community regarding the SI/RAR report and the PRAP have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the NYSDEC addressed the concerns raised. In general, the public comments received were supportive of the selected remedy.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the NYSDEC has selected the following alternatives for AOCs 1-6 as the remedy for this site.

- AOC1: Alternative #4 - Soil removal and disposal;
- AOC2: Alternative #3 - Soil/liquid removal and disposal and groundwater monitoring;
- AOC3: Alternative #4 - Soil removal and disposal;
- AOC4: Alternative #5 - Soil removal and disposal; and
- AOC5 & AOC6 - Asbestos abatement, building decontamination, and building demolition.

The elements of this remedy are described at the end of this section. The selected remedy is based on the results of the SI and the evaluation of alternatives presented in the RAR.

These alternatives have been selected because, as described below, they satisfy the threshold criteria and provide the best balance of the primary balancing criteria described in Section 7.2. These alternatives will achieve the remediation goals as specified in the following analysis.

AOC1: East of Chemical Lab Building #11

The selected alternative for AOC1 (East of Chemical Lab Building #11) is soil removal and disposal (alternative 4). All of the remedial alternatives will be easily implemented; however, alternative 1 will not meet the threshold criteria and was not further considered. Alternatives 2, 3, & 4 will meet the threshold criteria and were further evaluated. Alternative 2 will not have any short-term impacts and alternative 3 and 4 need a HASP to control short-term impacts. Alternatives 2, 3 and 4 will be effective in the long-term; however, alternatives 2 and 3 will require active management and will inhibit site development. Alternative 4 will be the only alternative that reduces the volume of contamination on-site because the soils will be removed from the site. Although alternative 4 will be more expensive than the alternatives 2 and 3, it will be a permanent remedy and should not inhibit the planned Site development by restricting certain areas from constructing buildings.

AOC2: Silver Recovery Vault Area

The selected alternative for AOC2 (Silver Recovery Vault) is soil/liquid removal and disposal with groundwater monitoring (alternative 3). All of the alternatives will be easily implemented; however, alternative 1 will not meet the threshold criteria and was not further considered. Alternatives 2 & 3 will meet the threshold criteria and were further evaluated. Alternative 2 will not have any short-term impacts and alternative 3 will need a HASP to control short-term impacts Alternatives 2 and 3 will be effective in the long-term; however, alternative 2 will require active management and will inhibit site development. Alternative 3 will be the only alternative that reduces the volume of contamination on-site because the soils and liquid wastes will be removed from the site. Alternative 3 will be the most expensive alternative; however, it will be a permanent remedy and should not inhibit the planned Site development by restricting certain areas from constructing buildings.

AOC3: Eastern Portion of the Site

The selected alternative for AOC3 (Eastern Portion of the Site) is soil removal and disposal (alternative 4). All of the remedial alternatives will be easily implemented; however, alternative 1 will not meet the threshold criteria and was not further considered. Alternatives 2, 3, & 4 will meet the threshold criteria and were further evaluated. Alternative 2 will not have any short-term impacts and alternative 3 and 4 will need a HASP to control short-term impacts. Alternatives 2, 3 and 4 will be effective in the long-term; however, alternatives 2 and 3 will require active management and will inhibit site development. Alternative 4 will be the only alternative that reduces the volume of contamination on-site because the soils will be removed from the site. Alternative 4 is the most expensive alternative; however, it will be a permanent remedy and should not inhibit the planned Site development by restricting certain areas of the site from constructing buildings.

AOC4: Miscellaneous Areas

The selected alternative for AOC4 (Miscellaneous Areas) is soil removal and disposal (alternative 4). All of the remedial alternatives will be easily implemented; however, alternative 1 will not meet the threshold criteria and was not further considered. Alternatives 2, 3, 4 & 5 will meet the threshold criteria and were further evaluated. Alternative 2 will not have any short-term impacts and alternative 3, 4 and 5 will need a HASP to control short-term impacts. Alternatives 2, 3, 4 and 5 will be effective in the long-term; however, alternatives 2, 3 and 4 will require active management and will inhibit site development. Alternative 5 will be the only alternative that reduces the volume of contamination on-site because the soils will be removed from the site. Alternative 5 will be cost effective when compared to alternatives 3 and 4; furthermore, it will be a permanent remedy and should not inhibit planned Site development.

The estimated present worth cost to implement the remedy is $4,276,141. The cost to construct the remedy is estimated to be $4,123,636. This includes $2,712,760 for building demolition, decontamination, and asbestos abatement; and $1,410,876 for remedial costs. The estimated average annual operation, maintenance, and monitoring costs for the first 5 years is $32,030 and $900 per year thereafter .

The elements of the selected remedy are as follows:

- A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program;

- Asbestos containing materials and chemical contaminated equipment and materials will be removed from all on-site buildings and disposed of off-site. All buildings will subsequently be demolished;

- A design-phase investigation will be implemented to determine the extent of contamination in all areas of concern and within the former building footprints. All monitoring wells will be sampled to confirm the extent of groundwater contamination;

- Liquids from the silver recovery vault and associated tanks and piping will be removed and disposed of off-site;

- Contaminated soils will be excavated and disposed of off-site at a permitted facility;

- Development of a site management plan to:(a) address residual contaminated soils that may be excavated from the site during future redevelopment. The plan will require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations; (b) evaluate the potential for vapor intrusion for any buildings developed on the site; (c) identify any use restrictions; and (d) provide for the operation and maintenance of the components of the remedy;

- Imposition of an institutional control in the form of an environmental easement that will (a) require compliance with the approved site management plan; (b) limit the use and development of the property to commercial/industrial uses only; (c) restrict the use of groundwater as a source of potable water which is consistent with the current City of Rochester ordinances; and (d) require the property owner to complete and submit to the NYSDEC an periodic certification;

- The property owner will provide periodic certification, prepared and submitted by a professional engineer or such other expert acceptable to the NYSDEC, until the NYSDEC notifies the property owner in writing that this certification is no longer needed. This submittal will contain certification that the institutional controls and engineering controls, are still in place, allow the NYSDEC access to the site, and that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan; and

- Since the remedy may result in untreated hazardous substances remaining at the site, a long term groundwater monitoring program will be instituted. Site-wide groundwater will be monitored on a regular basis until the NYSDEC determines it is no longer necessary. This program will allow the effectiveness of the soil removal to be monitored and will be a component of the operation, maintenance, and monitoring for the site. The need for groundwater remediation and/or continued monitoring will be periodically evaluated. Groundwater monitoring will continue until the remedial objectives have been achieved, or until the NYSDEC determines that continued monitoring is no longer required.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the Former Photech Imaging site environmental restoration process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Repositories for documents pertaining to the site were established;
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established;
- A fact sheet was sent out on February 14, 2006 to the all parties on the public contact list;
- A public meeting was held on March 7, 2006 to present and receive comment on the PRAP.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

TABLE 1
Nature and Extent of Contamination
Range of sampling dates: July 1999 - May 2005

SHALLOW SUBSURFACE SOIL (0-9" BGS**)	Contaminant of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Acetone	ND to 0.006 J	0.2	0 of 15
	Trichloroethene	ND to 0.003 J	0.7	0 of 15
Semivolatile Organic Compounds (SVOCs	Benzo(a)anthracene	ND to 2.4	0.22	7 of 16
	Chrysene	ND to 2.5	0.4	7 of 16
	Benzo(b)fluoranthene	ND to 1.7	1.1	1 of 16
	Benzo(k)fluoranthene	ND to 2.1	1.1	2 of 16
	Benzo(a)pyrene	ND to 2.3	0.061	7 of 16
	Dibenzo(a,h)anthracene	ND to 0.680	0.014	5 of 16
Inorganic Elements (Metals)	Cadmium	ND to 17.9	1	4 of 17
	Nickel	4.73 to 13.5	13	2 of 17
	Selenium	0.520 to 4.12	2	4 of 17
	Silver	1.04 to 462	***	0 of 17
	Zinc	18.6 to 255	20	15 of 17
SUBSURFACE SOIL	**Contaminants of Concern**	**Concentration Range Detected (ppm)[a]**	**SCG[b] (ppm)[a]**	**Frequency of Exceeding SCG**
Volatile Organic Compounds (VOCs)	Acetone	ND to 0.094	0.2	0 of 42
	1,2-Dichloroethane (tot.)	ND to 0.030	0.3	0 of 42
	2-Butanone	ND to 0.075	0.3	0 of 42
	Trichloroethene	ND to 0.018	0.7	0 of 42
Semivolatile Organic Compounds (SVOCs	Benzo(a)anthracene	ND to 10*	0.022	1 of 38
	Chrysene	ND to 8.7*	0.4	1 of 38
	Benzo(b)fluoranthene	ND to 5.2*	1.1	1 of 38
	Benzo(k)fluoranthene	ND to 5.6*	1.1	1 of 38
	Benzo(a)pyrene	ND to 7.9*	0.061	3 of 38
	Indeno(1,2,3-cd)pyrene	ND to 4.5*	3.2	1 of 38
	Dibenzo(a,h,)anthracene	ND to 1.9*	0.014	1 of 38
Inorganic Elements (Metals)	Cadmium	ND to 6,320	1	10 of 48
	Chromium	3.40 to 69.2	10	9 of 48
	Lead	4.20 to 1300	500	1 of 48
	Nickel	6.72 to 38.9	13	6 of 48
	Selenium	0.725 to 5.66	2	16 of 48
	Silver	ND to 846	***	0 of 48
	Zinc	14.8 to 450	20	43 of 48

TABLE 1
Nature and Extent of Contamination (Continued)

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	1,1-Dichloroethane	ND to 11	5	2 of 20
	Trichloroethene	ND to 16	5	2 of 20
Semivolatile Organic Compounds (SVOCs)	Naphthalene	ND to 14	10	1 of 10
	Benzo(a)anthracene	ND to 6 J	0.002	1 of 10
	Chrysene	ND to 6 J	0.002	1 of 10
	Benzo(b)fluoranthene	ND to 3 J	0.002	1 of 10
	Benzo(k)fluoranthene	ND to 4 J	0.002	1 of 10
	Benzo(a)pyrene	ND to 4 J	0.002	1 of 10
	Indeno(1,2,3-cd)pyrene	ND to 2 J	0.002	1 of 10
Inorganic Elements (Metals)	Arsenic	ND to 95.1	25	**10 of 20[c]**
	Cadmium	ND to 40000	10	6 of 20
	Chromium	ND to 128	50	**7 of 20[c]**
	Lead	ND to 454	25	**10 of 20[c]**
	Nickel	ND to 186	100	**4 of 20[c]**
	Selenium	ND to 13.8	10	1 of 20
	Silver	ND to 2960	50	4 of 20

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

[b] SCG = standards, criteria, and guidance values;

Bold c = These metals were either ND or below SCGs in the May 2005 groundwater sampling event (see tables 3 and 4)
* = Highest SVOC concentrations in subsurface soil at boring location Well 06
** bgs = below ground surface
*** = The site-specific cleanup level for cadmium in TAGM 4046 is 1 ppm. Cleanup of cadmium to this level will remediate silver in soils to levels that are protective of human health and the environment.

ND = Compound Not Detected
J = Estimated Value

Table 2
Remedial Alternative Costs

Area of Concern	Remedial Alternative	Capital Cost	Annual OM&M	Total Present Worth
AOC1	No Action	$0	$0	$0
	Building #11 Demolition, Institutional Action, and site Investigation	Total Cost $337,030	$900	Total Cost $350,865
		Demo/Asbestos $306,000		Demo/Asbestos Cost $306,000
	Building #11 Demolition and Soil Cover	Total Cost $407,500	$1,500	Total Cost $416,770
		Demo/Asbestos $306,000		Demo/Asbestos Cost $306,000
	Building #11 Demolition and Soil Removal	Total Cost $481,820	$900	Total Cost $495,655
		Demo/Asbestos $306,000		Demo/Asbestos Cost $306,000
AOC2	No Action	$0	$0	$0
	Institutional Actions	$13,200	$900	$27,035
	Building #1 Demolition, Soil Removal and Groundwater Monitoring	Total Cost $615,156	$32,030	Total Cost $753,826
		Demo/Asbestos $114,000		Demo/Asbestos Cost $114,000
AOC3	No Action	$0	$0	$0
	Institutional Action	$13,200	$900	$27,035
	Soil Cover	$105,280	$1,800	$119,180
	Soil Removal	$580,800	$900	$594,635
AOC4	No Action	$0	$0	$0
	Institutional Action	$13,200	$900	$27,035
	Institutional Action and Groundwater Monitoring	$16,800	$32,030	$155,470
	Soil Cover and Groundwater Monitoring	$73,900	$33,830	$226,470
	Soil Removal	$153,100	$900	$166,935

Table 3
Former Photech Imaging, Inc.
VOCs, SVOC, and Metals in Groundwater (February 2000)

Volatile Organic Compounds	SCG (ppb)	Well-01	Well-02	Well-03	Well-04	Well-05	Well-06	Well-07	Well-08	Well-09	Well-10
acetone	50	6 J	ND	3 J	4 J	4 J	3 J	ND	ND	4 J	ND
1,1-dichloroethane	5	ND	ND	ND	2 J	1 J	ND	ND	ND	**8**	2 J
1,1-dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	1 J	ND
tot. 1,2-dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	1 J	ND	ND
1,1,1-trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	2 J	ND
trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	**16**	1 J	ND
toluene	5	ND	1 J	ND	ND	ND	1 J	ND	ND	ND	ND
xylene (total)	5	1 J	1 J	ND	ND	ND	1 J	ND	ND	ND	ND
SVOCs											
naphthalene	10	ND	ND	ND	ND	ND	**14**	ND	ND	ND	ND
benzo(a)anthracene	0.002	ND	ND	ND	ND	ND	**6 J**	ND	ND	ND	ND
chrysene	0.002	ND	ND	ND	ND	ND	**6 J**	ND	ND	ND	ND
benzo(b)fluoranthene	0.002	ND	ND	ND	ND	ND	**3 J**	ND	ND	ND	ND
benzo(k)fluoranthene	0.002	ND	ND	ND	ND	ND	**4 J**	ND	ND	ND	ND
benzo(a)pyrene	0.002	ND	ND	ND	ND	ND	**4 J**	ND	ND	ND	ND
indeno(1,2,3-cd)pyrene	0.002	ND	ND	ND	ND	ND	**2 J**	ND	ND	ND	ND
Metals											
arsenic	25	**37**	**33.2**	**36.6**	**34.6**	**49.2**	**41.1**	**47**	**95.1**	**26.7**	**34.9**
cadmium	10	**40000**	ND	ND	ND	**15.5**	ND	ND	ND	ND	ND
lead	25	**165**	**146**	**118**	**142**	**276**	**191**	**322**	**454**	**82.7**	**153**
silver	50	**2960**	ND	ND	ND	ND	ND	**92.3**	**118**	ND	ND

Units = µg/l
ND = Not Detected
J = Estimated Value
Shaded values exceed SCGs

Table 4
Former Photech Imaging, Inc.
VOCs and Selected Metals in Groundwater (May 2005)

Volatile Organic Compounds	SCG (ppb)	Well -01	Well -02	Well -03	Well -04	Well -05	Well -06	Well -07	Well -08	Well -09	Well -10
acetone	50	ND	ND	ND	ND	ND	3 J	1 J	ND	ND	ND
1,1-dichloroethane	5	ND	ND	ND	3.1 J	1.2 J	ND	ND	1.5 J	**11**	2.2 J
1,1-dichloroethene	5	ND	ND	ND	2.3 J	0.7 J	ND	ND	ND	2.8 J	ND
cis-1,2-dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	1.5 J	ND	ND
1,1,1-trichloroethane	5	ND	ND	ND	3.7 J	0.56 J	ND	ND	0.73 J	0.86 J	1.2 J
trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	**14**	0.87 J	ND
Metals											
Cadmium	10	**91.9**	**8.4**	ND	**14.2**	**74.1**	ND	**6.5**	ND	ND	**19.5**
Lead	25	ND	ND	ND	ND	ND	ND	15.6	ND	ND	7
Silver	50	**88.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND

Units = µg/l
ND = Not Detected
J = Estimated Value
SVOCs were not analyzed
Shaded Values exceed SCGs

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Former Photech Imaging Environmental Restoration Site
City of Rochester, Monroe, County, New York
Site No. B-00016-8

The Proposed Remedial Action Plan (PRAP) for the Former Photech Imaging site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 14, 2006. The PRAP outlined the remedial measure proposed for the contaminated soil and groundwater at the Former Photech Imaging 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, 2006, which included a presentation of the Site Investigation (SI) and the Remedial Alternatives Report (RAR) 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 30, 2006.

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

COMMENT 1: How much dirt is over the dolomite shelf? Four to six feet?

RESPONSE 1: The depth to bedrock (dolomite) at the site ranges from 8 to 20 feet. The depth to bedrock is deepest adjacent to the underground tunnels on the site which suggest that bedrock was blasted or excavated to construct these tunnels.

COMMENT 2: Are the costs for decontamination and asbestos abatement included in your demolition numbers?

RESPONSE 2: The building decontamination costs are included with the demolition and asbestos abatement costs.

COMMENT 3: Is there any recourse to recover money from Photech? Why is this project costing taxpayer dollars? Can the former owner be located?

RESPONSE 3: The USEPA attempted to recover funds for the removal action that was conducted in1994 and reached a settlement with the former owner for $50,000. The NYSDEC has not identified a viable responsible party available to pay for the costs of investigation and cleanup of the former Photech site. However, the NYSDEC will continue to explore cost recovery avenues after the ROD is issued.

COMMENT 4: The Photech buildings should be demolished and the land redeveloped to get the property back on the tax rolls.

RESPONSE 4: Thank you for your support of the proposed remedy. The proposed remedy does include demolition of all of the on-site buildings and excavation and removal of contaminated soils. Upon completion of remediation, the City of Rochester plans to have the property redeveloped for commercial/industrial use.

COMMENT 5: Is there any off site migration of groundwater contaminants? Are there any chlorinated hydrocarbons in the bedrock?

RESPONSE 5: The data generated during the site investigation do not indicate that groundwater contamination is moving off-site. The monitoring wells are constructed within the bedrock/overburden interface interval. Low levels of chlorinated solvents have been detect in two on-site wells at levels ranging from 8 to16 ppb.

COMMENT 6: The former City Commissioner Forbes wanted to reopen this site. How much in federal dollars were spent on this site? How much money did the City of Rochester spend on acquisition and investigation of this site?

RESPONSE 6: The public records indicate the City of Rochester acquired the Former Photech property through tax foreclosure proceedings. Photech defaulted on $9.2 million of a $9.3 million bond issued by the County of Monroe Industrial Development Agency (COMIDA). Additionally, Photech defaulted on $1,670,000 in property taxes and loans to the City of Rochester; and $429,000 in property taxes to Monroe County. The United States Environmental Protection Agency spent $426,000 on the removal action in 1994. The New York State Department of Environmental Conservation spent $95,400 for the removal action and chemical inventory in 1991. Finally, the City of Rochester has spent $312,000 on site investigations and IRMs. The total costs in defaulted bonds, loans and taxes; land acquisition; site investigation; and cleanup to date are $12.2 million.

COMMENT 7: What will the site look like after remediation?

RESPONSE 7: Upon completion of the remedy, the site will be a vacant grassy lot. Some site improvements, such as roads and utilities, may be constructed after the buildings have been demolished and contaminated soils have been excavated.

COMMENT 8: Who owns the woods behind the building?

RESPONSE 8: The wooded area immediately to the north of the buildings is part of the Former Photech site.

COMMENT 9: Where were tests conducted to identify groundwater contamination?

RESPONSE 9: Groundwater was sampled from ten monitoring wells located throughout the property. These wells were sampled in February 2000 and May 2005. The sample results indicated metals in groundwater in the vicinity of the silver recovery pit and low levels of volatile organic compounds in the vicinity of the former on-site pond.

COMMENT 10: Is it true that Dolomite rock is not very porous? If the contaminated soils were excavated, would the rock be preventing off-site contaminant migration?

RESPONSE 10: The upper bedrock is weathered and contains many fractures. Groundwater flows through these fractures and is the primary route for contaminants to migrate off-site. The rock will not prevent contaminants from moving offsite; however, once the contaminated soils are removed, the levels of contaminants in groundwater are expected to decrease. A long-term groundwater monitoring plan will be implemented to monitor the effectiveness of the soil removal.

COMMENT 11: In 1944, there used to be a pond of ammonia by the old ice factory on the property which is currently the Delphi site. Third grade kids from School #34 used to tour the ice factory and the pond.

RESPONSE 11: Comment noted. This information will be forwarded to the project manager for the Delphi site.

COMMENT 12: In the presentation, a missing underground storage tank was mentioned. The investigation identified the tank foundation and straps but did not locate the tank. After building demolition, will it be easier to verify that the tank was removed?

RESPONSE 12: The remedy will require large amounts of contaminated soil to be removed. These large excavations should verify that the missing underground tank was previously removed.

COMMENT 13: How long will this clean up take?

RESPONSE 13: Once the City of Rochester has received its grant to implement the remedy, the design and cleanup should take 18 to 24 months.

COMMENT 14: What is the route of storm water drainage from the site? Where will wastewater that is generated from the site cleanup go? Where will future stormwater drainage go?

RESPONSE 14: Stormwater from the site currently flows into the sewers on Driving Park Avenue. Wastewater generated during the remediation will either be collected and treated on-site prior to sewer discharge, or it will be shipped off-site for disposal. These details will be finalized in the design of the remedy. Future stormwater drainage will be designed as part of any future site development and will not be part of the remedy.

COMMENT 15: When the site is marketed for development, will stormwater drainage be an issue when buildings and parking lots are constructed?

RESPONSE 15: Any future site development will address stormwater as part of the development plan and will not be part of the remedy.

COMMENT 16: Is there an old creek bed in the woods, in the back of the site?

RESPONSE 16: The former on-site pond discharged to a wetland area on the northeast portion of the site.

APPENDIX B

Administrative Record

Administrative Record

Former Photech Imaging
Site No. B00016-8

1. Proposed Remedial Action Plan for the Former Photech Imaging site, dated February 2006, prepared by the NYSDEC.

2. Fact Sheet "DEC Proposes Cleanup at Former Photech Imaging Site Seeks Public Input", February 2006.

3. "Environmental Site Investigation/Remedial Alternatives Report Former Photech Imaging Systems, Inc.," January 2006, prepared by Day Environmental, Inc.

4. Groundwater Analytical Data, Columbia Analytical Service, June 20, 2005.

5. "Phase II Sampling and Analysis Plan Subsurface Investigation and Survey," prepared by Brownfield Restoration Group, October 7, 1999.

6. Fact Sheet "Investigation Update at the Former Photech Site", August 1999.

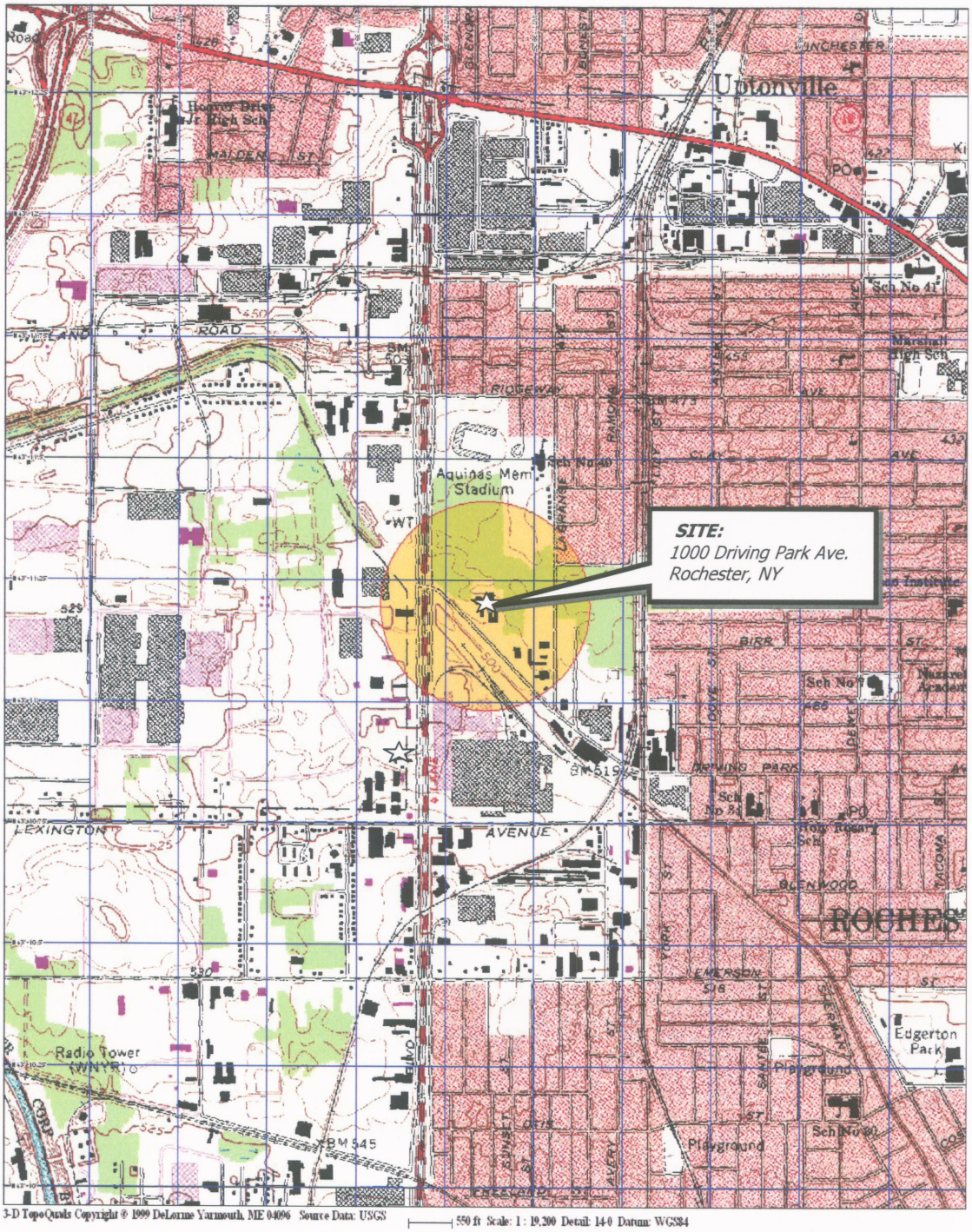
7. "Tank Closure and Removal Scope Clarification," prepard by Brownfield Restoration Group, July 26, 1999.

8. "Phase II Sampling and Analysis Plan Building and Equipment Decontamination Survey." prepared by Brownfield Restoration Group, June 11, 1999.

9. Fact Sheet "Investigation to Begin at the Former Photech Site", December 1998

10. "Revision 2 Work Plan Site Investigation and Remedial Alternatives Project for the Former Photech Imaging Systems Property," November 1998, prepared by IT Corporation.

11. "Citizen Participation Plan for the Former Photech Imaging Systems, Inc. Site," November 30, 1998.



Drawing Produced From: 3-D TopoQuads, DeLorme Map Co., referencing USGS quad map Rochester West (NY) 1995 and Rochester East (NY) 1995. Site Lat/Long: N43°11.19'– W77°39.38'

DATE		PROJECT TITLE **1000 DRIVING PARK AVENUE ROCHESTER, NY** **ENVIRONMENTAL RESTORATION PROJECT**	PROJECT NO. **FIGURE 1**
DRAWN BY			
SCALE **1" = 2000'**		DRAWING TITLE **PROJECT LOCUS MAP**	

Figure 4
Total PAHs and Metals in Soils for AOC3
Former Photech Imaging, Inc.

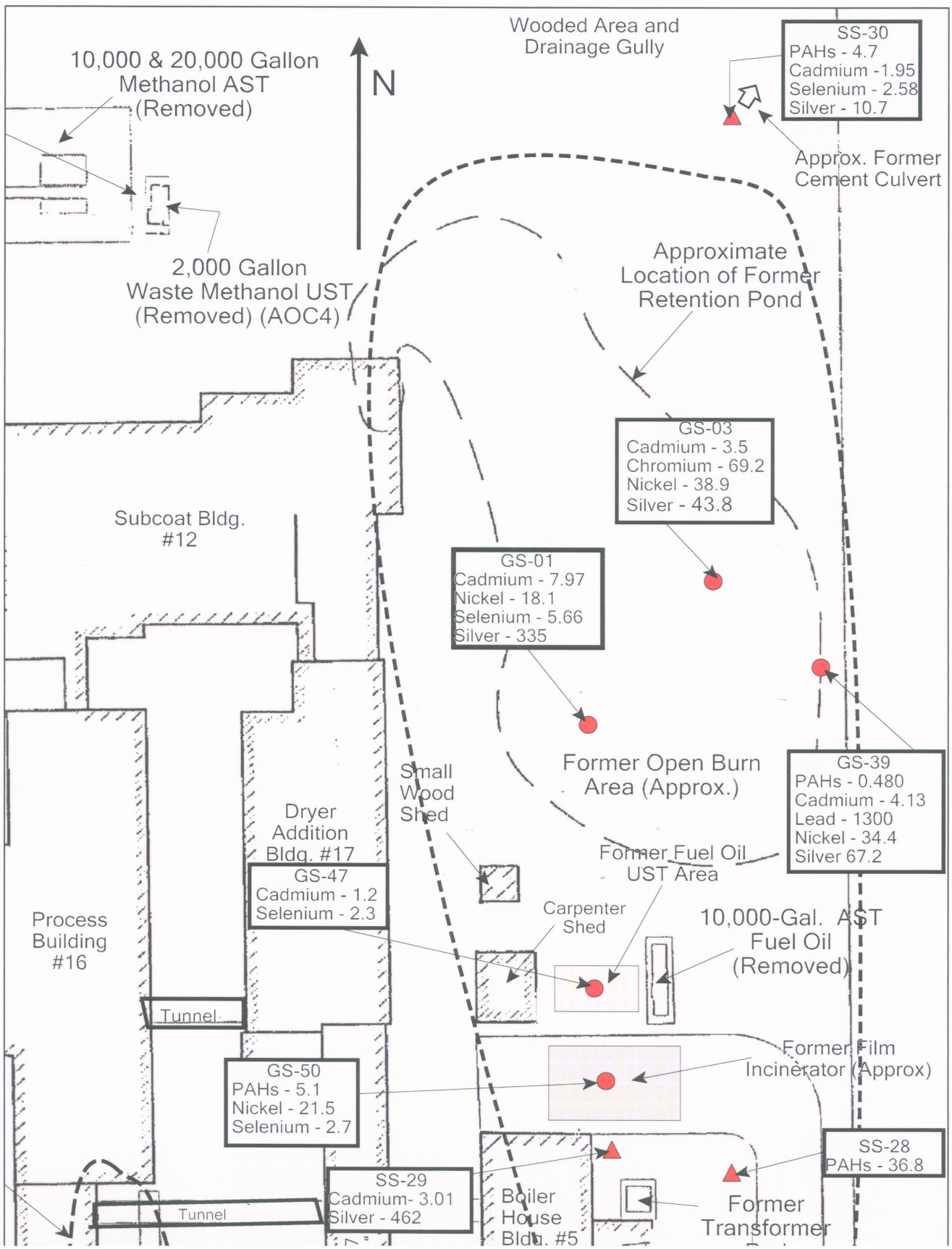
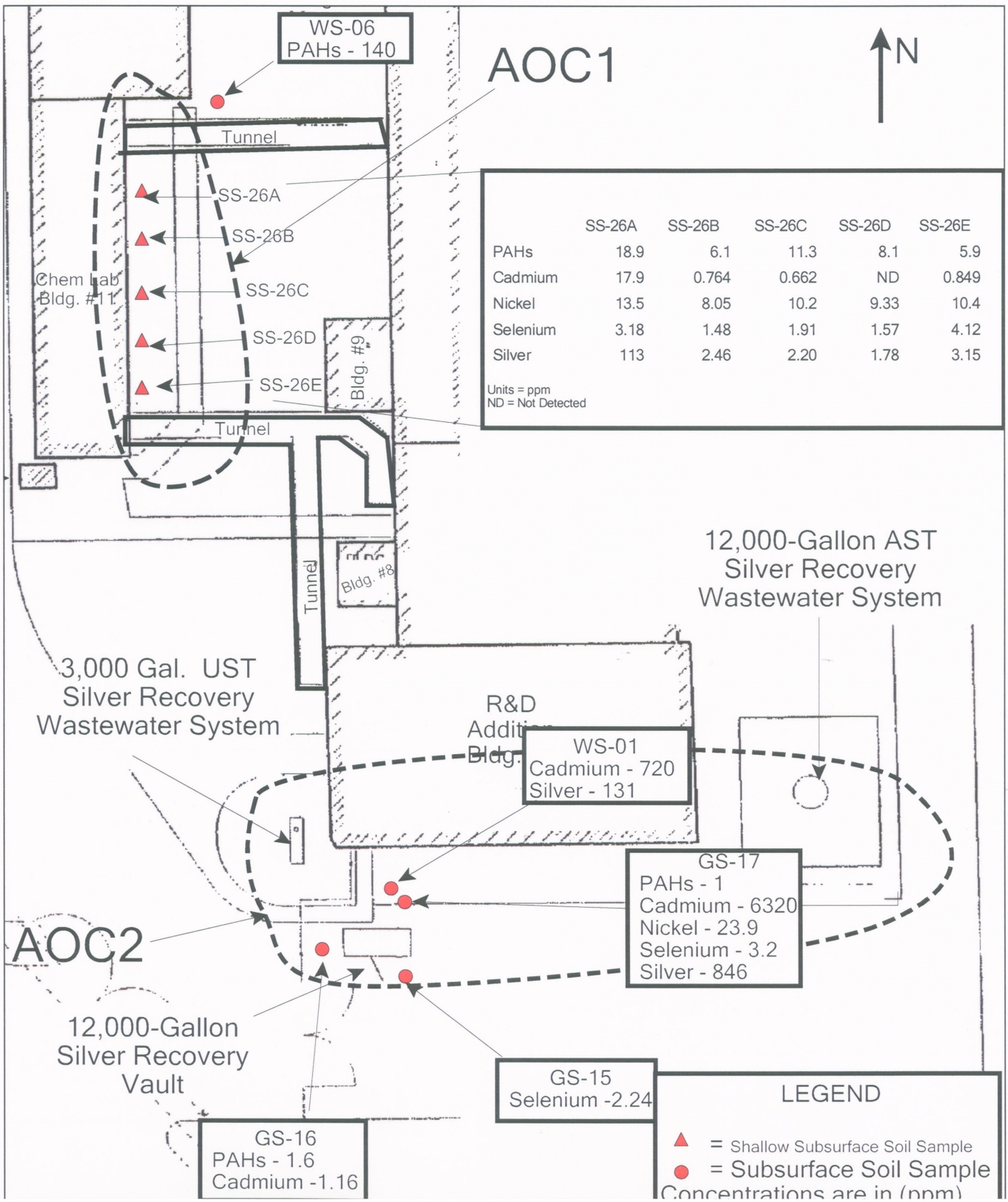


Figure 3
Total PAHs and Metals in Soils for AOC1 and AOC2
Former Photech Imaging, Inc.



	SS-26A	SS-26B	SS-26C	SS-26D	SS-26E
PAHs	18.9	6.1	11.3	8.1	5.9
Cadmium	17.9	0.764	0.662	ND	0.849
Nickel	13.5	8.05	10.2	9.33	10.4
Selenium	3.18	1.48	1.91	1.57	4.12
Silver	113	2.46	2.20	1.78	3.15

Units = ppm
ND = Not Detected

Figure 2
Site Layout
Former Photech Imaging, Inc.

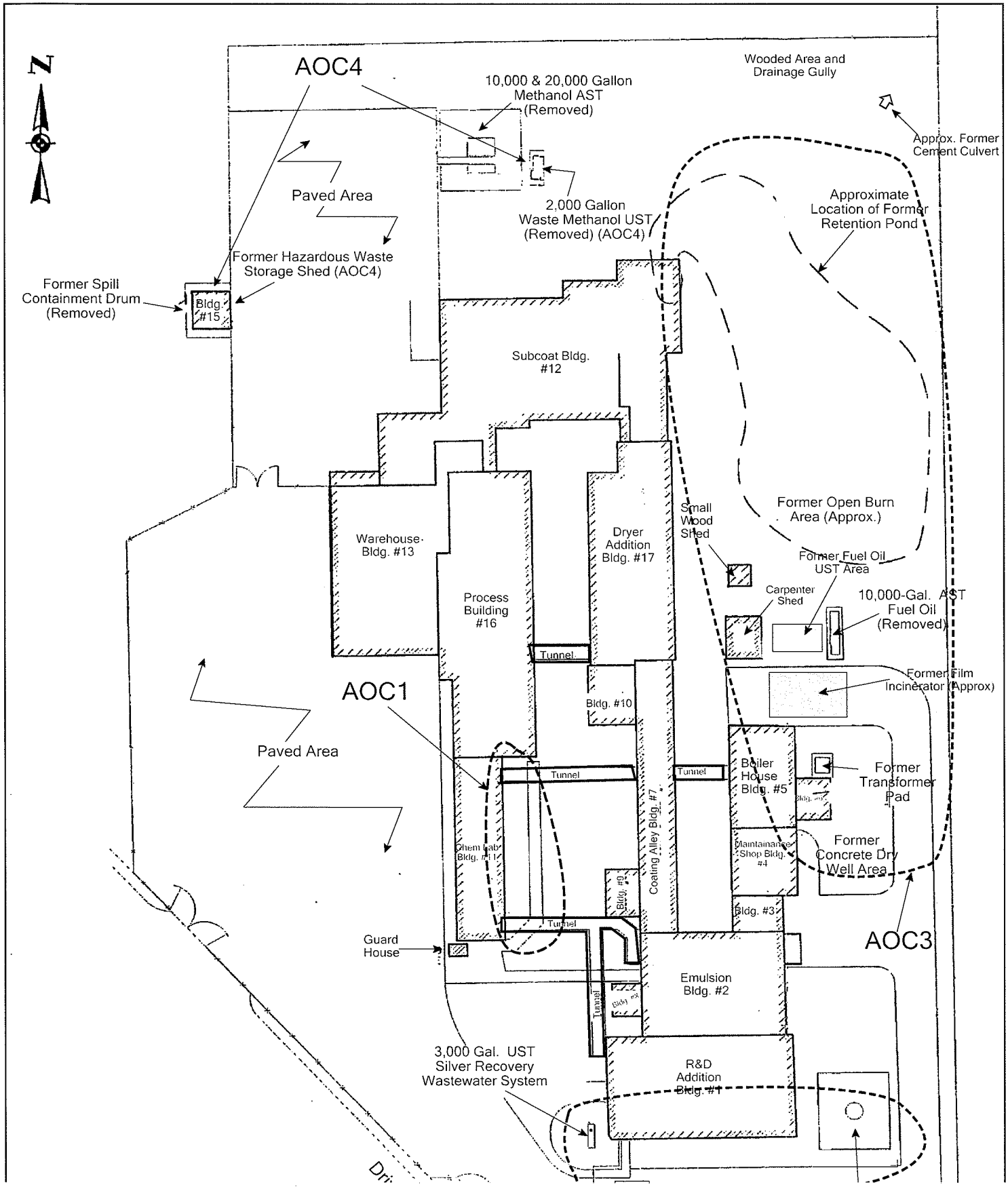
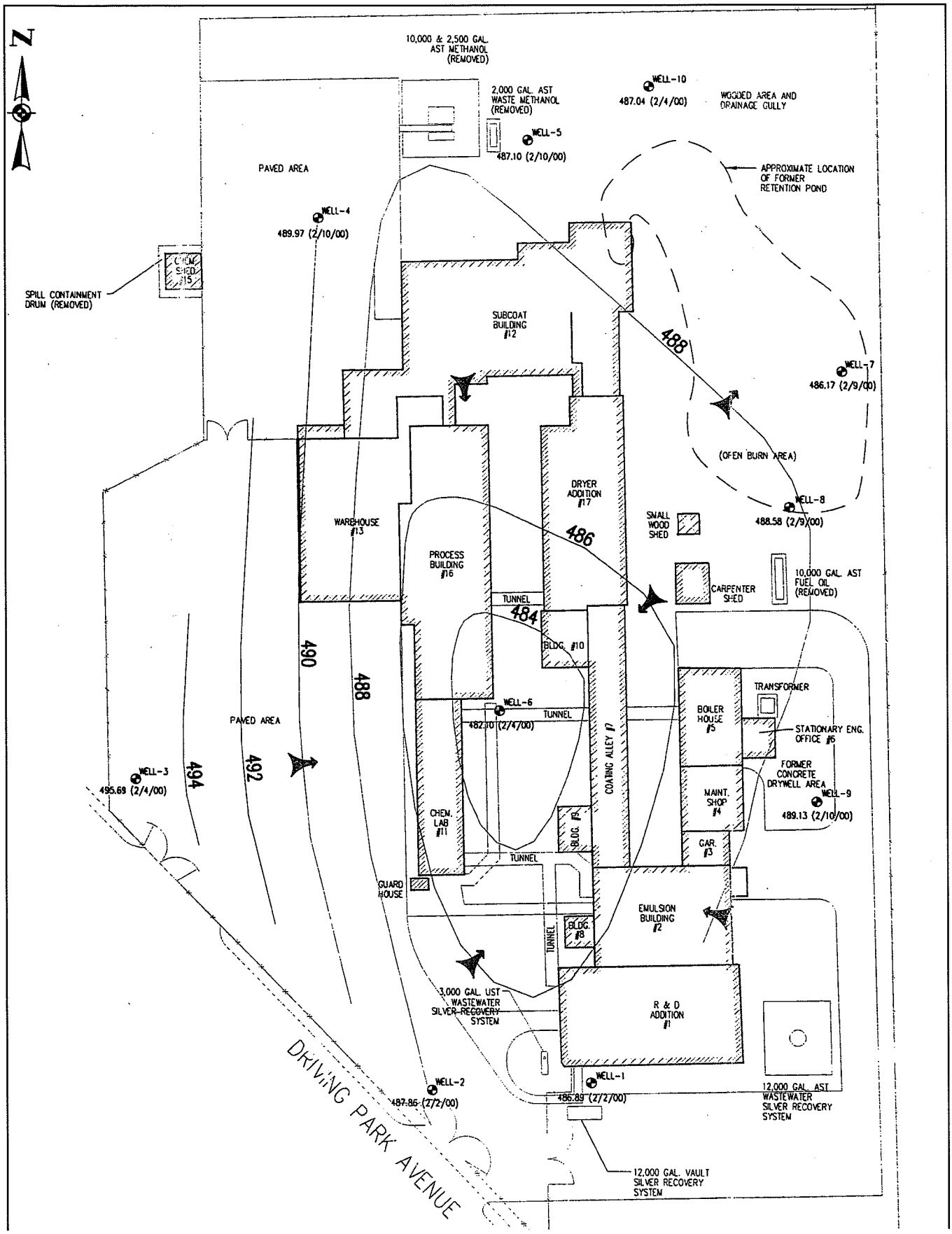
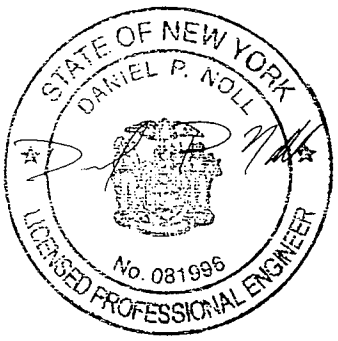


Figure 5
Former Photech Imaging, Inc.
Groundwater Potentiometric Surface Map



ENVIRONMENTAL SITE INVESTIGATION/ REMEDIAL ALTERNATIVES REPORT FORMER PHOTECH IMAGING SYSTEMS, INC. 1000 DRIVING PARK AVENUE ROCHESTER, NEW YORK ENVIRONMENTAL RESTORATION PROJECT #B00016-8



Prepared For: City of Rochester
30 Church Street
Rochester, New York 14614

Prepared By: Day Environmental, Inc.
40 Commercial Street
Rochester, New York 14614

Project No.: 3198S-03

Date: February 2005

Text and Appendix A Only
Appendices B through H not included, previously submitted to NYSDEC under separate cover

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EXECUTIVE SUMMARY

The City of Rochester (City) entered into a State Assistance Contract (SAC) with the New York State Department of Environmental Conservation (NYSDEC) to perform a Site Investigation and Remedial Alternatives (SI/RA) project (Project #B00016-8) under the NYSDEC 1996 Clean Water/Clean Air Bond Act - Environmental Restoration Program ("Brownfield" program). This SI/RA report presents information on: the investigative work completed; the physical characteristics of the Site; the nature and extent of impacted media; contaminant fate and transport; and identification, development and detailed analysis of alternatives to address the impacted media.

The City Department of Environmental Quality (DEQ) originally contracted with IT Corporation (IT), now IT Group, to complete the Site Investigation and Remedial Alternatives (SI/RA) project. IT then subcontracted BRG Environmental (BRG) to conduct the tasks associated with the SI/RA project at the Former Photech Imaging Systems, Inc. (Photech) property. BRG submitted an incomplete Draft SI/RA report dated July 26, 2000 to the City. Subsequently, IT filed for bankruptcy. In 2001 the City terminated its Professional Services Agreement (PSA) with IT, and the draft SI/RA report was not completed. Under a separate PSA, the City retained Day Environmental, Inc. (DAY) to complete the SI/RA report.

Site Background

The former Photech Imaging Systems, Inc. property (Site) is located in a commercial/industrial-zoned area in the northwest quadrant of the City in the State of New York. The Site is addressed as 1000 Driving Park Avenue, Rochester, New York and it is comprised of 12.5 acres of land that include various building, sewer and utility improvements. A total of 15 buildings comprising approximately 108,000 square feet of space are currently on the Site. These buildings formerly housed various manufacturing, laboratory, office, and warehouse operations. A series of below ground tunnels connect several buildings. Various underground (UST) and aboveground storage tanks (AST), a below ground silver recovery system and associated wastewater system piping were formerly used at this facility. Other features of the Site include a former burn pit area, a retention pond basin, asphalt parking lots, and three wooden shed-like structures. The location of the Site is depicted in Figure 1 included in Appendix A. The general layout of the Site, including buildings and other features, is depicted in Figure 2 (Site Plan) included in Appendix A.

The Site is currently bound by: Driving Park Avenue to the south; Holleder Industrial Park to the north; Rochester Distribution Unlimited, Inc. to the east; and Electronic Media Solutions, Inc. to the west. Directly to the south of Driving Park Avenue is the Delphi manufacturing facility. The Site is approximately 1000 feet east of Mt. Read Boulevard and 2 miles east of Interstate Route 390.

The Site was originally developed in 1948 for the purpose of manufacturing photographic film and paper. It continued to be used for the manufacturing of various types of film up until 1991. Several different companies have owned and operated the facility at the Site for photographic paper and film production since its construction in 1948. The most recent owner, Photech Imaging Systems, Inc., ceased operations and abandoned the facility in 1991. Large amounts of

chemicals, wastes, and various supplies and materials were left "as-is" on-site when the facility was abandoned. Since closure, the buildings have been vandalized, with ceilings, walls, piping and equipment severely damaged. As a result, asbestos and chemical residues are suspected to be present in many interior areas of the buildings. In addition, available historical information shows evidence of impacts to the subsurface from past Site operations.

An independent contractor (O'Brien & Gere) completed a site audit in 1986 for Rhone-Poulenc, Inc. (a former owner). The audit included a detailed environmental inspection of the plant, a review of waste handling practices, and the completion of a limited number soil borings and groundwater sampling. The audit identified potential environmental impairments from past and current practices, and some further evaluation was conducted. Selected findings of the 1986 audit are provided below:

- The report concludes that soil or groundwater contamination attributable to the underground silver recovery vault located adjacent to the Research and Development building was not present in the immediate area of this vault. Samples collected from two test borings next to the vault, and subsequently tested by an analytical laboratory, did not contain silver. As such, the report concluded that the integrity of the silver recovery vault was good.

- The report documents that one or more fuel oil UST systems located in proximity to the Boiler Building may have leaked and impacted surrounding soil and groundwater. Soil and groundwater collected from a test boring in proximity to one of the UST systems were determined to contain petroleum hydrocarbons.

- The report documents that an underground 500-gallon waste methanol tank piping located on the northern portion of the Site had failed. The piping was reportedly broken by a truck driving over the line at the time of the site audit review.

- The report notes that the facility waste handling practices required upgrading or modification to meet regulatory requirements, which included constructing a proper waste accumulation/storage area for the facility.

- The report noted that the boiler blowdown, which discharged to the on-site pond adjacent to the boilers, should be modified to discharge to the sewer system.

An assortment of abandoned oxidizers, reactive chemicals, flammable liquids, corrosives, poisons, and shock sensitive chemicals were left at the Site when Photech Imaging Systems, Inc. vacated the premises in 1991. In 1994, the NYSDEC and the United States Environmental Protection Agency (USEPA) performed a bulk waste and chemical removal action at the Photech site. This work successfully removed bulk chemicals from the facility; however, tanks were not certified as "clean" and some miscellaneous small containers of chemicals were left in the buildings.

Site Investigation and Findings

Studies performed as part of this project included:

- Evaluation of surface soil conditions;
- Evaluation of subsurface soil conditions;

- Evaluation of groundwater conditions;
- Evaluation of building materials for the presence of asbestos and contaminants associated with former operations; and
- Completion of interim remedial measure (IRM) activities, which included closure of ASTs, closure of the containment drum associated with the Building #15 chemical storage shed, evaluation of subsurface conditions at two suspected underground structures (i.e., former buried steel chemical tank and concrete vault).

This work also included testing samples of surface soil, subsurface soil, groundwater, and building materials at analytical laboratories, and/or field screening using real-time meters, for various physical and chemical characteristics.

Based on information obtained as part of this study, the soils at the Site have been interpreted to consist of pro-glacial lacustrine and glacial till deposits underlain by Rochester Shale bedrock. Based on February 2000 groundwater data, groundwater generally flows radially toward the center of the Site. It is possible that the groundwater flow direction may be influenced by the underground tunnels and other below-grade structures.

Potential contaminant sources identified and investigated to date include the following:

1) 12,000-gallon underground silver recovery vault associated with the facilities wastewater treatment system;
2) Pipes from the Building #2 silver recovery tanks to a 12,000-gallon wastewater AST;
3) Hazardous waste storage in the vicinity of the chemical shed foundation east of Building 11;
4) Discharge locations of scupper drains to the ground on the east side of Building #11;
5) Liquid storage vault east of Building #4;
6) Former film incinerator located west of Building #5 and at the foundation of the Carpenters Shed;
7) Retention pond where open burning of trash took place;
8) Process discharges into the retention basin prior to redirecting discharges into the sanitary sewer;
9) Drainage swale on northeast portion of the property;
10) Storage of chemicals and hazardous waste at the chemical storage shed (Building #15);
11) Adjacent and exterior to the chemical and storage mixing area and an incinerator room in Building #12;
12) Asbestos containing materials inside the buildings;
13) Chemical residues remaining inside the buildings; and
14) Off-site sources.

Most sources that would further contaminate the surface and subsurface environment have been removed as a result of the manufacturing process being discontinued, the U.S. EPA clean up, and the IRM completed as part of this project. However, some sources do remain, including off-site sources. The following sections provide conclusions regarding the contamination detected as a result of the site investigation performed at the Site.

Nature and Extent of Contamination

In general, the extent of contaminants detected in surface soil, subsurface soil, groundwater, or building materials appear confined to the boundaries of the Site. Given the complex layout of basements, tunnels, and underground utilities, environmental testing beneath the footprints of facility buildings was not conducted as part of the site investigation portion of this project (i.e., was not feasible). As such, the nature and extent of potential contamination beneath the building footprints is unknown. It is understood that facility buildings will eventually be demolished by the City in preparation for redevelopment of the Site. The City plans on evaluating subsurface conditions beneath building footprints during or after demolition activities.

Based on the analytical laboratory test results, sources of suspected contamination identified in the Work Plan and listed in Section 2.1.6 of this report were confirmed to have contamination above recommended soil cleanup objectives (RSCOs) as referenced in the NYSDEC document titled "Division of Technical and Administrative Guidance Memorandum: *Determination of Soil Cleanup Objectives and Cleanup Levels*" (TAGM 4046) dated January 24, 1994, as amended by the NYSDEC's supplemental tables dated August 22, 2001 and NYSDEC groundwater standards and guidance values referenced in the NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1 document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (TOGS 1.1.1) dated June 1998 (as amended by an April 2000 addendum). For metals without RSCOs or typical background ranges listed in TAGM 4046 (i.e., antimony, silver, and thallium), the residential risk based concentrations (RBCs) referenced in the USEPA Region III RBC table dated October 8, 2004 were used for comparison. Some of the metals detected in surface soil, subsurface soil or groundwater (e.g., antimony, arsenic, beryllium, calcium, magnesium, manganese, iron, and possibly zinc) appear partly attributable to naturally occurring sources and/or area-wide source(s) in soil and groundwater, and possibly not specifically related to releases of contaminants during former operations at the Site.

The areas containing the highest concentrations of contaminants exceeding standard, criteria and guidance (SCGs) are:

1) East of Building #11 in proximity to chemical laboratory scupper drains and a former chemical storage shed; and,

2) South of Building #1 in proximity to the underground concrete silver recovery vault associated with former wastewater treatment system.

In addition, various locations of hazardous substances were identified within the buildings at the Photech site. Specifically asbestos, light ballasts presumed to contain polychlorinated biphenyls (PCBs), and residual chemicals from past processing activities were found within the building structures.

The details of these areas of concern (AOCs) identified to date, including the suspected source and observed contamination, are provided below:

AOC1 East of Chemical Lab Building #11: Metals contamination (most notably cadmium, mercury, selenium an zinc) and polycyclic aromatic hydrocarbons (PAH) semi-volatile organic compound (SVOC) contamination above SCGs were detected in surface soil

samples east of Building #11 (the former Chemical Lab) in proximity to scupper drain discharge locations. Subsurface soil and groundwater samples collected from Well 06 near former shed east of Building #11 (i.e., in the general location of where the surface soil samples were collected) also contained concentrations of PAH SVOCs above TAGM 4046 RSCOs and TOGS 1.1.1 groundwater standards or guidance values, respectively. The extent of metals contamination and SVOC contamination have not been fully defined in this area. It may not be feasible to fully define the extent of this contamination unless Building #11 is first demolished.

AOC2 Silver Recovery Vault Area: The underground concrete silver recovery vault associated with the facility's wastewater treatment system, located on the southeastern portion of the Site, has aqueous contents that can be considered a characteristic hazardous waste. The integrity of the recovery vault is suspect. Leakage from this silver recovery system appears to have resulted in release and subsequent subsurface soil and groundwater contamination on this portion of the Site. Some of the samples in the areas to the south and/or east of Building #1 in proximity to the underground silver recovery vault contained concentrations of SVOCs and/or metals above TAGM 4046 RSCOs (or USEPA Region III residential RBC, where applicable) and TOGS 1.1.1 groundwater standards or guidance values [i.e., most notably: the SVOC benzo(a)pyrene and the metals cadmium, copper, nickel, selenium and silver in soil samples; and cadmium, chromium, copper, silver, thallium and vanadium in a groundwater sample]. The extent of metals and SVOC contamination in this area has not been fully defined.

AOC3 Eastern Portion of the Site: Former operations at various areas on the eastern portion of the Site appear to have contributed to intermittent contamination of surface soil, subsurface soil, and groundwater on the eastern portion of the Site. Specific areas and media where contamination was detected at concentrations above SCGs for volatile organic compounds (VOCs) or SVOCs, or at distinctly higher concentrations for metals SCGs, include:

- Former open burn pit area on east side of the Site
  - The metals cadmium, iron, nickel, selenium and zinc in subsurface soil
- Former retention pond where solid waste was burned/dumped on east side of the Site
  - The metals arsenic, cadmium, chromium, copper, iron, lead, nickel, selenium and zinc in subsurface soil
  - The metals lead, silver and zinc in groundwater
- Former film incinerators on east side of the Site
  - SVOCs, nickel and selenium in subsurface soil
  - The VOC 1,1-dichloroethane and the metals arsenic, beryllium, chromium, copper, iron, lead, silver and zinc in groundwater
- Former transformer pad area on east side of the Site
  - SVOCs and silver in surface soil
  - The VOC 1,1-dichloroethane, and the metals arsenic, beryllium, chromium, copper, iron, lead, silver and zinc in groundwater

- Retention pond cement culvert discharge area on east side of the Site
    - SVOCs and zinc in surface soil

- Former UST(s) area on east side of the Site
    - The SVOC benzo(a)pyrene in subsurface soil

The extent of these types of contaminants that were encountered in surface soils, subsurface soils, or groundwater in the above areas was not fully defined during the site investigation, but it appears that the extent is generally irregular and/or intermittent. In many cases, the majority of field samples tested from these areas did not contain concentrations of contaminants above SCGs. [Note: A potential explanation for the intermittent nature and extent of contamination is the reported 'cleanup' performed by the former owners sometime in the 1970's or 1980's, which reportedly involved the removal and off-site disposal of solid waste from the retention pond and burn pit and the subsequent reworking and regarding of this area.]

AOC4 Miscellaneous Areas: Operations at various miscellaneous areas of the Site (i.e., areas not included as part of other AOCs) appear to have contributed to intermittent contamination of surface soil, subsurface soil, and groundwater at the Site. Specific areas and media where contamination was detected at concentrations above SCGs for VOCs or metals at distinctly higher concentrations than SCGs, include:

- The former chemical storage shed on the west side of the Site
    - The metals selenium and zinc in surface soil

- West side of facility perimeter
    - The metal thallium in groundwater

- Former waste methanol tank area
    - The metals cadmium and zinc in groundwater

- Former concrete drywell area on east side of Site
    - The VOC 1,1,1-trichloroethane and the metal selenium in groundwater

The extent of the above contaminants in these areas was not fully defined during the site investigation, but it appears that the extent is generally irregular and/or intermittent. In many cases, the majority of field samples tested from these areas did not contain significant concentrations of contaminants above SCGs.

AOC5 Asbestos Containing Materials: The purpose of the facility-wide asbestos survey was to identify regulated areas within the buildings. At the time of the survey air fiber concentrations were below the permissible exposure limit (PEL) of 0.1 fiber per cubic centimeter. However, wipe samples showed loose asbestos material contamination in the following areas:

Research and Development - Building #1:
Second Floor Rooms 227 and 230
Emulsion Building #2:
Basement – Stockroom
Second Floor- Rooms 225 and 215
Third Floor - Room 325

Chemical Laboratory – Building #11
Basement Hallway

Based on the wipe sample results summarized above, airborne concentrations could exceed the PEL during certain remedial or demolition activities.

As described in Section 4.4.1 and summarized in a table in that section, a second phase of the asbestos survey found asbestos-containing material (ACM) present inside most of the buildings at the Photech facility. Specific information on the sampling conducted, locations, quantities, and types of materials can be found in the Paradigm Asbestos Survey Report in Appendix F. Asbestos abatement will need to be performed in accordance with 29 Code of Federal Regulations (CFR) 1910.1001 and 1926.1101 (Occupational Safety and Health Association [OSHA] regulations); 40CFR 61.45, 61.150, 61.152, and 61.153 (EPA regulations); 49CFR 171 and 172 (Department of Transportation [DOT] regulations); and New York State Department of Labor (NYSDOL) Code Rule 56, if ACM is proposed to be disturbed or removed. It is anticipated that variances will be obtained from applicable regulatory authorities to complete asbestos abatement work.

AOC6 Residual Chemicals: Many of the buildings contain waste/process materials and impacted building materials. Based on bulk sampling, some of the waste/process materials will require disposal as characteristic hazardous waste. A summary of the analytical testing is included in the "Phase II Building and Equipment Survey – Bulk Sample Results" tables. Also included in these tables is a summary of the locations and quantities of the materials requiring disposal. The pertinent analytical data is also shown and materials identified as a hazardous waste are in bold print. In addition, wipe sampling identified metals impact on various interior building and equipment surfaces; however, concentrations of wipe samples do not appear to be applicable for identifying proper disposal. Rather, the wipe sampling results will be used to develop appropriate procedures for handling equipment and areas of visible staining. The equipment in the buildings should be removed prior to demolition activities in order to meet Resource Conservation and Recovery Act (RCRA) requirements in 40 CFR 260 et seq.

Fate and Transport

Potential routes of migration identified for this Site include:

- Metals and SVOCs in surface soil and subsurface soil migrating and impacting the groundwater table through precipitation or contact with groundwater;
- Metals and SVOCs migrating in a dissolved groundwater plume;
- Metals and SVOCs absorbed onto surface soil particles and becoming windborne;
- If the impacted surface soil or subsurface soil were to be disturbed, indirect migration pathways may include: transportation on construction equipment, windborne, etc.;
- Airborne asbestos fibers could migrate out of the buildings through broken windows, holes in the roof, etc. and impact downwind areas; and,
- Waste/process materials in the buildings could leach through the concrete floors and impact the subsurface.

The contamination in surface soils, subsurface soils and groundwater at the Site generally consists of PAH SVOCs and target analyte list (TAL) metals. The types of SVOCs encountered at the Site biodegrade aerobically and anaerobically. The groundwater analytical laboratory test results suggest anaerobic methanogenesis (i.e., a type of biodegradation) is occurring in proximity to the underground concrete silver recovery vault associated with the wastewater system for the facility. Most SVOC and metals contaminants are relatively persistent in soil and groundwater. SVOC and metals concentrations in the groundwater would presumably decrease as the distance from the source area is increased due to processes such as advection, dispersion, sorption, diffusion, etc. Areas of concern that appear to show the greatest evidence of subsurface migration include:

1) East of Building #11 in proximity to chemical laboratory scupper drains and a former chemical storage shed; and,

2) South of Building #1 in proximity to the underground concrete silver recovery vault associated with the former wastewater treatment system.

Asbestos fibers generally do not breakdown into other compounds and remain virtually unchanged over long periods of time.

The waste/process materials and impacted building materials generally contain similar contaminants to those identified for the soil and groundwater.

SI Conclusions and Recommendations

Primary contaminants detected in soil and/or groundwater at the Site includes PAH SVOCs and some metals. Areas of most significant soil and/or groundwater contamination include: the area east of Building #11 in proximity to chemical laboratory scupper drain discharges and a former chemical storage shed; and, the area south of Building #1 in proximity to the underground silver recovery vault that is associated with the facility wastewater treatment system. The contamination at the Site appears to be generally limited to within the Site boundaries. Contaminants primarily consisting of PAH SVOCs or metals were detected at many other areas of the Site, but generally at lower concentrations or more limited extents of impact. The approximate areas of surface and subsurface impact are shown on Figure 18 included in Appendix H.

Building materials containing asbestos, chemical contents or residues are present at the Site and have been identified as areas of concern.

The following limitations in data and resulting recommendations have been identified.

- Further metals delineation in the area of the underground concrete silver recovery vault associated with the facility wastewater system. [Note: Alternatively, x-ray fluorescence (XRF) equipment could be used in the field during remediation (i.e., anticipated to be soil/liquid removal) to assist in determining the area of removal in conjunction with subsequent confirmatory soil sampling. The XRF survey work will be confirmed with laboratory analysis of a percentage of soil samples.]

- Further delineation of SVOCs east of Building #11. It is recommended additional surface soil samples and subsurface soil samples be collected and analyzed to define the extent of contamination (primarily SVOCs) in this area.

- Further delineation of SVOC's and metals on the eastern portion of the Site. It is recommended that additional surface and subsurface soil samples be collected and analyzed to define the extent of contamination in this area. In addition, a XRF survey could be performed to assist in evaluating the extent of metals contamination.

- Evaluate subsurface conditions beneath building footprints during or subsequent to demolition of the buildings. Conduct field observation and screening (photoionization detector [PID], XRF, etc.), and analytical laboratory testing of confirmatory samples of soil and/or groundwater.

As part of this project, the contaminants of interest, remediation goals, and response actions have been identified. In regard to these criteria, remedial alternatives for each of the six areas of concern (i.e., AOC1 through AOC6) were developed and evaluated. [Note: Since groundwater impacts generally appear minimal and were detected across the site, remedial alternatives for groundwater are evaluated for the entire Site (i.e., as opposed to each individual AOC) and included in the evaluation for AOC4 (Miscellaneous Areas) except where specifically noted.] These alternatives are summarized below:

AOC1: East of Chemical Lab Building #11

- No Action
- Institutional Action with Delineation
- Soil Capping
- Soil Removal and Disposal

AOC2: Silver Recovery Vault Area

- No Action
- Institutional Action
- Liquid/Soil Removal

AOC3: Eastern Portion of the Site

- No Action
- Institutional Action
- Capping of Impacted Soil
- Soil Removal and Disposal

AOC4: Miscellaneous Areas

- No Action
- Institutional Action
- Institutional Action and Monitored Natural Attenuation
- Capping of Impacted Soil
- Soil Removal and Disposal

AOC5: Asbestos Containing Materials

- No Action
- Institutional Action
- Removal and Disposal

AOC6: Residual Chemicals

- No Action
- Institutional Action
- Removal and Disposal

Beneath Building Footprints

- No Action
- Field Screening/Sampling and Remediation of Underlying Soil

A detailed evaluation of the remedial alternatives for each AOC was performed. A summary of the evaluation and identification of the recommended alternatives for the Site are provided below:

AOC1: East of Chemical Lab Building #11

The no action alternative may not be protective of human health and the environment. In addition, the no action alternative may not be acceptable to the community or in-conjunction with redevelopment of the Site. The institutional action with delineation alternative should reduce exposure to the contaminants in this area since potential future ground intrusive work in this area would be conducted in accordance with a Site Management Plan (SMP). The institutional action alternative may be acceptable to the community and assist in facilitating redevelopment of the Site. The soil capping alternative should be protective of human health and reduce migration of contaminants; however, this alternative would require long-term monitoring of the cover material and is not a permanent remedy. The soil removal alternative should be protective of human health and the environment. Although the soil removal and disposal alternative may be more expensive than the soil capping alternative, the soil removal and disposal alternative is a permanent remedy and should be effective in the long-term. In addition, this alternative should be acceptable to the community and in relation to Site redevelopment.

The recommended alternative for AOC1 (East of Chemical Lab Building #11) is the soil removal and disposal alternative. The actual area of removal and cost of this alternative will depend on the results of the delineation work. In addition, since contamination appears to extend beneath Chemical Lab Building #11, this building should be removed as part of the delineation and soil removal work.

AOC2: Silver Recovery Vault Area

The no action alternative may not be protective of human health and the environment. In addition, the no action alternative may not be acceptable to the community or in-conjunction with redevelopment of the Site. The institutional action alternative should reduce exposure to the contaminants in this area since potential future ground intrusive work in this area would be conducted in accordance with a SMP. The institutional action alternative may not be acceptable

to the community and may inhibit redevelopment of this portion of the Site. The liquid/soil removal alternative should be protective of human health, is a permanent remedy and should be effective in the long-term. In addition, this alternative should be acceptable to the community and in relation to Site redevelopment.

The recommended alternative for AOC2 (Silver Recovery Vault Area) is the soil/liquid removal. Due to the excavation area being in proximity to Building #1 and the high potential for contamination to extend beneath this building, this building should be removed in conjunction with the soil/liquid removal.

AOC3: Eastern Portion of the Site

The no action alternative may not be protective of human health and the environment and may not be acceptable to the community or in relation to redevelopment of the Site. The institutional action alternative should reduce exposure to the contaminants in the Eastern Portion of the Site since potential future ground intrusive work in these areas would be conducted in accordance with a SMP. The institutional action alternative may be acceptable to the community and assist in facilitating proper redevelopment of the Site. The soil capping alternative should be protective of human health and reduce migration of contaminants; however, this alternative would require long-term monitoring of the cover material. The soil removal alternative should be protective of human health and the environment, is a permanent remedy, and should be effective in the long-term.

The recommended alternative for AOC3 (Eastern Portion of the Site) is soil removal. [Note: The results of the delineation work will define the actual areas and volumes of soil to be removed.]

AOC4: Miscellaneous Areas

The no action alternative may not be protective of human health and the environment and may not be acceptable to the community or in relation to redevelopment of the Site. The institutional action alternative should reduce exposure to the contaminants in the Miscellaneous Areas since potential future ground intrusive work in these areas would be conducted in accordance with a SMP. The institutional action alternative may be acceptable to the community and assist in facilitating proper redevelopment of the Site; however, groundwater contamination would not be monitored and potential off-site migration would be unknown. The institutional action and monitored natural attenuation alternative would allow for monitoring groundwater contaminants over time. The soil capping alternative should be protective of human health and reduce migration of contaminants; however, this alternative would require long-term monitoring of the cover material. In addition, the cost of this alternative does not appear warranted since the area is in an industrial setting and the concentrations appear relatively 'low'. The soil removal alternative should be protective of human health and the environment, is a permanent remedy, and should be effective in the long-term. However, the cost of this alternative does not appear warranted since the area is in an industrial setting and the concentrations appear relatively 'low'.

The recommended alternative for AOC4 (Miscellaneous Areas) is the institutional action and monitored natural attenuation alternative.

AOC5: Asbestos Containing Materials

The no action alternative may not be protective of human health and the environment and may not be acceptable to the community or in relation to redevelopment of the Site. The institutional action alternative should reduce exposure to asbestos in the buildings; however, redevelopment of the Site would not be possible under this alternative. The removal and disposal of ACMs would be protective of human health and the environment, is a permanent remedy, and would be effective in the long-term.

The recommended alternative for AOC5 (Asbestos Containing Materials) is the removal and disposal alternative.

AOC6: Residual Chemicals

The no action alternative may not be protective of human health and the environment and may not be acceptable to the community or in relation to redevelopment of the Site. The institutional action alternative should reduce exposure to residual chemicals in the buildings; however, redevelopment of the Site would not be possible under this alternative. The removal and disposal of residual chemicals would be protective of human health and the environment, is a permanent remedy, and would be effective in the long-term.

The recommended alternative for AOC6 (Residual Chemicals) is the removal and disposal alternative.

Beneath Building Footprints

The no action alternative may not be protective of human health (specifically construction workers) and the environment and may not be acceptable to the community or in relation to redevelopment of the Site. The field screening/sampling and remediation of underlying soil alternative should reduce exposure to potential contaminants and provide a system for remediation of potential unknown contaminants.

The recommended alternative for the Building Footprints is the field screening/sampling and remediation of underlying soil alternative.

Site-Wide Remedial Approach

Since each AOC has been discussed separately, a brief summary for the recommended Site-wide remedial approach is provided.

Initially, ACMs will be removed from the buildings at the Site (AOC4). Subsequent to removing ACMs, building equipment and residual chemicals will be removed and disposed of in accordance with applicable regulations (AOC5). The buildings at the Site will then be demolished. The soil underlying the building footprints will be screened in the field to evaluate potential unknown contamination. Subsequent to building demolition, surface and subsurface remedial activities will then be conducted for AOC1, AOC2, AOC3, and possibly within the former building footprints. The recommended delineation activities for AOC3 can be conducted prior to building demolition; however, the delineation activities for AOC1 should be conducted subsequent to demolition of

Building #11. [Note: Delineation is not recommended for AOC2 (i.e., the removal area would be determined with XRF equipment at the time of removal)]. The estimated cost for each of the recommended remedial alternatives and the estimated total present worth remediation cost are shown on Table 20 included in Appendix H.

1.0 INTRODUCTION

The City entered into a SAC with the NYSDEC to perform a SI/RA Project (Project #B00016-8) under the NYSDEC 1996 Clean Water/Clean Air Bond Act - Environmental Restoration Program ("Brownfield" program) at the Former Photech Imaging Systems, Inc. (Photech) property.

The City DEQ originally contracted with IT, now IT Group, to complete the SI/RA project. IT then subcontracted BRG to conduct the tasks associated with the SI/RA project. BRG submitted an incomplete Draft SI/RA report dated July 26, 2000 to the City. Subsequently, IT filed for bankruptcy and did not pay BRG for its services. In 2001 the City terminated it's PSA with IT, and the draft SI/RA report was not completed. Under a separate PSA, the City retained DAY to complete the SI/RA report. Through DAY's PSA, BRG was paid its outstanding invoices and relinquished its files to DAY for use in completing the SI/RA report.

1.1 Purpose of Report

The purpose of this report is to provide an understanding of the environmental condition of the Site based on environmental studies performed as part of this Environmental Restoration project. This report also provides an evaluation of alternatives for addressing the environmental impacts at this Site.

1.2 Site Description

The former Photech Imaging Systems, Inc. property (Site) is located in a commercial/industrial-zoned area in the northwest quadrant of the City. The Site is addressed as 1000 Driving Park Avenue, Rochester, New York and is comprised of approximately 12.5 acres of land and includes various building, sewer and utility improvements. A total of 15 buildings are currently on the Site, comprising approximately 108,000 square feet of space. These buildings formerly housed various manufacturing, laboratory, office, and warehouse operations. A series of below ground tunnels are constructed between several building wings. A number of USTs and ASTs, and a belowground silver recovery system and associated wastewater system piping were formerly used at this facility. Other features of the Site include a former burn pit area, a retention pond basin, asphalt parking lots, and three wooden storage shed-like structures. The location of the Site is depicted in Figure 1 (project locus map) included in Appendix A. The general layout of the Site, including buildings and other features, is depicted in Figure 2 (Site Plan) included in Appendix A.

The buildings are generally composed of concrete, brick and steel construction, with a few small shed structures constructed of wood and/or metal sheeting. When in operation, the facility was serviced by electric, natural gas, and public sewer utilities. A full-scale fire suppression system is also present at the site. With the exception of the sewer drainage system, the utilities are currently disconnected from service. Exterior to the buildings at the Site, the property has a mix of grassy and asphalt covered areas. A drainage swale is located along the eastern boundary of the property and runs to the northeastern corner of the site

The Site is currently bound by: Driving Park Avenue to the south; Holleder Industrial Park to the north; Rochester Distribution Unlimited, Inc. to the east; and Electronic Media Solutions, Inc. to the west. Directly to the south of Driving Park Avenue is the Delphi manufacturing facility. The

Site is approximately 1000 feet east of Mt. Read Boulevard and 2 miles east of Interstate Route 390. A City GIS map depicting the Site and surrounding area is included as Figure 3 in Appendix A.

1.3 Site History

The Site was originally developed in 1948 for the purpose of photographic film and paper manufacturing. It continued to be used for the manufacturing of various types of film up until 1991. Over the history of its operation, many of the existing buildings were constructed subsequent to the initial construction, with the most recent addition completed in 1984.

Several different companies have owned and operated the facility at the Site for photographic paper and film production since its construction in 1948. The most recent owner, Photech Imaging Systems, Inc., ceased operations and abandoned the facility in 1991. Large amounts of chemicals, wastes, and various supplies and materials were left "as-is" on-site when the facility was abandoned. Since closure, the buildings have been vandalized, with ceilings, walls, piping and equipment severely damaged. As a result, asbestos and chemical residues are suspected to be present in many interior areas of the buildings. In addition, available historical information shows evidence of impacts to the subsurface from past Site operations.

1.4 Previous Investigations

A limited number of site characterization and site investigation activities have been performed at the Site and in adjacent areas. The following section summarizes these activities.

1986 Site Audit

An independent contractor completed a site audit in 1986. The audit included a detailed environmental inspection of the plant, a review of waste handling practices, and the completion of a limited number soil borings and groundwater sampling. The audit attempted to find evidence of environmental impairment from past and current practices.

The most significant findings of the 1986 audit included:

- Determining that the underground former wastewater silver recovery vault located adjacent to the Research and Development building has not contributed to any soil or groundwater contamination in the immediate area.
- Determining that one or more of the underground fuel tanks leaked into the surrounding soil.
- Determining that the underground 500-gallon waste methanol tank piping had failed.
- Noting the facility waste handling practices required upgrading or modification to meet regulatory requirements, which included constructing a proper waste accumulation/storage area for the facility.
- Determining that the boiler blowdown, which was discharged to the pond adjacent to the boilers, should be modified to discharge to the sewer system.

Bulk Chemical and Waste Removal Projects

After closing in 1991, the previous owner of the Photech facility did not perform a facility closure to remove and dispose of chemical material and wastes. As a result, the Photech site contained an assortment of abandoned oxidizers, reactive chemicals, flammable liquids, corrosives, poisons, and shock sensitive chemicals that were stored both inside and outside of facility buildings. Many of these chemical materials were stored in deteriorating containers and in unsafe conditions. Subsequent to the closing of the facility, the NYSDEC completed several small interim remedial measures such as removing and disposing of chemical containers and relocating chemical materials (e.g., glycols) to a more secure interior staging area.

In 1994, the NYSDEC and the USEPA performed a bulk waste and chemical removal action at the Photech site. A wide variety of hazardous wastes, process chemicals, and laboratory chemicals stored at the property were removed and shipped off-site for proper disposal. The contents of numerous drums and tanks stored on-site were emptied and/or removed from the site. This project successfully removed the bulk chemicals from the facility.

1.5 Report Organization

This report is organized into sections that pertain to various aspects of this project. Sections 1.0 through 6.0 are associated with the site investigation portion of this project. Sections 7.0 and 8.0 are associated with evaluation of alternatives for addressing the environmental impacts that exist at this Site. These sections are summarized below:

Section 1.0 - Introduction: This section of the report presents the purpose and objective of the SI/RA project, and also presents Site background information, Site history, and previous Site investigation work.

Section 2.0 - Site Investigation and Interim Remedial Measures: This section of the report presents the investigative work and IRM conducted as part of this project. The work includes: evaluation of soil, groundwater; and building materials, closure of ASTs, removal of a spill containment drum associated with a chemical storage shed, and testing of associated media samples by an analytical laboratory. This section also discusses the modifications made to the scope of work outlined in the project Work Plan.

Section 3.0 - Physical Characteristics of the Site: This section of the report presents the physical characteristics of the Site such as surficial features and improvements, geology, lithology, surface hydrology, hydrogeology, demography and land/water use.

Section 4.0 - Nature and Extent of Impact: This section of the report presents the results of site characterization and sample analytical results for the various environmental media tested that are described in Section 2.0. In addition, IRM and building/equipment survey information are discussed.

Section 5.0 - Contaminant Fate and Transport: This section of the report presents information on the fate and transport of contaminants detected at the Site. This includes

information on potential routes of migration, contaminant persistence, and contaminant migration.

Section 6.0 - Site Investigation Conclusions: This section of the report summarizes the findings of the investigative work that was conducted as part of this project and provides recommendations for additional work if deemed necessary.

Section 7.0 - Identification and Development of Alternatives: This section of the report discusses identification and development of alternatives intended to address the environmental impacts present at this Site. The constituents of interest and remediation goals are also identified in this section.

Section 8.0 - Detailed Evaluation of Alternatives: This section of the report presents a detailed evaluation of the alternatives for addressing the environmental impacts at the Site. The recommended alternative is also identified in this section for each area of concern.

Section 9.0 – References: This section identifies a list of references used for development of this report.

Section 10.0 – Acronyms: This Sections provides a list of acronyms used in this report.

2.0 SITE INVESTIGATION

This section of the report presents the investigative and IRM work conducted as part of this project. The site investigation work performed during this project included: performance of a Phase I Environmental Site Assessment (Phase I ESA); performance of investigative activities (Phase I sampling and testing); a performance of supplemental investigative activities (Phase II sampling and testing); and performance of several limited IRMs.

Original Scope of Services

BRG completed the original scope of services outlined in the approved project Work Plan, dated November, 1998. The original scope of services listed in the approved project Work Plan included the following tasks:

- Developed and submitted a Site Investigative Work Plan, including a site-specific Health and Safety Plan, Field Sampling and Analysis Plan, Quality Assurance Plan, and Citizen Participation Plan.

- Conducted a Phase I Environmental Site Assessment of the property in accordance with American Society for Testing and Materials (ASTM) E 1527-97.

- Collected air and wipe samples from inside the facility buildings and tested them for ACMs in order to define safe work areas and determine the areas where proper health and safety precautions need to be implemented during site activities.

- Conducted a detailed site inspection of the property, including all areas of the buildings, to obtain information for use in the environmental assessment, building and equipment (B/E) decontamination survey, suspected asbestos-containing material (SACM) bulk sample survey and site investigation activities.

- Conducted an SACM bulk sample survey of appropriate building materials to determine the type and estimated amount of SACM present at the Site.

- Conducted the B/E decontamination survey to determine the type and estimated amount of chemical residual material present in the buildings, piping, equipment and containers at the Site.

- Collected and analyzed soil and groundwater samples from various locations around the Site in order to obtain and evaluate preliminary site characterization data.

- Observed soil and bedrock samples, and evaluated subsurface litholagy and stratigraphic conditions.

- Conducted geotechnical and hydrogeological testing.

- Cleaned, removed and disposed/salvaged four regulated petroleum and chemical ASTs at the Site.

- Removed and disposed of a spill containment drum associated with the chemical storage shed (Building #15) at the Site.

- Implemented proper dewatering, odor, dust and noise control measures during investigation, IRM, and transportation operations.

- Established security precautions within the support zone and near the work areas as deemed appropriate.

- Properly characterized and arranged for disposal of study-derived wastes generated during this project.

- Demobilized equipment and personnel.

Modifications to Original Scope of Services

Subsequent to the submittal and approval of the project Work Plan, BRG implemented a number of modifications to the original scope of services for the Photech SI/RA project. These modifications were the result of knowledge gained from on-going field activities, and requests made by NYSDEC and/or City representatives. Prior to being implemented at the Site, the modifications to the project scope received approval from NYSDEC and/or City DEQ representatives.

The modifications to the project scope included the following tasks:

- Approval to not have to construct a permanent support zone and decontamination zone at Site since previous waste characterization work at the Site did not identify significant or widespread areas of contamination.

- Completion of a comprehensive site inspection and interview with a former Photech plant engineer.

- Records search and inspection of the former silver recovery system that previously was not unidentified during work plan development.

- Analysis of selected SACM samples via Transmission Electron Microscopy (TEM) to determine non-friable organically bound (NOB) content.

- Non-analytical determination of selected building materials assumed to contain asbestos material.

- Inventory of fluorescent light ballasts to determine if PCBs capacitors are present on-site.

- Deletion of one (1) direct-push test boring location during Phase I of the subsurface investigation.

- Addition of two (2) direct-push test boring locations during Phase I of the subsurface investigation.

- Deletion of one (1) surface soil sample location during Phase I of the investigation.

- Performed analysis of total petroleum hydrocarbons (TPH) on fifteen (15) soil samples collected from direct-push test borings.

- Addition of one (1) groundwater monitoring well location, bringing the total to ten (10) well locations during Phase II of the subsurface investigation.

- Completion of well development, soil and groundwater sampling and aquifer testing activities at one (1) additional groundwater monitoring well location.

- Performed additional sample laboratory analyses [95-1, 95-2, 6010, 8015, total organic carbon (TOC), and grain size] for soil and groundwater samples at one (1) additional groundwater monitoring well location.

- Collection of an additional soil sample at Well #01 for Toxicity Characteristic Leachate Procedure (TCLP) analysis.

- Completion of one (1) additional test pit adjacent to the northwest corner of Building 5 (Boiler Building).

- Conducted chain-link fence removal at the Site in order to gain access to the rear of the chemical storage shed (Building #15).

- Collection and analysis of solid and aqueous samples to determine waste characterization status prior to initiation of tank closure and removal IRM work.

- Collection and analysis of concrete dry well structure contents and adjacent soils after its discovery during excavation of a test pit.

- Submittal of project progress reports and two-week schedule updates on a regular basis throughout the performance of field activities.

2.1 Phase I Environmental Site Assessment

BRG performed a Phase I ESA for the Site as part of this SI/RA project. The Phase I ESA was conducted utilizing generally accepted Phase I industry standards consistent with ASTM Standard E 1527-97. The independent findings and conclusions contained in this section are based on best professional judgment available information and data, and factual data provided by those interviewed during the course of the project.

2.1.1 Phase I ESA Approach and Limiting Conditions

BRG conducted a Phase I ESA of the Site, which consisted of a site visit and an interview with a former Photech employee (i.e., Dick Dingle, Plant Engineer). In addition, BRG reviewed available Federal and New York State records in an effort to identify sites with known or suspected hazardous waste activity located at or near the Site that could have an adverse impact on the Site. This Phase I ESA is based on the evaluation of the information obtained and accessible at the time it was performed.

The scope of work included an evaluation of:

1. Current Site conditions (as applicable), including compliance with appropriate regulations as they pertain to the presence or absence of:

   (a) The use of hazardous substances and petroleum products including storage tanks, drums, and containers (above and below ground), etc.

   (b) The use of hazardous materials/chemicals and petroleum products, and/or the presence, generation, treatment, storage, or disposal of hazardous, regulated, or medical wastes.

2. Visual observation of the adjacent properties to identify potential high-risk properties and the potential for contamination, if present, to migrate onto the Site.

3. The Site history in an attempt to identify possible ownership(s) and/or uses that would suggest an adverse impact to the environmental integrity of the Site. This was identified through review of reasonably ascertainable standard historical sources.

4. An evaluation of information contained in programs such as National Priority List (NPL), Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), Resource Conservation and Recovery Information System (RCRIS), Solid Waste Landfill (SWLF), Leaking Underground Storage Tank (LUST), and other governmental information systems within specific search distances of the Site. This evaluation was performed to identify any properties that would have the potential to impact the environmental integrity of the Site. The regulatory agency report provided is based on an evaluation of the data collected and compiled by a contracted data research company. The report is based on a radius search, which focuses on both the Site, and neighboring properties, which may impact the Site. Neighboring properties listed in governmental records are identified within a specific search distance. The search distance varies depending upon the particular government database being checked. The search is designed to meet the requirements of ASTM Standard E 1527-97. The information provided is assumed to be correct and complete.

It should be noted that information required to be in a Phase I consistent with ASTM Standard E 1527-97, which is addressed elsewhere in this SI/RA report, has not been repeated for formatting purposes.

2.1.2 Site Reconnaissance

BRG performed a site visit on August 17, 1999, which included observation of Site features and adjoining properties. Mr. Jeff Korb (BRG Environmental Professional) met with Mr. Dingle (former Photech plant engineer for over 20 years) to perform the site visit. The site visit included walking the perimeter of the property and walking through each of the buildings. Adjoining properties were observed to evaluate activities being performed and whether there is potential for adverse environmental impact to the Site.

Hazardous Substances/Petroleum Product Uses and Storage

A wide variety of chemicals were used, handled, and stored at the Photech facility when it was in operation. A majority of the chemicals used at the Photech facility were interior to the buildings. Refer to Section 4.4.2 of this SI/RA report for further detail of locations, quantities and types of hazardous substances used and handled inside the buildings. An overview of storage and handling of hazardous substances and petroleum products exterior to the buildings at the time of the assessment are addressed below in the storage tanks and pipelines subsection.

Potential for PCB-Containing Electrical Equipment

Two oil-containing electrical transformers were observed on the Site. Consequently, surface soil, wipe, bulk, and subsurface samples were taken and analyzed for PCBs, as part of the SI/RA project but did not result in evidence of PCB contamination on-site.

Asbestos Containing Materials

ACMs were observed and confirmed through an asbestos survey. To review locations and content of ACMs in the buildings, refer to Asbestos Survey Sections 4.4.1 and 6.2.2.

Indications of Solid Waste Disposal

At the time of the site visit, there were no visual observations of solid waste disposal on the Site exterior to the buildings. However, the building interiors contained an excessive amount of debris resulting from vandalism. The debris includes: laboratory equipment, process equipment, office supplies, and building materials. Further details regarding the building interiors are presented in Sections 4.4.2 and 6.2.2.

Storage Tanks and Pipelines

A 10,000-gallon fuel oil AST was located on the east side of the Site at the time of the site visit. According to Mr. Dingle, the fuel oil tank was never used. Based on observation of the interior of the tank, it did not contain petroleum product. This tank was removed as part of the IRM activities of the SI/RA project presented in Section 2.2.3.

Two methanol ASTs (i.e., 10,000 and 2,500 gallons) and one 2,000-gallon waste methanol AST were observed on the north side of the property. At the time of the site visit, these tanks were observed inside of earthen berm secondary containment structures lined with high-density

polyethylene. These tanks also were removed as part of the IRM activities of the SI/RA project as presented in Section 2.2.3.

On the south side of the property is a silver recovery system which was utilized by the Photech facility while in operation. Wastewater containing silver was collected inside Building 2 and discharged outside through the following order of equipment:

- A 12,000-gallon wastewater AST,
- a 12,000-gallon underground silver recovery vault,
- a 3,000-gallon wastewater UST,
- an on-site lateral equipped with a man hole, and
- a public sanitary sewer system in cessation.

The 12,000-gallon wastewater AST has an earthen berm containment structure lined with high-density polyethylene. The 12,000-gallon underground recovery vault and its containment were observed to be filled with water. No records were available to determine the integrity of the 3,000-gallon wastewater UST. Based on historical records/reports, the plant had overflows occur at the 12,000-gallon recovery vault while in operation of the facility, but they were contained to the vault's dike.

The foundation of a shed on the east side of Building 11 still remains on-site. Reportedly, the shed used to contain drums of chemicals and hazardous wastes. A pipe extends from a sink in the organic lab of Building 11 which used to drain into a drum located on the shed foundation for satellite storage of hazardous waste. According to historical photographs and interviews with Mr. Dingle, full drums were also stored on the grass area along the east side of Building 11.

A former Chemical Storage Shed is located on the west side of the Site. Reportedly, the three-sided shed acted as secondary containment for chemical and hazardous waste storage.

Wetlands

Based on review of a portion of a National Wetlands Inventory map (Rochester West Quadrangle), the area immediately north and east of the Site is classified as a broad-leaved deciduous forested Palustrine System wetland (PF01A). Additionally, based on the site visit, it appears that the trench on the eastern boundary on the northern end of the facility is within this classified wetland area. Actual delineation work would need to be conducted in order to determine whether wetlands are on-site.

Adjoining Property Observations

Adjoining properties are currently commercial or industrial. General Motors Delphi Plant, which is an industrial property that is generally upgradient from the Photech property, is located to the south across Driving Park Road. [Note: This adjoining property is a listed NYSDEC Inactive Hazardous Waste Disposal Site (refer to Section 2.1.5 of this report)]. Based on historical records review and a government agency interview, subsurface contamination resulting from historical releases at the General Motors Delphi Plant has the potential to adversely impact environmental conditions at the Photech Site.

Bordering the east side of the Site is Rochester Distribution Unlimited, which is a transportation company. On the west side are commercial properties including Electronic Data Systems, Inc. and Monroe Muffler, which based on observations and historical records are not anticipated to have adverse environmental impact to the Photech Site. To the north of the Photech Site is the Holleder Industrial Park, of which Apollo Tool and Die is the closest occupant in relation to the Site. A wooded area separates the Apollo Tool and Die property from the Photech property and this adjoining property is in an inferred downgradient location.

Based on historical records (including Sanborn Maps and aerial photographs), the property was primarily surrounded by wooded area through 1975 with exception to the General Motors Delphi Plant which was built prior to the Photech facility.

2.1.3 Interviews

The following interviews were conducted throughout the course of the assessment.

Interviews of the Owner

On August 17, 1999, an interview and facility walkover was conducted with Mr. Dick Dingle who was the Plant Engineer for the Photech facility before it ceased operations in 1991. Mr. Dingle explained operations or activities that took place and their approximate locations at the facility that could have caused impairment to the environment during the site visit. Significant operations and/or activities include the following:

1) An underground acid crock may be located along the west side of Building 11, and has not been used since the 1960s. [Note: The existence of this "acid crock" could not be substantiated during the performance of this SI/RA]
2) Tanks in Building 2 that were used for emulsions are above grade. These tanks were commonly referred to as crocks by Photech employees, and are located in the basement of Building 2. This process was changed in the 1980's with the addition of the wastewater tank.
3) The paint locker and paints were removed from Building 3 by the USEPA.
4) An underground storage vault (suspected drywell) exists east of Building 3. [Note: This vault is further detailed in the Interim Remedial Measures Activities Section 2.2.3).
5) The concrete slab currently used for the carpenter shop was the foundation for a film incinerator. The ash was kept in garbage cans during operation of the incinerator.
6) Open burning of cafeteria and office waste was conducted in the retention pond area. No silver laden waste was burned on the ground.
7) The facility converted to natural gas heat in the mid 1980's.
8) A 500-gallon waste chemical tank was removed.
9) Lithium chloride solution remains in the dehumidifier near the coating alley.

Interviews with Government Agency

On May 2, 2000, Mr. Joseph Biondolillo from the City was contacted by BRG to discuss properties that adjoin the Site. Initially, BRG discussed with Mr. Biondolillo the presence of the Erie Canal immediately across Driving Park Avenue in the early 1900s. According to Mr. Biondolillo, the canal has many suspected sites that were landfilled. NYSDEC records (i.e., letter dated 1/29/1993) show that the area immediately across from the Site, known as Western-Wide Waters Area, was subject to landfilling and is considered a Class 2 site by the State Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Program.

Mr. Biondolillo was asked about the Delphi facility located to the south, since subsurface investigations and historical records indicate that the Delphi facility is generally upgradient from the Site. Mr. Biondolillo said that the Delphi facility is known to have chlorinated solvent contamination and light non-aqueous phase liquid (LNAPL) hydrocarbons in overburden as well as deep in bedrock. A blasted-bedrock groundwater remediation trench has been installed to collect contaminated groundwater.

A July 15, 2003 review with Mr. Biondolillo indicated that Delphi has installed one bedrock groundwater monitoring well (designated as well R-302) on the Photech Site to evaluate the extent of contamination that has migrated off the Delphi property. Analytical laboratory test results for a groundwater sample collected from this on-site well by Delphi in April 2003 was found to contain no VOCs or SVOCs at concentrations above reported analytical laboratory detection limits. The metals cadmium, copper, lead and zinc were detected above reported analytical laboratory detection limits, but at concentrations below corresponding NYSDEC TOGS 1.1.1. In addition, groundwater samples have been collected in the past from wells drilled 20 feet into bedrock on the Holleder Industrial Park area, which is immediately north of the Site, and no contamination was detected.

2.1.4 Historical Records Review

The records reviewed during the preparation of this assessment included Chain of Title, Monroe County Department of Health records, New York State Department of Environmental Conservation records, ASTM Standard Environmental Database records, aerial photography, Sanborn Maps, and records remaining on-site, as available.

Chain of Title

The deeds and titles reviewed for the Site are provided below.

Legal Description	Grantor	Grantee	Type	Year Transferred
Lieber 2314, Folio 379	City of Rochester	Technifinish Laboratory, Inc.	Deed	03/26/1946
Lieber 2539, Folio 6	Charles J. Briggs, Trustee in Bankruptcy of Kryptar Corporation.*	Bell and Howell Company	Deed	03/29/1949
Lieber 4385, Folio 255	Bell and Howell Company	Anken Industries	Deed	12/29/1972
Lieber 6964, Folio 248	Rhone Poulenc, Inc. (formerly Anken Industries)	Photech Imaging Systems, Inc.	Deed	07/24/1986
Lieber 7667, Folio 345	Photech Imaging Systems, Inc.	County of Monroe Industrial Development Agency	Deed	06/29/1989
Lieber 8741, Folio 0602	Monroe Industrial Development Agency	Photech Acquisition Corp.	Quit Claim Deed	05/13/1996
Lieber 8903, Folio 0379	COMIDA – Photech Imaging Systems, Inc.	City of Rochester	Tax Foreclosure Deed	08/11/1997

* After reviewing this deed, it is unclear if Technifish Lab, Inc. is part of Kryptar Corp.

The title review indicates that the Site has been used for industrial activities since 1948. The City representative(s), it currently holds the title to the Site through foreclosure. The Site had an environmental lien placed on it by the U.S. Environmental Protection Agency for the clean up work performed through an Emergency Action Response Order, but the lien was discharged with the foreclosure of the Site. As a result, there are currently no environmental liens on the Site.

Aerial Photography

The aerial photographs for the years 1930, 1951, 1961, 1970, 1975, 1988, and 1999 were reviewed. Figure 4 included in Appendix A presents a 1975 aerial photograph that includes the Site. Observations made during review of each aerial photograph year are presented below.

1930 - Land was used for agriculture. No buildings or improvements observed

1951 - The manufacturing facility was built. Original facility contained Buildings 2, 3, 4, 5, 7, 11, 13 and 16.
- Two ASTs were located where the 10,000-gallon fuel oil tank was located.
- Chemical shed existed but no paving was around it.

1961 - A trench extends east from around the chemical shed to Building 7.
- A trench extends from Building 7 to the northeast corner of the property.
- Chemical storage shed had 6-12 drums to the North side of it.
- Dirt driveway extends southwest into woods from chemical storage shed.
- Open burn pit appears to extend from Building #17 to the north side of property.
- No retention pond evident.
- No tank farm or waste methanol tank on the property.

1970 - No significant changes since 1961.

1975 - Waste materials appear to be in the retention pond area.

1988 - Still evidence of the same two trenches observed in 1961 aerial photograph.

1999 - Building 1, 6, 8, 9, 12, and17 have been added.
- Pipe extends from Building 12 to waste methanol tank.
- Soil west of chemical storage shed and at Northeast corner of property appears to be a different color than surrounding areas.

Sanborn Map Review

Sanborn Maps for the years 1910, 1926, and 1971 were reviewed as part of this Phase I ESA. Table 3 presents observations made during review of each Sanborn Map year.

1910 - The Site was owned by Lucy E. Hartman. No development was present in the surrounding area. The Erie Canal was parallel to the opposite side of Driving Park Avenue.

1926 - The Site was owned by Lucy E. Hartman. The area east of the property was subdivided into small building lots. The area where the Erie Canal was present is now owned by the City of Rochester.

1971 - The facility was constructed in 1948 with major additions in the 1950s. The above ground fuel oil tank existed. The Carpenter Shop was designated as "Carton Storage".

Previous Assessments and Investigations

1. An Environmental Site Assessment was performed for ongoing operations of the Rochester Film Company (Division of Rhone-Poulenc Systems Company) in July 1986. Details of the site assessment can be found in Section 1.0 of this SI/RA report.

2. In 1994, the NYSDEC and the USEPA performed a bulk waste and chemical removal action at the Site. Further details of the removal action can be found in Section 1.0 of this SI/RA report.

2.1.5 Environmental Database Records Review

BRG retained VISTA Information Solutions, Inc. (VISTA) to provide environmental databases to be reviewed as part of this Phase I ESA in order to identify if the Site or adjacent/nearby facilities have had environmental releases that may affect the environmental condition of the Site: NPL, RCRA-Corrective Actions (CORRACTS) RCRA-permitted Treatment, Storage and Disposal (TSD) facility, state equivalent priority list (SPL), state equivalent CERCLIS list (SCL), State SWLF, State UST/AST, State LUST, RCRA-TSD, Emergency Response Notification System (ERNS), large quantity hazardous waste generator (LG GEN), small quantity hazardous waste generator (SM GEN), and State Spills. VISTA's database search report output dated August 6, 1999 is included in Appendix B of this SI/RA report. BRG also reviewed the unmappable sites in the VISTA database report, cross-referencing addresses and site names. A review of the files at the Monroe County Department of Health (MCDOH) and NYSDEC was completed to provide further insight as to potential contamination from cited database findings. Records that assisted in providing evidence of whether contamination is present or not are indicated below.

NPL: The NPL is the USEPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program.

No NPL sites were identified at or within, one mile of the site.

RCRA-CORRACTS: The USEPA maintains a database of RCRA facilities that are undergoing "corrective action".

Four RCRA-CORRACTS sites were identified within one mile of the site, which are as follows:

- Alliance Tool Corp, 1390 Mt. Read Blvd., Rochester, NY 14606 – no notice of contamination resulted from a RCRA Facility Assessment.
- EI DuPont DeNemoirs Company Rochester, 666 Driving Park Avenue, Rochester, NY 14613 – no notice of contamination resulted from a RCRA Facility Assessment.
- Imation Enterprises Corp., 1999 Mt Read Blvd., Rochester, NY 14601 – Pollutants detected included acetone, acetate, and VOCs – Status unknown.
- Delphi Automotive Systems, 1000 Lexington Avenue, Rochester, NY 14613 – Pollutants detected include trichloroethylene, chlorinated solvents, and lead resulting in groundwater contamination.

Based on review of the RCRA-CORRACTS records, these sites are not expected to adversely impact environmental conditions at the Photech site with exception to the contamination present at Delphi Automotive Systems. Previous subsurface investigations performed at the Delphi facility indicate that groundwater is generally flowing in a north/northeast direction. As previously stated, the contamination resulting from the Delphi facility is suspected to have the potential to migrate into deep bedrock beneath the Photech facility.

State-SPL: The State of New York maintains a database of sites that are on the State Superfund Program.

Two State-SPL sites were identified within one mile of the site, which are as follows:

- Delphi Automotive Systems, 1000 Lexington Avenue, Rochester, NY 14613 (NYSDEC Site #828064) – Pollutants detected include trichloroethylene, chlorinated solvents, lead heavy metals, petroleum hydrocarbons, polychlorinated biphenyls and stoddard solvent. LNAPL, soil contamination and groundwater contamination are present at this waste site.

  NYSDEC records contained a letter dated 1/29/93 that indicates LNAPL hydrocarbons were discovered floating on top of the water table in 1988 at the Delphi Facility. Remedial measures have been implemented since 1989. Additionally, NYSDEC records indicate a spill was reported from the Delphi facility as a result of contamination found in observation wells (i.e., spill report dated 5/8/95). The files reviewed also indicate a historical release from the Delphi facility's former plating area. Materials detected include lead, nickel, chromium, mercury, and cadmium. Based on groundwater flow direction, the aforementioned contamination could potentially migrate to the Photech property.

- Burrough-Unisys site, 1225 Ridgeway Avenue, Rochester, NY 14615 (NYSDEC Site #828075) – Pollutants detected include: acetone, acetate, and VOCs. Remedial measures conducted to date were successful in remediation of soil contamination, and one small area of groundwater contamination above cleanup criteria reportedly persists. Monitored natural attenuation is being implemented at this area of groundwater contamination. Based on the groundwater direction, the Burrough-Unisys Site is upgradient from the Photech Site and should not have adverse impact on the Site.

State-SCL: The State of New York maintains a database of sites that are listed on the Voluntary Cleanup Program.

No State-SCL sites were identified at or within, one mile of the Site.

CERCLIS: The USEPA maintains a list of sites that are either proposed to be or are on the NPL and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Only the Photech Site was identified as a CERCLIS site and is detailed as follows:

- Photech, Inc., 1000 Driving Park Avenue, Rochester, NY 14613 – USEPA funded preliminary assessment and removal completed 6/25/96.

There is suspected contamination at the Photech Site, which is further detailed in Sections 4 and 5 of this SI/RA report.

NFRAP: No further remedial action planned (NFRAP) sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.

Two NFRAP sites were identified within 0.5 mile of the site, which are as follows:

- MX Innovations, Inc., New Berry Street, Rochester, NY 14613 – A preliminary assessment funded by USEPA found contamination and further remedial action was planned as of 4/2/87.

- Delphi Automotive Systems, 1000 Lexington Avenue, Rochester, NY 14606 – Preliminary assessment funded by NY State, which further remedial action was to occur as of 6/2/87.

Based on area groundwater flow direction and historical records, it is not suspected that MX Innovations, Inc. will have an adverse impact on the Photech Site. The Delphi facility has been previously discussed in the RCRA CORRACTs and State SPL database records.

RCRA-TSD: USEPA maintains a database of facilities that are authorized to treat, store, or dispose of hazardous waste.

No RCRA TSD sites were identified at, or within, 0.5 mile of the Site.

State SWLF: The State of New York maintains a database of permitted solid waste management facilities.

One State SWLF site was identified within 0.5 mile of the Site, which is:

- Waste Management of NY, Inc. Rochester, 1661 Mt Read Blvd. Rochester, NY – Recycling facility.

No spills or reported releases have occurred at the Waste Management facility according to environmental database records; consequently, it would have no adverse impact to the Photech property.

LUST: The State of New York maintains a database of LUST.

Two LUST sites were identified within 0.5 mile of the Site, which are as follows:

- Rochester Film (Photech Site), 1000 Driving Park Avenue, Rochester, NY – No. 2 fuel oil contamination found on-site from leaking underground storage tank in 1986. Spill status is closed (i.e., spill addressed to satisfaction of NYSDEC). Records reviewed by BRG during a file review indicate that contaminated soil was removed with the USTs.

- Vancurler Trucking, 121 LaGrange Avenue, Rochester, NY – Empty UST suspected to have had a leak in past. The tanks removed and the spills were closed on 10/28/87. Based on area groundwater flow direction and historical records, it is not suspected that Vancurler Trucking LUST would have had an adverse impact on the Photech Site.

UST/AST: The State of New York maintains a list of UST/ASTs that are registered with the state.

Ten registered UST/AST sites were identified within 0.25 miles of the Site. The off-site registered UST/AST Sites are not suspected to have an adverse impact on the Photech Site.

Based on the file review conducted at the NYSDEC, two methanol ASTs that were located at the Photech Site, these ASTs were and removed as a result of Interim Remedial Measures performed as part of the SI/RA project (refer to Section 2.2.3).

ERNS: The ERNS is a national database used to collect information on reported releases of oil and hazardous substances.

No ERNS sites were identified at, or within 1/8 mile of the Site.

RCRA LG-GEN/SG-GEN: The USEPA maintains a list of registered generators of hazardous wastes. Three LG-GEN (large generator) sites were identified within 1/8 of a mile of the property, which are as follows:

- Photech, Inc., 1000 Driving Park Avenue, Rochester, NY 14615 (the subject Site).
- Donovan Paint Company, 159 LaGrange Avenue, Rochester, NY 14615.
- Metro Circuits, 205 LaGrange Avenue, Rochester, NY 14615.

There is suspected contamination at the Photech Site, which is further detailed in Sections 4 and 5 of the SI/RA report. No reported spills of hazardous waste have occurred at the other two nearby RCRA sites; thus, they are not suspected to adversely impact the Photech Site.

State Spills: The State of New York maintains a spill incident database via the Spill Incident Information System.

Five spills sites were identified within 1/8 mile of the Site, which are as follows:

- Air Compac, Inc., 970 Driving Park Avenue, Rochester, NY 14615 – 30 gallon drum leaking. The material was contained to the loading dock (10/27/87).
- Photech, Inc., 1000 Driving Park Avenue, Rochester, NY 14615 (subject Site) – Silver Nitrate tank overflowed into containment area (3/9/89). Additionally, anonymous caller reports photographic chemicals dumped into drains which lead to the storm sewer.
- Vanculler Trucking, 121 LaGrange Avenue, Rochester, NY 14613 – Empty UST suspected to have a No. 2 Fuel Oil leak. The tank was removed and case closed on 10/28/87.
- TG Speed Shop, 145 LaGrange Avenue, Rochester, NY 14613 – Abandon drums found in standing water, remediation status closed (5/13/90).
- Canny Trucking, 900 Driving Park Avenue, Rochester, NY 14615 – Leaking 55-gallon drum of pelargonic acid one gallon leaked on concrete, remediation status closed (5/1/89).

Based on review of these records, the spills were primarily contained to the mentioned sites and should not have an adverse impact on the Photech Site with exception to the Photech Spill

record. Based on review of records from the NYSDEC, Photech employees only placed photographic chemicals into drains that lead to the silver recovery system.

2.1.6 Phase I ESA Findings

BRG performed a Phase I ESA within the scope and limitations of ASTM Practice E 1527-97 of the Photech Site at 1000 Driving Park Avenue, Rochester, Monroe County, New York. Any exceptions to, or deletions from, this practice are described in the Introduction to the Site Assessment Section. The Phase I ESA identified recognized environmental conditions (RECs) in connection with the property including the following:

1. Trash and debris and remaining bulk chemicals inside buildings from vandalism.
2. Potential subsurface contamination in the vicinity of the silver recovery system. System modifications need to be taken into account for past contamination.
3. Existing sewer manhole at southeast corner of the Site.
4. Potential contamination in the vicinity of the shed foundation east of Building 11.
5. Storage Vault (suspected drywell) located east of Building #3 (Maintenance Shop).
6. Potential contamination in the vicinity of the chemical storage shed and adjacent parking area on the west side of the property.
7. Former film incinerators located at the base of carpenters shed and east of the Boiler House.
8. Potential contamination in the retention pond area and east of Building 5 where open burning of trash took place.
9. Drainage swale on northeast side of Site.
10. Former waste chemical tank (500 gal.) located north of the Subcoat Building.
11. Asbestos containing materials throughout the buildings.
12. Groundwater contamination deep in bedrock attributable to the nearby Delphi facility located to the south.
13. Former incinerator room inside subcoat Building 12.

2.2 Intrusive Studies

Intrusive studies were conducted to determine the nature and extent of potential soil and groundwater contamination at the Site. The Phase I ESA findings were used to assist in the placement of test locations at the Site. This work focused on former chemical and waste materials handling and storage areas and included an evaluation of potential on-site and/or off-site migration of contaminants.

The intrusive studies were performed in two phases (Phase I and Phase II). Phase I studies included evaluating numerous areas of the Site for the presence of contamination and provided preliminary data and findings. Information obtained during the Phase I portion of intrusive studies was used to determine groundwater monitoring well locations and additional test boring locations that were conducted during Phase II studies in order to further assess the nature and extent of contaminated areas. Maxim Technologies, Inc., Hamburg, New York was retained by BRG as the drilling subcontractor to perform drilling activities in Phase I and Phase II of the project. Limited intrusive studies (i.e., test pit excavations) were also conducted during the IRM work conducted as part of this project. Each phase and the test pit activities are described below.

2.2.1 Phase I Studies

Asbestos Sampling

BRG subcontracted Paradigm Environmental Services, Inc. (Paradigm) to conduct sampling for ACMs. Asbestos sampling was conducted in two phases (i.e., Phase I and Phase II asbestos sampling). Phase I asbestos sampling included environmental air sampling and wipe sampling for ACMs present on building walls, floors, and equipment to determine and establish the appropriate regulated areas within the buildings where asbestos-trained personnel and respiratory protection would be required and to identify and ascertain the extent of asbestos fiber contamination on structural components and equipment located in the buildings.

The environmental air samples were collected by NYSDOL-certified Air Technicians in order to monitor the concentrations of airborne fibrous material in various areas of the facility. Fifteen (15) air samples were collected from Buildings 1, 2, 7, 11, 12, 13, 16, and 17. The air samples were generally collected in accordance with the sampling procedures described in New York Code of Rules and Regulations (NYCRR) Title 12, Part 56. The samples were analyzed by Paradigm for airborne fibrous material using Phase Contract Microscopy (PCM) in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400 as prescribed in NYCRR Title 12, Part 56 subparagraph 17.4(d). The environmental air sampling results were compared to applicable Federal OSHA airborne asbestos working levels, as codified in 29CFR Title 29 Part 1926.1101. The PEL is defined as airborne concentrations of 0.1 fibers per cubic centimeter (f/cc) of air as an 8-hour time weighted average (TWA).

Also as part of the Phase I asbestos sampling, Paradigm collected wipe samples inside the buildings from walls, floors, equipment, and other surfaces. The wipe samples were collected by NYSDOL-certified Asbestos Building Inspectors and were generally collected in accordance with the guidelines outlined in NYCRR Title 12, Part 56. Twenty-six (26) wipe samples were collected from various surfaces in Buildings 1, 2, 7, 11, 12, 13, 16, and 17 during Phase I activities. Paradigm analyzed the wipe samples for asbestos using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) Method 198.1. The test results of the wipe sampling were used to evaluate the presence of ACMs tested surfaces in facility buildings.

Building and Equipment Decontamination Survey

The B/E decontamination survey was conducted to identify and estimate the amount of process/waste liquids and building materials and equipment with residual contamination. The results of the B/E decontamination survey were used to develop recommendations for appropriate decontamination, cleaning, or removal of any potentially hazardous substances present in the buildings at the Site. The B/E survey was completed in two phases (i.e., Phase I B/E Survey and Phase II B/E Survey). Phase I included gathering information and Site recconnaissance.

BRG collected available information from: the City DEQ, Site historical/operations records, and data collected as part of the Phase I ESA. Based on this information, areas of concern in each

building were identified and a Sampling and Analysis Plan (SAP) was developed. The SAP provided a plan for collection of wipe and bulk samples to identify and estimate quantities of residual contamination and waste/process liquids inside the buildings at the Site. The SAP was approved by the City. The Phase II B/E Survey consisted of implementation of the SAP.

Direct-Push Test Borings

Between June 29, 1999 and July 1, 1999, a total of 35 test borings (designated as GS-01 to GS-07, GS-09 to GS-20, GS-23 to GS-25, GS-27, GS-32 to GS-40, and GS-42 to GS-44) were advanced using direct-push drilling equipment. Samples were collected in accordance with the procedures outlined in Section 4.5.1 of the approved Project Work Plan and Section 2.4.2 of the Field Sampling and Analysis Plan (Appendix B of the Project Work Plan). The locations of these test borings are shown on Figure 5 included in Appendix A. As shown, samples were collected from the following areas:

- Open burn pit area (GS-01)
- Retention pond area (GS-02, GS-03, GS-04, GS-05)
- 10,000-gallon fuel oil AST area (GS-06)
- Former fuel oil UST area (GS-07)
- Northwest parking area (GS-09, GS-10, GS-14, GS-43)
- Tank farm containment berm area (GS-11, GS-12)
- Former waste chemical UST area (GS-13)
- Silver recovery vault area (GS-15, GS-16, GS-17, GS-18)
- Silver wastewater AST area (GS-20)
- East of emulsion building #2 near former loading dock area (GS-23)
- West and east of building #11 (GS-24, GS-25)
- Suspected underground chemical concrete vault area (GS-27)
- Former incinerator area near subcoat building #12 (GS-32)
- East of drying addition building #17 (GS-33)
- East of coating building #7 (GS-34)
- 3,000-gallon silver recovery wastewater UST area (GS-42)
- Exterior sump area between buildings #12, #16 and #17 (GS-44)
- Perimeter locations around the industrial facility (GS-19, GS-35, GS-36, GS-37, GS-38, GS-39, GS-40)

The test borings were advanced to depths between 4.0 feet and 15.1 feet below the existing ground surface. Geoprobe Systems sampling equipment was used to collect soil samples typically in four-foot intervals throughout the entire depth of the test borings.

The recovered soil samples were visually examined for evidence of suspect contamination (e.g., staining, unusual odors) and to document the type of fill, soil, etc. present at each location. Portions of the recovered soil samples were placed in containers for possible laboratory analysis. Different portions of the recovered soil samples were screened with a PID. A BRG representative recorded pertinent information for each test boring on Sample Collection Logs and Visual Classification of Soils logs, available copies of which are included in Appendix C.

Soil samples were selected for analytical laboratory testing based upon PID measurements, sample observations, and relative location on the Site for delineation purposes. The samples selected for analysis, and the specific analyses performed on each sample, are listed on "Phase I Geoprobe Boring Soil Sample Results" tables included in Appendix D. The samples were delivered under chain-of-custody control to Columbia Analytical Services, Inc. (CAS) for analytical laboratory testing. CAS is a NYSDOH ELAP-certified analytical laboratory. RSCOs and typical background ranges (metals only), as referenced in the NYSDEC TAGM 4046, are included on the applicable tables. The concentrations of cadmium and chromium detected in soil samples were also compared to their respective RSCOs as referenced in the "proposed" 1995 TAGM 4046. For metals without RSCOs or typical background ranges listed in TAGM 4046 (i.e., antimony, silver, and thallium), the residential RBCs referenced in the USEPA Region III RBC table dated October 8, 2004 were used for comparison.

The analytical laboratory test results were reported in NYSDEC Analytical Services Protocol (ASP) Category B deliverables reports. Copies of CAS' summary data packages for these reports are included in Appendix E.

Surface Soil Samples

A total of 18 shallow or surface soil samples were collected in accordance with the procedures outlined in Section 4.5.1 of the approved Project Work Plan and Section 2.4.2 of the Field Sampling and Analysis Plan (Appendix B of the Project Work Plan). The locations of these surface soil samples are shown on Figure 6 included in Appendix A. As shown, surface soil samples were collected from the following areas:

- Rear of chemical storage shed (SS-08)
- Asphalt parking lot on northwest portion of Site (SS-09A, SS-09B, SS-09C, SS-09D, SS-10A, SS-10B, SS-10C, SS-10D)
- Beneath 12,000-gallon wastewater tank containment liner (SS-21)
- East side of Building #11 (SS-26A, SS-26B, SS-26C, SS-26D, SS-26E)
- North of former transformer pad (SS-28)
- Former film incinerator/transformer station (SS-29)
- Cement culvert water discharge location associated with former retention pond (SS-30)

Portions of the recovered soil samples were placed in containers for laboratory analysis. Different portions of the recovered soil samples were screened with a PID. A BRG representative recorded pertinent information for each surface soil sample on Sample Collection Logs and Visual Classification of Soils Logs, available copies of which are included in Appendix C.

The samples selected for analysis, and the specific analyses performed on each sample, are listed on "Phase I Surface Soil Sample Results" tables included in Appendix D. The samples were delivered under chain-of-custody control to CAS for analytical laboratory testing. RSCOs and typical background ranges (metals only), as referenced in the NYSDEC TAGM 4046 dated January 24, 1994, as amended by the NYSDEC's supplemental tables dated August 22, 2001, are included on the applicable tables. The concentrations of cadmium and chromium detected in soil samples were

also compared to their respective RSCOs as referenced in the "proposed" 1995 TAGM 4046. For metals without RSCOs or typical background ranges listed in TAGM 4046 (i.e., antimony, silver, and thallium), the residential RBCs referenced in the USEPA Region III RBC table dated October 8, 2004 were used for comparison.

The analytical laboratory test results were reported in NYSDEC ASP Category B deliverables reports. Copies of CAS' summary data packages for these reports are included in Appendix E.

2.2.2 Phase II Studies

Phase II studies were performed after evaluating the findings of the Phase I studies, in order to provide additional environmental information in areas of concern identified during the Phase I studies. The Phase II studies included advancement of additional test borings, advancement and installation of groundwater monitoring wells, and sampling and analysis of various building material for asbestos and/or chemical contaminants. These studies are further described in this section of the report.

Asbestos Sampling

The Phase II asbestos sampling (i.e., facility wide asbestos survey) was conducted between April and June 1999. The asbestos survey was conducted to determine the location and quantity of ACMs present in the facility buildings. Initially, Paradigm observed and documented the materials used in building construction, including: floors, walls, ceilings, surfacing materials, thermal insulation systems, roofing materials, etc. in order to determine the appropriate sampling necessary.

Two hundred and twelve (212) SACM samples were subsequently collected during the Paradigm asbestos survey by NYSDOL-certified Asbestos Building Inspectors. The samples were generally collected in accordance with procedures and guidelines commonly used and accepted in New York State. The SACM samples were initially analyzed for asbestos using PLM NIOSH Method 9002. Based on the PLM test results, 65 of the SACM samples were identified as NOB materials and therefore the results were considered inconclusive (i.e., PLM analysis is not consistently reliable in detecting asbestos in NOB materials). NOB materials are typically roofing materials, floor tiles, mastics, vinyl, etc. As such, 44 of the 65 samples identified as NOB materials were analyzed for asbestos using TEM analysis using NYSDOH ELAP Method 198.1 and 198.4. The other 21 NOB samples were identified as Presumed-ACMs (PACMs) since these samples represented small volumes of material and sampling did not appear cost effective.

Building and Equipment Decontamination Survey

The Phase II B/E Survey was conducted between August and September 1999 in general accordance with the SAP. BRG collected wipe and bulk samples of building, equipment, and material surfaces to characterize areas of contamination inside the buildings at the Site. As part of this work, BRG recorded the amount of materials (building materials, process materials, and waste materials) and inventoried light ballasts to estimate the amount of PCBs within the

buildings at the Site. [Note: Light ballasts are assumed to contain PCBs.] The location of these samples was derived from the Phase I Information Review and Site reconnaissance.

BRG collected 110 wipe samples from a variety of surfaces at the facility to evaluate residual chemical contaminants on building and facility materials, including: floor, equipment, and instrumentation surfaces. Wipe samples were collected in general conformance with the NIOSH Method 9100, Lead in Surface Wipe Samples. In general for this project, wipe samples were collected by using 4-inch diameter Whatman© filter paper (i.e., sample media) and firmly wiping the area inside a 100 cm^2 template up to four (4) times in both the horizontal and vertical directions until the media was 'adequately' loaded. Subsequent to sampling, the sample media was placed inside a new plastic bag, sealed, labeled, and submitted to the laboratory.

BRG collected 32 bulk samples from building materials; liquids present in process piping, machinery, or equipment; stained concrete, floor tiles, or wall material; bulk chemicals/products remaining in the buildings; etc. Sampling tools appropriate for the matrix of the material to be sampled were used to collect the bulk samples. Subsequent to collection, the bulk samples were placed inside a sample container (e.g., glass jar, plastic baggie, etc.) and the container was sealed, labeled, and shipped to the analytical laboratory for analysis.

Field logs describing the sample location, date, and sampling methods for the wipe and bulk samples are included in Appendix C. The wipe and bulk samples were submitted to CAS. The wipe samples were analyzed for RCRA Metals plus silver using USEPA SW-846 Method 6010B. The sampling that was completed on the bulk samples is summarized in a sample key included in Appendix C.

Augered Test Borings

On January 4, 2000 and January 11, 2000, a total of five test borings (designated GS-45, GS-46, GS-47, GS-49 and GS-50) were advanced at the Site as part of the second phase of the subsurface investigation. Additional soil samples were collected from these areas to further quantify potential environmental contamination at the Photech Site. The additional soil samples were collected in accordance with the procedures outlined in Section 4.5.1 of the approved Project Work Plan and Section 2.4.3 of the Field Sampling and Analysis Plan (Appendix B of the Project Work Plan). A rotary drill-rig equipped with 4-1/4-inch inner diameter hollow stem augers was used to advance each test boring. Two-foot split-spoon samplers were collected in front of the augers as they were advanced in order to obtain continuous soil samples from each boring. The Phase II test borings were advanced to depths between 10.5 feet and 16.1 feet below the existing ground surface.

The locations of these test borings are shown on Figure 5 included in Appendix A. As shown, samples were collected from the following areas:

- Loading dock area south of Building #13 (GS-45)
- East perimeter of former retention pond (GS-46)
- East perimeter of former 10,000-gallon fuel oil AST area (GS-47)
- West perimeter of Building #11 (GS-49)
- North of Building #5 adjacent to former film incinerator (GS-50)

The recovered soil samples were visually examined for evidence of suspect contamination (e.g., staining, unusual odors) and to document the type of fill, soil, etc. present at each location. Portions of the recovered soil samples were placed in containers for possible laboratory analysis. A BRG representative recorded pertinent information for each test boring on Sample Collection Logs and Visual Classification of Soils Logs, available copies of which are included in Appendix C. [Note: BRG did not record PID readings on these logs.]

Soil samples were selected for analytical laboratory testing based upon sample observations, and relative location on the Site for delineation purposes. The samples selected for analysis, and the specific analyses performed on each sample, are listed on "Phase II Boring Soil Sample Results" tables included in Appendix D. The samples were delivered under chain-of-custody control to CAS for analytical laboratory testing. RSCOs and typical background ranges (metals only), as referenced in the NYSDEC TAGM 4046 are included on the applicable tables. The concentrations of cadmium and chromium detected in soil samples were also compared to their respective RSCOs as referenced in the "proposed" 1995 TAGM 4046. For metals without RSCOs or typical background ranges listed in TAGM 4046 (i.e., antimony, silver, and thallium), the residential RBCs referenced in the USEPA Region III RBC table dated October 8, 2004 were used for comparison.

The analytical laboratory test results for subsurface soil samples collected from Phase II borings were reported in NYSDEC ASP Category B deliverables reports. Copies of CAS' summary data packages for these reports are included in Appendix E.

Phase II Groundwater Investigation

The groundwater investigation at the Photech site involved the installation of groundwater monitoring wells, groundwater sampling and analytical laboratory testing, and hydrogeological and aquifer testing. Activities associated with each portion of the investigation are described below.

During Phase II of the subsurface investigation, a total of ten (10) groundwater monitoring wells (designated as PHO-W-01 through PHO-W-10) were installed between January 4, 2000 and January 11, 2000 using a rotary drill-rig in accordance with Section 2.4.3 of the Sampling and Analysis Plan in the approved Work Plan. The locations of these wells are depicted on Figure 5 included in Appendix A. As shown, groundwater monitoring wells were installed at the following areas:

- Well PHO-W-01 South of Building #1 near the wastewater silver recovery system.
- Well PHO-W-02 Southwest of Building #1 along the Site perimeter near the main gate.
- Well PHO-W-03 West side of facility perimeter.
- Well PHO-W-04 Paved area between Buildings #14 and #15, north of Building #13.
- Well PHO-W-05 North of Building #12 east of the former waste methanol tank area.
- Well PHO-W-06 East of Buildings #11 and #16 shared corner, near storage shed.
- Well PHO-W-07 Northeast corner of former retention pond.
- Well PHO-W-08 Near old film incinerator and transformer location.
- Well PHO-W-09 East of Building #4 near concrete drywell location.
- Well PHO-W-10 Northeast corner of facility perimeter near drainage berm.

Borings at well locations were advanced using 4-1/4-inch inner diameter hollow stem augers, and auger refusal was encountered at depths ranging between approximately 8.0 feet (i.e., at wells PHO-W-05, PHO-W-07 and PHO-W-10) and 18.0 feet (i.e., at well PHO-W-06) below the ground surface. Samples were collected in accordance with the procedures outlined in Section 4.5.2 of the approved Project Work Plan and Section 2.4.3 of the Field Sampling and Analysis Plan (Appendix B of the Project Work Plan). Once auger refusal was encountered, coring equipment was used to advance each boring through approximately four to five feet of bedrock.

Soil samples were selected for analytical laboratory testing based upon sample observations, and relative location on the Site for delineation purposes. The samples selected for analysis, and the specific analyses performed on each sample, are listed on "Phase II Well Installation Borings Soil Sample Results" tables included in Appendix D. The samples were delivered under chain-of-custody control to CAS for analytical laboratory testing. RSCOs and typical background ranges (metals only), as referenced in the NYSDEC TAGM 4046 are included on the applicable tables. The concentrations of cadmium and chromium detected in soil samples were also compared to their respective RSCOs as referenced in the "proposed" 1995 TAGM 4046. For metals without RSCOs or typical background ranges listed in TAGM 4046 (i.e., antimony, silver, and thallium), the residential RBCs referenced in the USEPA Region III RBC table dated October 8, 2004 were used for comparison.

A two-inch Schedule 40 polyvinyl chloride (PVC) well was then installed at each boring. Five-foot long PVC No. 10-slot screens were installed to intercept the overburden/bedrock interface at each location. The top of each well screen was attached to threaded two-inch inner diameter Schedule 40 PVC solid riser piping that extended to the ground surface. The well installations included a washed and graded sand pack surrounding the screen and extending between approximately 1.5 and 3.0 feet below it, and about 2.0 to 8.0 feet above it. A minimum two-foot bentonite seal was placed above the sand pack in each well, and the remaining annulus was filled with cement/bentonite grout. As an exception, at wells PHO-W-08 and PHO-W-09, sand was used to fill a portion of the annulus space above the bentonite seal before cement/bentonite grout was installed. A flush-mount roadbox with locking cap was placed over each well and cemented in place. Copies of well construction logs are included in Appendix C. A licensed New York State surveyor surveyed the top of the riser pipe for each monitoring well and referenced each monitoring well location to existing benchmarks.
Between January 7, 2000 and January 12, 2000, the ten monitoring wells were developed in accordance with Section 2.4.3 of the Sampling and Analysis Plan that is included in the Approved Work Plan.

Between February 2, 2000 and February 10, 2000, a groundwater quality monitoring program was implemented. Groundwater samples were collected from wells PHO-W-01 through PHO-W-10 (i.e., ten wells) in accordance with the protocol outlined in Section 2.5 of the Sampling and Analysis Plan that is included in the approved Project Work Plan. Sample Collection Logs are included in Appendix C. The specific analyses performed on each sample are listed on "Phase II Monitoring Well Groundwater Sample Results" tables included in Appendix D. The samples were delivered under chain-of-custody control to CAS for analytical laboratory testing. Groundwater standards and guidance values as referenced in the NYSDEC TOGS 1.1.1 are included on the applicable tables.

The analytical laboratory test results for groundwater samples collected from Phase II groundwater monitoring wells were reported in NYSDEC ASP Category B deliverables reports. Copies of CAS' summary data packages for these reports are included in Appendix E.

Between February 11, 2000 and February 17, 2000, hydraulic conductivity testing (i.e., rising head tests) and associated measurements of temperature, pH, conductivity, and dissolved oxygen were conducted at the ten wells. This testing was conducted in accordance with the protocols outlined in Section 2.5 of the Field Sampling and Analysis Plan that is included in the approved Work Plan. Pertinent information and data are summarized on Hydrogeological Testing Data Sheets included in Appendix C.

The hydraulic conductivity testing included the placement of a "Slug" into each well and its subsequent removal coupled with monitoring of the resulting rise in water level data over time. The information collected was used to calculate hydraulic conductivities for each test using the SuperSlug computer model.

The effective radius (Re) of the wells was calculated using the following calculation:

$$Re = [r^2(1-n) + nR^2]^{1/2}, \text{ where}$$

R = radius of borehole
r = radius of screen
n = porosity of sand pack = 0.35

The hydraulic conductivities were calculated using the "Bouwer and Rice" method for unconfined aquifers. The input and output data, other mathematical formulas used, and hydraulic conductivity logarithmic graphs for the slug tests performed on these wells are included in Appendix C. [Note: Six tests (designated Well01#1 through Well01#6) were conducted at Well-01. Test Well01#6 data is considered representative of Well-06 hydraulic conductivity. Two tests (designated Well04#1 and Well04#2) were conducted at Well-04. Test Well04#2 data is considered representative of Well-04 hydraulic conductivity.] The results of the hydraulic conductivity testing are provided in Section 3.5.

Groundwater monitoring well elevation data and static water level data collected in February 2000 were used to calculate groundwater elevations for each well. The groundwater elevation from each well were then used to develop a groundwater potentiometric map for February 2000, and a copy is included as Figure 7 in Appendix A. The potentiometric map is used to evaluate groundwater flow conditions at the Site.

2.2.3 Interim Remedial Measures

As proposed in the approved Project Work Plan, several IRMs were conducted in conjunction with the completion of the SI/RA project. The objective of the IRMs were to mitigate any potential human health and environmental risks related to documented environmental concerns previously identified at the site, including:

- Four aboveground storage tanks (ASTs):
  - A 10,000-gallon steel fuel oil AST
  - A 10,000-gallon steel virgin methanol AST
  - A 2,500-gallon steel virgin methanol AST
  - A 2,500-gallon steel waste methanol AST

- Two suspected underground structures:
  - A 500-gallon steel waste chemical tank
  - A concrete vault structure of unknown size

- Containment drum: A small drum container, partially buried, used to collect runoff and drainage from the chemical storage shed structure.

Between November 9 and November 12, 1999, BRG and the selected subcontractor, MARCOR Remediation, Inc. (MARCOR), completed the IRM tasks. Locations of samples collected and analyzed as part of the IRM are depicted on Figure 8 included in Appendix A

Tank Closure and Removal

The four ASTs subject to closure and removal under this IRM are regulated under the New York State Hazardous Bulk Storage regulations specified at Title 6 NYCRR Part 596. The City, as owner of the Site, completed the proper notification and tank closure documentation for this task and submitted it to the NYSDEC prior to the start of this task.

The four ASTs had been emptied by the USEPA and NYSDEC during the site bulk chemical removal action in 1994 (see Section 1.4), but records were not available to determine if the tanks had been properly cleaned and closed from service. The objective of this IRM was to properly clean and rinse the four tanks and remove them from the Photech property for salvage.

Pre-IRM Activities

In preparation for tank removal, eight pre-removal soil and water samples (designated as PHO-DS-01 through PHO-DS-08) were collected to characterize anticipated waste streams that would be generated and handled during the IRM process. The specific areas where samples were collected and the analyses performed on each sample, are listed on "Tank Closure and Removal Tank Contents Sample Results" tables included in Appendix D. [Note: Actual analytical laboratory data reports prepared by CAS were not provided by BRG when the project was transferred to DAY]. Appropriate permits from the City, including Rochester Fire Department (RFD) tank removal notification, and a construction permit from the City Building Department, were secured. Chain-link fence surrounding the tank containment area and the chemical storage shed were removed by New York State Fence Co. in order to allow access for heavy equipment.

IRM Implementation

At the initiation of closure activities, the subcontractor pumped the standing water from the secondary containment systems of the tank area. Since the analytical laboratory test results for tank containment system water samples PHO-DS-04, PHO-DS-05, PHO-DS-07 and PHO-DS-08

indicated they did not contain constituents that were tested for, the wastewater generated through pumping off water from secondary containment areas during the IRM activity was discharged directly to the ground surface with the approval of the City. A total of 2,695 gallons of water and 29,925 gallons of water were removed from the 2,500-gallon waste methanol tank secondary containment system and virgin methanol tank farm secondary containment system, respectively. No standing water was observed in the 10,000-gallon fuel oil tank secondary containment system. Tank covers were removed and the tanks were monitored with a PID meter and oxygen/lower explosive limit (O_2/LEL) meter. The PID and O_2/LEL meter monitoring results were non-detect above background over a vertical gradient inside the tanks for volatile compounds; lower explosive limit readings were non-detect or zero percent above background; and, measured oxygen concentrations ranged from 20-21 percent.

Once open, the two virgin methanol tanks were observed to be empty and dry. The 2,500-gallon waste methanol tank and fuel oil tank contained a small volume of liquid bottoms (each less than 350 gallons). The contents of these tanks were removed and the waste streams generated for this activity were containerized. A total of five drums were filled with waste and rinse water generated during the cleaning of the waste methanol tank, and three drums were filled with waste and rinse water generated during the cleaning of the fuel oil tank. The drummed waste methanol tank contents and the drummed fuel oil tank contents were sampled for waste disposal characterization (designated as samples PHO-TK-05 and PHO-TK-06, respectively). The specific analyses performed on each sample are listed on "Tank Closure and Removal Post-Removal Confirmation and Disposal Samples Results" tables included in Appendix D. The analytical laboratory test results for these samples were reported in a NYSDEC ASP Category B deliverables report. A copy of CAS' summary data package for this report is included in Appendix E.

The subcontractor removed the secondary containment units, drained the tanks and associated piping, and cleaned and rendered the tanks free of hazardous vapors. The connecting lines/piping, if present, were disconnected and plugged in close proximity to each tank. Each tank was properly vented and inerted with dry ice and then transported off-site. Each tank containment unit and associated piping, tank saddles, and other construction debris were also transported off-site for disposal or salvage. After the soil under and around the tank and secondary containment system was visually observed, it was screened with a PID. There were no observations of impairment and PID readings did not indicate a release; thus, the soil was approved for use as backfill in the immediate area.

Post-IRM Activities

Confirmation and characterization samples were collected from the tank removal and excavation areas. Samples were collected for characterization and/or soil confirmation samples following the procedures outlined in the approved Project Work Plan, Appendix B, Field Sampling Plan. A confirmation soil sample was collected and analyzed (designated as sample PHO-TK-03). The specific analyses performed on this sample are listed on "Tank Closure and Removal Post-Removal Confirmation and Disposal Samples Results" tables included in Appendix D. The analytical laboratory test results for this sample were reported in a NYSDEC ASP Category B deliverables report. A copy of CAS' summary data package for this report is included in Appendix E.

At the completion of excavation and tank removal activities, the excavation area and/or tank removal area was backfilled with original soil fill and rough-graded with the excavation equipment.

Underground Structures

As part of the IRM task, MARCOR also completed the excavation of three (3) test pits at the Photech property. The test pit excavations were conducted to investigate and verify historical information regarding the presence of a 500-gallon UST, a liquid storage concrete vault and the source of an unknown underground pipe:

- The 500-gallon steel tank was suspected to be located between the tank farm and north side of Building 12 at a depth of 5-10 feet. The presence and suspected location of the tank was identified on facility drawings and from interviews with past employees at Photech. A recent field survey with a magnetic locator indicated the presence of a metallic object at the suspected location of the tank.

- Also initially identified from facility drawings, the underground concrete vault was suspected to be located directly to the east of Building 3. Subsurface work in the immediate area discovered concrete-like material at a depth of 6 feet.

- The unexpected field observation of the unknown iron pipe, located adjacent to the west side of Building 5 and running to the former retention pond area, led to the final test pit being completed.

The test pits were excavated for the purpose of locating suspected underground structures determining the origin of underground piping at the site and evaluating subsurface conditions for field evidence of petroleum chemical impact. A total of three (3) test pits were excavated during the underground storage tank closure activities (November 10-11, 1999). A summary of test pit information is provided in following table:

Summary of Test Pit Excavations

Test Pit	Location	Findings
1	Suspected 500-gallon waste chemical tank along the west perimeter adjacent to the Chemical Storage Shed.	1. Appeared to encounter concrete tank saddle and associated steel straps with no tank (i.e.. tank previously removed). 2. 6-inch PVC pipe at 2 to 2.5-foot depth. Dark liquid discharged from pipe (< 5 gallons) into bottom of excavation. 3. No discolored soil, no odors, and PID readings below background.
2	Trace lines located at northwest corner of Building 5 at concrete cleanout.	1. Located 4-inch diameter pipe at 5' depth traced toward Building 2 to south. 2. Noted slight sewage odor that dissipated quickly. 3. No discolored soil, no odors, and PID readings below background.
3	East of B-3 at location of suspected concrete chemical storage vault	1. Located two 4" diameter pipes extending to concrete dry well. 2. Drywell in NE corner has pipes running toward B-3, -4, -5. 3. No origin of these pipes was found. 4. No discolored soil, no odors, and PID readings below background.

At test pit #3, a sample of apparent drywell contents (designated as sample PHO-TK-01) and a sample of soil underlying the apparent drywell (designated as sample PHO-TK-02) were collected and analyzed. The specific analyses performed on each sample are listed on "Tank Closure and Removal Post-Removal Confirmation and Disposal Samples Results" tables included in Appendix D. The analytical laboratory test results for these samples were reported in a NYSDEC ASP Category B deliverables report. A copy of CAS' summary data package for this report is included in Appendix E.

Chemical Storage Shed Drum

BRG and the subcontractor also completed the removal of the small containment drum located at the rear of the chemical storage shed. The contents of the drum were removed prior to the physical removal of the drum container and a confirmation clean sample was collected at the point of removal (designated as sample PHO-TK-04). The specific analyses performed on this sample are listed on "Tank Closure and Removal Post-Removal Confirmation and Disposal Samples Results" tables included in Appendix D. The analytical laboratory test results for this sample were reported in a NYSDEC ASP Category B deliverables report. A copy of CAS' summary data package for this report is included in Appendix E.

2.2.4 Project Data Quality Control

The Photech SI/RA project's objective was to document past historical site activities and current environmental conditions at the Site. The activities performed as part of the SI/RA project including chemical analyses and sampling were used to define and characterize the nature and extent of contamination at the Site. Additionally, the analytical data was used to examine remedial action alternatives to abate, mitigate, or eliminate any threat to public health and/or the environment.

In accordance with NYSDEC ASP Category B, the analytical data obtained through the SI/RA project was evaluated to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use. This section of the report provides a summary of the data review, findings and corrective actions and recommendations.

Data Quality Evaluation

A Data Quality Evaluation was conducted to ensure the data collected during the SI/RA project was useable and complete. The data quality evaluation was performed in accordance with the work plan and included in the following tasks.

1. Data use objectives were reviewed to determine if they were sufficient to meet the scope and purpose of the project.

2. Sampling and analytical activities were reviewed and compared to data quality objectives.

3. A data quality review of the analytical package was performed to determine if:

   - Data packages were complete as defined in NYSDEC ASP and U.S. EPA Contract Laboratory Protocol (CLP);
   - Holding times were met;
   - QC data falls within the protocol required limits and specifications;
   - Data was generated upon established and agreed upon analytical protocols; and
   - Raw data confirm the results provided in the data summary sheets and quality control verification forms.

The evaluation of each of these criteria has been presented in the Findings Section of this report. A summary of the data reviewed is presented in the table below.

Reported Data for SI/RA Project

Sample Type/Description	No. of Samples	Sample Identification
Subsurface Geoprobe Soil Boring Samples	35	PHO-GS-01 through PHO-GS-44
Surface Soil Samples	18	PHO-SS-08 through PHO-SS-03
Wipe Samples Collected for SACM	26	PHO-AW-01 through PHO-AW-026
Air Samples Collected for SACM	17	PHO-AA-E1 through PHO-AA-E15 PHO-AA-B1 and B2
Bulk Samples Collected for SACM	216	216 Bulk Samples
Bulk Samples Collected for TEM	44	44 Total TEM Samples
Augered Soil Boring Samples	15	PHO-WS-01 through PHO-WS-10; PHO-GS-45 through PHO-GS-50
Wipe Samples Collected from Building Residuals	110	PHO-IWS-01 through PHO-IWS-110
Bulk Samples Collected from Building Residuals	32	PHO-IBS-01 through PHO-IBS-32
Disposal Characteristic Samples for Tank Removal	8	PHO-DS-01 through PHO-DS-08
Post Removal Confirmation And Disposal Samples	6	PHO-TK-01 through PHO-TK-06
Groundwater Well Samples	10	PHO-WW-01 through PHO-WW-10

Findings

The findings presented herein are organized into three sections to meet the criteria specified in the approved Project Work Plan.

Data Use Objectives

Specifically, the SI/RA project's objectives were established in the work plan as follows:

a. To determine the presence and extent of chemical contamination in the subsurface;
b. To determine the presence, extent, and type of asbestos containing material at the Site and evaluate health and safety conditions at the Site;
c. To determine the presence, extent, and type of chemical residuals within the buildings;
d. To collect quality analytical, geologic, and hydrogeologic data for remedial analysis; and
e. To collect useful data to evaluate possible impacts to potential receptors and future use of the site.

Observations of the data use evaluation are presented below.

Data Use Objectives

Project Activity	Observation
Subsurface soil samples	1) Locations selected to provide coverage of the entire facility; 2) Sample depths correspond to overburden bedrock interface (e.g., saturated zone); 3) Sample locations were pre-selected to target suspected contamination based on historical information and prior use. 4) Phase II samples located to fill gaps and to further define areas of concern identified in Phase I samples.
Surface soil samples	Providing shallow data and targeting areas suspected of containing surface contamination.
Suspect asbestos containing material	2) Air samples collected provide data for evaluation of health and safety inside the buildings. 3) Wipe samples collected provide data for the presence, extent and type of suspended asbestos containing material at the site. 4) Bulk samples provide data for the presence, extent and type of asbestos containing material throughout the buildings, which will have to be abated. 5) Samples analyzed via TEM analysis confirm or verify by regulation the presence or absence of asbestos in non-organically bound building materials.
Building and equipment decontamination survey	1) Wipe samples collected throughout the facility provide data to determine presence and extent of chemical residuals in buildings. 2) Bulk samples collected provide quantifying chemicals still present at the facility.
Soil samples collected from well installation	Provide additional information on soil characteristics and possible contamination for remedial analysis.
Well water samples	Provide data to determine the presence, extent, and type of contamination present in groundwater, which aids in the remedial analysis.
Soil and aqueous data collected prior to interim remedial measures	1) Provided information on tank contents, soil berm containment, and liquid in containment for handling and disposal.

Project Activity	Observation
	2) Confirmation sampling was completed for cleanup of tank and drum areas. 3) Provided data for test pits at former UST locations and dry well vault locations.
Field data, screening and documentation, inspections and hydrogeologic testing	Provided data for all sampling activities.

Data Quality Objectives

The following observations were made as a result of the data quality objective evaluation.

a. **Surface and Subsurface Soil Samples:** Phase I and Phase II surface and subsurface soil samples analyzed via NYS ASP/ EPA CLP using accepted sample collection protocols.

b. **SACM Samples:** Collected and analyzed via NYSDOH ELAP methods as specified in Title 12 NYCRR Part 56, Subparagraph 17.4(d). NYSDOL certified ACM building inspectors completed wipe and bulk sample collection via procedures accepted in New York State. Bulk ACM samples analyzed via NYSDOH ELAP Method 198.1 - PLM and ELAP Method 198.4 – TEM.

c. **Air SACM Samples:** SACM sampling completed by NYSDOL certified air technicians following specifications stated in Title 12 NYCRR Part 56. Air Samples collected via NIOSH 7400.

d. **Building and Equipment Decontamination Survey Wipe Samples:** Collected utilizing NIOSH Method 9100 procedures and analyzed via USEPA SW-846 Method 6010B.

e. **Building and Equipment Decontamination Survey Bulk Samples:** Both aqueous and non-aqueous samples collected and analyzed via SW-846 methodologies.

f. **Disposal Characteristic Samples for Tank Removal:** Samples were collected and analyzed using NYS ASP and EPA CLP methods, including TCLP protocols.

g. **Post Removal Confirmation And Disposal:** Samples were collected and analyzed using NYS ASP and EPA CLP methods, including TCLP protocols.

h. **Well Groundwater:** Samples were collected and analyzed using NYS ASP and EPA CLP methods. Groundwater samples were analyzed for VOCs using NYSDEC ASP 95-1. Consequently, detection limits for 20 compounds were above the New York State Action levels for water quality. However, NYSDEC ASP 95-4 for VOCs and SVOCs would have provided detection limits of 1 part per billion (ppb) (below all action levels except benzene and six SVOCs). As a result, concentrations were estimated to 1 ppb during NYSDEC ASP 95-1 and 95-2 analysis.

Data Quality Review

Data quality review was conducted in accordance with the Data Usability Summary Report (DUSR) Guidance Document from the NYSDEC Division of Remediation. The data packages reviewed contained complete deliverables for validation. A full validation was not performed; however, a review of the case narrative and a random review of raw data was performed. The case narratives were reviewed to meet the validation qualifiers per U.S. EPA Region II Standard Operating Procedures and the U.S. EPA National Functional Guidelines for Data Review. Review of the data has been documented on BRG's standard QC Data Forms, which are provided as Appendix G. The following table provides a summary of the results found as a result of the Data Quality Review.

Data Quality Review Table

Data Package	QC Sample	Constituent(s)	Outside QC Limits	Additional Notes
Volatiles				
PHO-IBS-001-026	PHO-IBS-007			Surrogate and internal standards outside QC limits-confirmed reanalysis.
Semi Volatiles				
PHO-GS-001-044 PHO-SS-009A -010A	PHO-GS-033	1,2,4 Trichlorobenzene 1,4-Dichlorobenze N-Nitoso-di-n-propylamine Acenaphthylene	MS and RPD MS and RPD MS RPD	
PHO-GS-006-043	PHO-GS-016	1,2,4 Trichlorobenzene 1,4-Dichlorobenze	MSD and RPD MS and RPD	Surrogate outside QC limits for 1,4-Dichlorobenzen-d4.
PHO-IBS-011-029	PHO-IBS-027	1,2,4 Trichlorobenzene 1,4-Dichlorobenze Pentachlorophenol	MS and MSD MSD MS and MSD	Surrogate outside QC limits for 2-fluorbiphenyl
PHO-IBS-030-032	PHO-IBS-030	Pentachlorophenol	MS	
PHO-SS-008-030	PHO-SS-028	1,2,4 Trichlorobenzene	RPD	Both dilutions outside calibration.
PHO-TK-001-004	PHO-TK-002	1,4-Dichlorobenze	RPD	
PHO-IBS-001-026	PHO-IBS-007	Pentachlorophenol	MS and MSD	Internal Standards outside QC limits-confirmed reanalysis. Surrogate outside QC limits for tribromophenol.
Alcohols				
PHO-GS-001-044 PHO-SS-09A -10A	PHO-GS-033	1-Propanol		Found in blank and flagged "NJB".
PCBs				
PHO-IBS-011-029	PHO-IBS-027	PCBs	MS and MSD	

Data Package	QC Sample	Constituent(s)	Outside QC Limits	Additional Notes
Metals				
PHO-GS-01-44	PHO-GS-10B	Antimony	MS and RPD	Test results flagged "N"
PHO-SS-09A -10A				Ca Fe and Mg spiked less than 25% sample concentration; thus, recovery could not be calculated.
PHO-GS-06-43	PHO-GS-016	Antimony and Silver	MS and RPD	Test results flagged "N"
				Al, Ca, Mg, and Fe spiked less than 25% sample concentration; thus, recovery could not be calculated.
PHO-GS-045-050	PHO-WS-007	Antimony and Manganese	MS and RPD	Test results flagged "N"
PHO-WS-01-10				Zn % difference outside QC limits of the serial dilution test results flagged "E".
PHO-IBS-001-026	PHO-IBS-001	Selenium	MS	
		Silver and Cadmium	RPD	Ag spiked too low to calculate recovery.
PHO-IBS-011-029	PHO-IBS-023	Chromium	MS	flagged "N"
				Cd, Pb, Se, Ag spiked too low to calculate recoveries. Test results flagged "*"
PHO-SS-08-030	PHO-SS-10B	Antimony and Selenium	MS and RPD	Test results flagged "N"
				Ca and Mg spiked less than 25% sample concentration; thus, recovery could not be calculated
PHO-WW-1-10	PHO-WW-10	Antimony, Cadmium, Potassium, Selenium, Thallium, and Zinc	MS and RPD	Test results flagged "N"
PHO-IWS-016-074		Silver	LCSS	On Blank recoveries. Re-digestion could not be performed as only one wipe per sample was submitted
PHO-IWS-032-053		Silver	LCSS	On Blank recoveries. Re-digestion could not be performed as only one wipe per sample was submitted
PHO-IWS-055-086		Silver	LCSS	On Blank recoveries. Re-digestion could not be performed as only one wipe per sample was submitted
PHO-IWS-087-110		Silver	LCSS	On Blank recoveries. Re-digestion could not be performed as only one wipe per sample was submitted

Conclusions

The data use evaluation for the Photech SI/RA Project indicates the following:

- The evaluation of data quality objectives found most of the analyses to meet objectives established for the Photech Imaging Systems SI/RA project. However, groundwater samples were analyzed for VOCs using NYSDEC ASP 95-1. Consequently, detection limits for 20 compounds were above the New York State Action levels for water quality. However, NYSDEC ASP 95-4 for VOCs would have provided detection limits of 1 ppb (below all action levels except benzene and six SVOCs). As a result, concentrations were estimated to 1 ppb during NYSDEC ASP 95-1 and 95-2 analysis. Consequently, analytical results less than 10 ppb and greater than 1 ppb are inaccurate to an unknown degree.

- Based on observations in the data quality review, most sample results are usable as they are reported with minor qualifications resulting from typical processing and/or matrix effects. Significant quality concerns include the occurrences of matrix spike and relative percent difference (RPD) outside laboratory quality control limits for documented metals and volatiles. As noted in the Data Quality Review Table, the metals of concern with respect to data quality primarily include silver and antimony, and the VOCs of concern include 1,2,4-Trichlorobenzene and 1,4-Dichlorobenzene. Values for a majority of the samples outside laboratory quality control limits were provided, but may be biased low to an unknown degree.

Evaluation of the qualified data to soil and groundwater SCGs is presented in Section 4.0 of this report. To the extent deemed possible, the potential that some data sets may be biased low is taken into consideration in the development of remedial alternatives discussed in Sections 7.0 and 8.0 of this report.

3.0 PHYSICAL CHARACTERISTICS OF SITE

This section of the report provides information on physical characteristics of the Site, including subsurface media.

3.1 Surface Features

The Photech site is a 12.5-acre parcel that includes various buildings, sewer, and utility improvements. There are 15 buildings located in the central portion of the site comprising approximately 108,000 square feet. The south and western portion of the Site is covered with asphalt parking areas. The northwestern corner of the Site is wooded with deciduous trees characteristic of the Erie-Ontario Plain physiographic province. The wooded area supports trees and shrubs characteristic of wetland areas as there is seasonable standing water. The remainder of the Site consists of grass or gravel roads surrounding the buildings.

The topography of the subject site is gently sloping from the northeast to the southwest. Topography varies between approximate elevations of 500 to 520 feet above mean sea level. Surface drainage on the Site is controlled by local relief, as well as by the various buildings, roadways, parking areas and an associated stormwater drainage system. Generally, the southern and western portion of the property slopes southward in the direction of Driving Park Avenue. To the north and east side of the on-site buildings, the topography generally slopes to the northeast. Stormwater is collected in a retention pond on the northeast end of the facility that discharges to a drainage swale, which parallels the eastern property boundary.

Water service enters the Site from Driving Park Avenue. In addition to potable water, the Photech facility had water service for a fire protection system that is routed underground through the center of the Site and along the west side of the buildings. The sanitary sewer and process discharge was directed to the public sewer system. These discharges exit the property through an underground manhole located just east of the main entrance gate.

3.2 Surface Water Hydrology

There are limited surface water bodies located on the Site. The northeastern corner of the Site is part of a federally-designated wetlands area (PF01A). The former retention pond area, an approximately 75 foot by 75 foot bermed area located in the northeast quadrant of the Site, is a structure that remains on the Site, but is not currently functional as a surface water body. A five-foot wide drainage swale runs along the eastern perimeter of the Photech facility outside of the property boundary and joins up with the existing drainage/wetland area in the northeastern corner of the Site. In the drainage swale and the wetlands area on the Site, some volume of standing water is common. The drainage/wetland area generally flows to the north-northeast onto the adjoining Holleder Industrial Park properties. Surface water hydrology at the Site is influenced primarily by the drainage area in the northeast corner and existing stormwater and sanitary sewer systems.

3.3 Geology

The overburden material and geology underlying the Site consists of variably textured lacustrine, glaciolacustrine, and till deposits that overlie Rochester Shale bedrock. The depth to bedrock ranges from 8 to 20 feet below ground surface. The following descriptions characterize the overburden and geology increasing in depth.

Fill or urban soils are present across most of the Site. They consist of silt, sand, gravel, and/or asphalt. Grain size analysis performed as part of this project indicated that the predominant soil size in three samples collected from the Site is silt (35.3% to 54.5%) with lesser amounts of sand (16.1% to 27.5%), clay (15.5% to 27.9%) and gravel (1.5% to 23.6%).

Swamp deposits exist in the undisturbed area at the northeast corner of site. These deposits are soft, dark brown/gray clay silt with organic matter.

Lacustrine sediments are light gray to brown silty clay to loose to medium dense silty sand and fragmented gravel. Based on a review of the New York State Geological Survey, "Surficial Geologic Map of New York - Fingerlakes Sheet", 1986, surficial soils in the area predominantly consist of pro-glacial lacustrine deposits (i.e., deposits of laminated clay and silt associated with post-glacial lakes or lakes formed as a result of receding glaciers).

Glacio-Lacustrine is similar to lacustrine, except often red-brown, often underlying glacial till.

Glacial Till is a medium brown to red-brown silty sand, with trace to little gravel, and trace clay.

Completely weathered bedrock consists of medium dense to very dense gray-brown silt, little to some fine sand, with the visible pattern of the structural fabric of the parent bedrock material that has been completely altered to soil.

Rochester shale is a light to dark gray, fine-grained, fossiliferous, dolomitic mudstone with interbeds of limestone and dolomite. The Rochester formation is about 95 to 100 feet thick and dips gently to the south at 40 to 60 feet per mile. The Rochester is traditionally called shale, but it is not fissile and is harder and thicker bedded than shale. According to a map entitled "New York State Geological Highway Map", W.B Rogers et. al., 1990, the Rochester Shale Formation is in the Clinton Group, Late Silurian Period, Paleozoic Era. Figure 9 included in Appendix A depicts bedrock elevations based on subsurface studies completed as part of this site investigation.

Two geologic cross-sections (A-A' and B-B') developed for the Site are included in Appendix A and are designated as Figure 10 and Figure 11, respectively. Cross-section A-A' trends north to south and cross-section B-B' trends east to west. These cross-sections illustrate the lithology identified in test borings and wells that were advanced as part of these studies and previous studies. [Note: Due to data availability limitations, cross-sections assume data points used have the same surface elevation]. Of interest, bedrock was encountered at its

greatest depth in Cross-section A-A' at groundwater monitoring well location Well-06, which is located adjacent to a tunnel area that connects basement levels of nearby buildings.

3.4 Surface Soils

The soils at the Photech facility are classified as Urban Land by the Monroe County, New York Soil Survey (Map Number 39, circa 1971). Urban land consists of areas that have been altered or obscured by urban works and structures so that identification of the soils is not feasible. Areas consist of built up parts of the City. The subsurface investigation program completed as part of the SI/RA project revealed 0.5 to 2 feet of reworked native and compacted soils and/or fill material at the surface of most of the property.

Native soils adjacent to the west and across Mount Read Boulevard is primarily Brockport silty clay loam (BrA), which is found in level to nearly level areas (0 to 2 percent slope). Commonly included with the Brockport silty clay loam are areas of better drained Riga soil on slight rises or knolls. Based on site investigation activities, the soils at the Photech property were observed to be similar in nature.

3.5 Hydrogeology

Figure 7 included in Appendix A illustrates groundwater flow conditions at the Site during well sampling in February 2000. As shown, groundwater generally flows radially inward toward Well-06. This groundwater flow direction may be influenced by the underground tunnels and other below-grade structures. Based on the groundwater data for February 2000, the hydraulic gradient across the Site was calculated to be between approximately 0.01 ft/ft and 0.06 ft/ft.

Hydraulic conductivity data is summarized in Appendix C. As shown, "rising head" hydraulic conductivities for the wells tested at the Site ranged between 1.42×10^{-4} cm/sec (Well-02) and 1.05×10^{-2} cm/sec (Well-01). These hydraulic conductivities are consistent with those typically present in glacial deposits and silty soils as referenced in Groundwater, R Allan Freeze & John A. Cherry, 1979.

Using the average hydraulic gradient of 0.03 ft/ft, the average hydraulic conductivity of 2.1675×10^{-3} cm/sec (i.e., 6.14 ft/day), and an estimated range of porosity of 0.10 and 0.25 as referenced from Groundwater and Wells, F.G. Driscoll, 1989 for glacial tills, the velocity of groundwater flow at the Site was calculated to range between 0.74 ft/day and 1.84 ft/day (i.e., 270.1 ft/year to 671.6 ft/year).

3.6 Demography, Land Use, and Water Use

The Site is located on the north side of Driving Park Avenue within an industrial area of the City of Rochester, County of Monroe, New York. According to the 2000 census listed by the U.S. Census Bureau (www.factfinder.census.com), the City of Rochester had a population of 219,773. The 1990 census listed by the U.S. Census Bureau indicates the City of Rochester had a population of 231,636, which reflects an approximate 5.1% decrease in population between 1990 and 2000.

Land use surrounding the Photech facility is zoned for commercial/industrial use. The Holleder Industrial Park is immediately to the north and the General Motors Delphi facility is located to the south and east. Commercial/light industrial properties are located both to the east and west of the Photech Site. Water use for the Photech facility and the surrounding area is supplied by the City.

4.0 NATURE AND EXTENT OF IMPACT

Sources of contamination were initially identified through the development of the Project Work Plan and Phase I Sampling and Analysis Plan. Additionally, the environmental site assessment identified further contaminant sources by performing a thorough site walk, interviewing a past Photech employee, reviewing historical records, and reviewing regulatory databases. These sources were used to conduct Phase I of the SI/RA, which enabled the development of a Phase II Sampling and Analysis Plan for further defining the nature and extent of contamination on-site. The contaminant sources identified and investigated include the following:

1) 12,000-gallon underground silver recovery vault;
2) Pipes from Building #2 silver recovery tanks to 12,000-gallon waste water AST;
3) Hazardous waste storage in the vicinity of the chemical shed foundation east of Building 11;
4) In proximity to discharge locations of scupper drains on the east side of Building #11;
5) Liquid storage vault east of Building #4;
6) Former film incinerator locations west of Building #5 and at the foundation of the Carpenters Shed;
7) In the retention pond where open burning of trash took place;
8) Process discharges into the retention basin prior to redirecting discharges into the sanitary sewer;
9) Drainage swale on northeast portion of the property;
10) Storage of chemicals and hazardous waste at the chemical storage shed (Building #15);
11) Adjacent and exterior to the chemical and storage mixing area and former incinerator room in Building #12;
12) Asbestos containing materials inside the buildings;
13) Chemical residues remaining inside the buildings; and
14) Off-site sources.

Most sources that would further contaminate the surface and subsurface environment have been removed as a result of the manufacturing process being discontinued and the U.S. EPA clean up. However, some sources do remain, including off-site sources. The following sections provide a description of the contamination detected as a result of the site investigation performed at the Site.

4.1 Surface Soil Sample Test Results

Eighteen surface soil samples were tested as part of this project. Samples were tested for one or more of the following parameters: target compound list (TCL) VOCs, TCL SVOCs, TAL metals, alcohols, TPH and PCBs. The detected concentrations of these parameters were compared to available NYSDEC TAGM RSCOs and typical background concentrations or USEPA Region III residential RBCs (i.e., metals only). Copies of the analytical laboratory test reports prepared by CAS for soil samples and executed chain-of-custody documentation are included in Appendix E. The detected concentrations and comparison to corresponding applicable criteria are summarized on tables included in Appendix D. The test results for surface soil samples are summarized as follows:

VOCs

VOC test results indicate that target VOCs were detected in 13 of 18 surface soil samples. Target VOCs detected in one or more soil samples included acetone and trichloroethene. Tentatively identified compounds (TICs), were detected in 9 of 18 surface soil samples. The concentrations of specific VOCs and total VOCs (i.e., sum of target VOCs and TICS) were compared to NYSDEC TAGM 4046 RSCOs. As shown, RSCOs for specific VOCs and/or total VOCs detected in surface soil samples were not exceeded.

SVOCs

SVOC test results indicate that target SVOCs were detected in 16 of 16 surface soil samples. Between two and 20 different target SVOCs were detected in one or more surface soil samples. These SVOCs are generally categorized as PAHs and can be associated with waste oil, creosote (preservative for railroad ties, telephone poles and piers), stripped paint, incinerator ash, incomplete combustion of fossil fuels, and natural sources such as in petroleum and smoke from fires, etc. TICs were detected in 16 of 16 surface soil samples. The concentrations of specific SVOCs and total SVOCs (i.e., sum of target SVOCs and TICS) were compared to NYSDEC TAGM 4046 RSCOs. As shown, the concentrations of one or more of the SVOCs benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(a)pyrene; and dibenz(a,h)anthracene measured in surface soil samples PHO-SS-26A, PHO-SS-26B, PHO-SS-26C, PHO-SS-26D, PHO-SS-26E, PHO-SS-28 and PHO-SS-30 (refer to Figure 6 included in Appendix A) exceeded RSCOs.

- Samples PHO-SS-26A, PHO-SS-26B, PHO-SS-26C, PHO-SS-26D, PHO-SS-26E were collected on the east side of Building #11 in proximity to scupper drain discharge locations associated with Building #11.
- Sample PHO-SS-28 was collected in proximity to a former transformer pad.
- Sample PHO-SS-30 was collected from the cement culvert discharge area north of the former retention pond.

TAL Metals

TAL metals detected in one or more of the 17 surface soil samples tested include: aluminum, arsenic, barium, cadmium, calcium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc. The concentrations of metals were compared to typical background ranges and RSCOs referenced in NYSDEC TAGM 4046. For metals without RSCOs or typical background ranges listed in TAGM 4046 (i.e., antimony, silver, and thallium), the residential RBCs referenced in the USEPA Region III RBC table dated October 8, 2004 were used for comparison. The comparison is summarized as follows:

- The metals cadmium, calcium, magnesium, mercury, selenium, and zinc were detected in one or more samples at concentrations exceeding the upper limit of corresponding typical background ranges.

- The metals cadmium, copper, iron, mercury, selenium, and zinc were detected in one or more samples at concentrations exceeding their respective available RSCOs.

- The metal silver was detected in one sample at a concentration exceeding the residential USEPA Region III RBC.

Surface soil samples with distinctly higher concentrations for metals than other samples tested (i.e., two or more times higher) and exceed applicable criteria included:

- Sample PHO-SS-08 west of chemical storage shed: selenium and zinc [Note: Chemicals containing metals that were formerly kept in the storage shed may be the source of these metals detected in this sample.]

- Samples PHO-SS-26A, 26B, 26C, 26D, and 26E east side of Building #11 in proximity to scupper drain discharge locations associated with Building #11: one or more of cadmium, mercury, selenium and zinc [Note: Chemicals potentially containing metals that were formerly stored or used in this area may be the source of these metals detected in these samples.]

- Sample PHO-SS-29 in proximity to the former transformer pad: zinc and silver

- Sample PHO-SS-30 in proximity to the former retention pond cement culvert discharge area: zinc

These samples and their reported metal concentrations that exceed SCGs are shown on Figure 12.

Many of the detected metals (e.g., aluminum, calcium, magnesium, manganese, potassium, sodium, vanadium, etc.) generally appear attributable to naturally occurring concentrations of metals at the Site since the specific concentrations of these metals exhibited similar concentrations across the Site.

Alcohols

Only the alcohol 2-propanol (a/k/a isopropyl alcohol) was detected in 1 of 15 soil samples [i.e., detected in Sample PHO-SS-10B at a concentration of 610 micrograms per kilogram (µg/Kg)] that were tested. A NYSDEC TAGM 4046 RSCO is not available for 2-propanol.

PCBs

PCBs were not detected above reported analytical laboratory detection limits in the two surface soil samples that were tested.

TPH

TPH was not detected above reported analytical laboratory detection limits in the one surface soil sample that was tested.

Surface Soil Summary

VOCs, alcohols, TPH and PCBs were not detected at concentrations above RSCOs or that would deem further investigation or corrective actions.

TCL SVOCs exceeding RSCOs were detected in 7 of 16 surface soil samples located:

- Along the east side of Building #11 in proximity to scupper drain discharge locations associated with Building #11;
- in proximity to a former transformer pad; and
- from the cement culvert discharge area north of the former retention pond.

Surface soil samples with distinctly higher concentrations for metals than other samples tested (i.e., two or more times higher) and exceed applicable criteria were detected in 7 of 18 surface soil samples located:

- west of the chemical storage shed (selenium and zinc);
- along the east side of Building #11 in proximity to scupper drain discharge locations associated with Building #11 (one or more of cadmium, mercury, nickel, selenium and zinc); and,
- in proximity to the former transformer pad (silver).

4.2 Subsurface Soil Sample Test Results

Subsurface soil samples were collected from Phase I test boring locations, and Phase II test boring and well locations. Samples were tested for one or more of the following parameters: TCL VOCs, TCL SVOCs, TCLP metals, TAL Metals, TPH, and alcohols. The detected concentrations of these parameters were compared to NYSDEC TAGM RSCOs and typical background concentrations (i.e., metals only). Copies of the analytical laboratory test reports prepared by CAS for soil samples and executed chain-of-custody documentation are included in Appendix E. The detected concentrations and comparison to corresponding NYSDEC criteria are summarized on Tables included in Appendix D. The test results for soil samples are summarized as follows:

VOCs

VOC test results indicate that target VOCs were detected in 9 of 42 soil samples (refer to Figure 5 included in Appendix A). Target VOCs detected in one or more soil samples included: acetone; 2-butanone (MEK); 1,1-dichloroethane; 1,2-dichloroethene; 1,1,1-trichloroethane; cis-1,2-dichloropropene; trichloroethene; tetrachloroethene; methylene chloride; ethylbenzene ; toluene; and xylenes. TICs were detected in 9 of 42 soil samples. The concentrations of specific VOCs and total

VOCs (i.e., sum of target VOCs and TICS) were compared to NYSDEC TAGM 4046 RSCOs. As shown, RSCOs for specific VOCs and/or total VOCs were not exceeded in any of the soil samples from Phase I & II test boring locations or Phase II well locations.

SVOCs

SVOC test results indicate that target SVOCs were detected in 29 of 37 soil samples. Between one and 18 different target SVOCs were detected in one or more soil samples. These SVOCs are generally categorized as PAHs. TICs were detected in 35 of 37 soil samples. The concentrations of specific SVOCs and total SVOCs (i.e., sum of target SVOCs and TICS) were compared to NYSDEC TAGM 4046 RSCOs. As shown, the concentrations of one or more of the SVOCs benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenz(a,h)anthracene measured in soil samples PHO-GS-07, PHO-GS-16, PHO-GS-50, and PHO-WS-06 (refer to Figure 13 included in Appendix A) exceeded RSCOs.

- Sample PHO-GS-07 was collected adjacent to the former underground fuel oil tank(s).
- Sample PHO-GS-16 was collected west of the underground concrete silver recovery vault.
- Sample PHO-GS-50 was collected north of Building #5 adjacent to the former film incinerator.
- Sample PHO-WS-06 was collected east of Building #11 near the foundation of the former exterior chemical storage shed.

TAL Metals

TAL metals detected in one or more of the 47 soil samples tested include: aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, vanadium, and zinc. The concentrations of metals were compared to typical background ranges and RSCOs referenced in NYSDEC TAGM 4046. For metals without RSCOs or typical background ranges listed in TAGM 4046 (i.e., antimony, silver, and thallium), the residential RBCs referenced in the USEPA Region III RBC table dated October 8, 2004 were used for comparison. The comparison is summarized as follows:

- The metals arsenic, cadmium, calcium, chromium, copper, lead, magnesium, mercury, nickel, selenium, and zinc were detected in one or more samples at concentrations exceeding the upper limit of corresponding typical background ranges.

- The metals arsenic, beryllium, cadmium, chromium, copper, iron, mercury, nickel, selenium, and zinc were detected in one or more samples at concentrations exceeding their respective available RSCOs.

- The metal silver was detected in one sample at a concentration exceeding the residential USEPA Region III residential RBC.

Many of the detected metals (e.g., aluminum, calcium, magnesium, manganese, potassium, sodium, vanadium, etc.) generally appear attributable to naturally occurring concentrations of metals at the Site since the specific concentrations of these metals exhibited similar concentrations across the Site.

Subsurface soil samples with distinctly higher concentrations of metals than other samples tested (i.e., two or more times) and exceed applicable criteria included:

- Sample PHO-GS-01 from the former open burn pit area: cadmium, iron, nickel, selenium, and zinc [Note: Metals in items burned at the burn pit may be the source of these metals detected in this sample.]
- Sample PHO-GS-03 from the former retention pond area: arsenic, cadmium, chromium, copper, iron, nickel, selenium, and zinc [Note: Photech used to burn trash at the retention pond area. Metals in the trash may be the source of these metals detected in this sample.]
- Sample PHO-GS-17 near the underground silver recovery vault: cadmium, copper, nickel, selenium and silver [Note: Photech wastewater was passed through the silver recovery vault and leakage from the vault may be the source of these metals in this sample.]
- Sample PHO-GS-39 east facility perimeter across from open burn pit: arsenic, cadmium, copper, iron, lead, nickel, and zinc [Note: Metals in items burned at the burn pit may be the source of these metals detected in this sample.]
- Sample PHO-GS-50 north of Bldg. #5 adjacent to former film incinerator: nickel and selenium [Note: Metals in film or other materials that were incinerated at this location may be the source of these metals detected in this sample.]
- Sample PHO-WS-01 near the underground silver recovery vault: cadmium [Note: Photech wastewater was passed through the silver recovery vault and leakage from the vault may be the source of this metal in this sample. This samples was also subjected to a TCLP, and the resulting TCLP extraction was tested for TCLP metals. The test results indicated that only cadmium was detected at a concentration of 449 ug/l, which is below its characteristic hazardous waste maximum contaminant limit (MCL) of 1,000 ug/l. As such, this sample is not a characteristic hazardous waste based on its metals content.]

The detected metals and their reported concentrations that exceed SCGs for the six samples identified above are shown on Figure 14.

Alcohols

Only the alcohol 2-propanol was detected in 2 of 30 soil samples that were tested. Sample PHO-GS-27 located adjacent to a suspect underground concrete storage vault contained 670 ug/Kg of 2-propanol. Sample PHO-GS-32 located adjacent to the former incinerator area contained 1,100 ug/Kg of 2-propanol. A NYSDEC TAGM 4046 RSCO is not available for 2-propanol.

TPH

TPH was not detected in the 15 soil samples tested at concentrations above reported analytical laboratory detection limits.

TOC

TOC was detected in Samples PHO-WS-01, PHO-WS-02 and PHO-WS-07 at concentrations of 1.4%, 0.22% and 0.73%.

Grain Size Analysis

Grain size analysis was performed on Samples PHO-WS-01, PHO-WS-02 and PHO-WS-07. The test results indicated that the predominant soil size is silt (35/3% to 54.5%) with lesser amounts of sand (16.1% to 27.5%), clay (15.5% to 27.9%) and gravel (1.5% to 23.6%).

Soil Summary

VOCs, alcohols, and TPH were not detected at concentrations above available RSCOs or that would deem further investigation or corrective actions.

TCL SVOCs exceeding RSCOs were detected in 4 of 37 soil samples located:

- adjacent to the former underground fuel oil tank(s);
- west of the underground concrete silver recovery vault;
- north of Building #5 adjacent to the former film incinerator; and
- east of Building #11 near the foundation of the former exterior chemical storage shed.

Metals with distinctly higher concentrations than other samples tested (i.e., approximately two or more times) and exceeded applicable criteria were detected in 6 of 47 soil samples located:

- from the former open burn pit area (cadmium, iron, nickel, selenium, and zinc)
- from the former retention pond area (arsenic, cadmium, chromium, copper, iron, lead, nickel, selenium, and zinc)
- near the underground silver recovery vault (cadmium, copper, nickel, selenium, and silver)
- east facility perimeter across from the open burn pit area (arsenic, cadmium, copper, iron, lead, nickel, and zinc)
- north of Bldg. #5 adjacent to the former film incinerator (nickel and selenium)

4.3 Groundwater Quality

One round of groundwater samples was collected from each of the ten well locations. Samples were tested for one or more of the following parameters: TCL VOCs, TCL SVOCs,

TAL Metals, and alcohols. The detected concentrations of these parameters were compared to NYSDEC TOGS 1.1.1 groundwater standards or guidance values as amended by an April 2000 addendum. Copies of the analytical laboratory test results and executed chain-of-custody documentation for the groundwater samples tested are included in Appendix E. The detected concentrations and comparison to corresponding NYSDEC criteria are summarized on Tables included in Appendix D. The test results for groundwater samples are summarized as follows:

VOCs

VOC test results indicate that target VOCs were detected in 9 of 10 groundwater samples (refer to Figure 15 included in Appendix A). Target VOCs detected in one or more groundwater samples included: acetone; 1,1-dichloroethene; 1,1-dichloroethane; 1,2-dichloroethene; 1,1,1-trichloroethane; trichloroethene; toluene; and xylenes. These VOCs are typically associated with solvents and/or petroleum products. TICs were detected in 8 of 10 groundwater samples. The concentrations of specific VOCs were compared to NYSDEC TOGS 1.1.1 groundwater standards or guidance values. As shown, groundwater standards or guidance values were exceeded for two samples. Specifically, the concentration of 1,1-dichloroethane (i.e., 8 ug/l) detected in Sample PHO-WW-09 exceeded its groundwater standard of 5 ug/l and the concentration of trichloroethene (i.e., 16 ug/l) detected in Sample PHO-WW-08 exceeded its groundwater standard of 5 ug/l. The relatively 'low' concentrations of VOCs detected in groundwater do not appear to suggest a specific source or source area of VOC contamination. Rather, it is possible that groundwater impacts across the Site may be attributable to an area-wide or off-site plume. [Note: Groundwater conditions at the adjoining property to the south (General Motors Delphi Plant) are contaminated with similar VOCs. The VOCs on this adjoining property are attributable to past releases on that property, and VOC groundwater remediation is being conducted]

SVOCs

SVOC test results indicate that target SVOCs were detected in 6 of 10 groundwater samples (refer to Figure 16 included in Appendix A). Sample PHO-WW-06 contained 19 SVOCs at concentrations above reported analytical laboratory detection limits. One or two SVOCs were detected in the other five groundwater samples where SVOCs were detected above reported analytical laboratory detection limits. These SVOCs are generally categorized as PAHs. TICs were detected in 9 of 10 groundwater samples. The concentrations of specific SVOCs were compared to NYSDEC TOGS 1.1.1 groundwater standards or guidance values. As shown, groundwater standards or guidance values for 5 of 19 SVOCs detected in Sample PHO-WW-06 were exceeded. This well is located east of Building #11 near the foundation of the former exterior chemical storage shed. [Note: The PAHs detected in groundwater sample PHO-WW-06 are similar to the PAHs detected in surface soil samples and one subsurface soil sample that exceeded TAGM 4046 RSCOs from this same area of the Site]

TAL Metals

TAL metals detected in one or more of the 10 groundwater samples tested include: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc. The concentrations of metals were compared to groundwater standards or guidance values as referenced in NYSDEC TOGS 1.1.1, and the comparison is summarized as follows:

- The metals antimony, arsenic, beryllium, cadmium, chromium, copper, iron, lead, manganese, selenium, silver, thallium and zinc were detected in one or more samples at concentrations exceeding groundwater standards or guidance values.

Many of the detected metals (e.g., aluminum, antimony, barium, beryllium, calcium, iron, magnesium, manganese, potassium, sodium, etc.) generally appear attributable to naturally occurring concentrations of metals at the Site since the specific concentrations of these metals exhibited similar concentrations across the Site. A review of BRG Sample Collection Logs indicates that many groundwater samples were turbid in appearance during their collection.

Samples with distinctly higher concentrations of metals than other samples tested (i.e., about two or more times higher) and exceed groundwater standards or guidance values for metals included:

- Sample PHO-WW-01 near the underground silver recover vault: cadmium, chromium, copper, silver, thallium, and vanadium.
- Sample PHO-WW-03 near the west side of the facility perimeter across from Building #16: thallium.
- Sample PHO-WW-05 east of the former 2,500-gallon waste methanol tank: cadmium and zinc.
- Sample PHO-WW-07 near the northeast corner of the former retention pond: lead, silver, and zinc.
- Sample PHO-WW-08 near the film incinerator and transformer: arsenic, beryllium, chromium, copper, iron, lead, silver, and zinc.
- Sample PHO-WW-09 east of Bldg. #4 near the concrete drywell location: selenium.

The six samples identified above and the reported metal concentrations are shown on Figure 17.

Alcohols

Alcohols were not detected above reported analytical laboratory detection limits in the five groundwater samples that were tested.

Sulfide

Sample PHO-WW-01 contained 4.9 mg/l of sulfide. Sulfide was not detected in sample PHO-WW-04.

Methane

Sample PHO-WW-01 contained 1,200 ug/l of methane. Sample PHO-WW-04 contained 46 ug/l of methane.

Groundwater Summary

Alcohols were not detected in groundwater samples at concentrations above reported analytical laboratory detection limits.

TCL VOCs exceeding TOGS 1.1.1 groundwater standards were detected in groundwater samples from two groundwater monitoring wells:

- 1,1-dichloroethane was detected in the groundwater sample from Well 08 at a concentration of 8 ug/l, which exceeds the TOGS 1.1.1 groundwater standard of 5 ug/l. Well 08 is located in proximity to the former film incinerator and transformer.
- 1,1,1-trichloroethane was detected in the groundwater sample from Well 09 at a concentration of 16 ug/l, which exceeds the TOGS 1.1.1 groundwater standard of 5 ug/l. Well 09 is located east of Building #4 near the concrete drywell location.

TCL SVOCs exceeding TOGS 1.1.1 groundwater standards or guidance values were detected in a groundwater sample from Well 06, which is located east of Building #11 near the foundation of the former exterior chemical storage shed.

Samples with distinctly higher concentrations of metals than other samples tested (i.e., about two or more times higher) and exceed groundwater standards or guidance values for metals included:

- near the underground silver recover vault: cadmium, chromium, copper, silver, thallium, and vanadium.
- near the west side of the facility perimeter across from Building #16: thallium.
- east of the former 2,500-gallon waste methanol tank: cadmium and zinc.
- Near the northeast corner of the former retention pond: lead, silver, and zinc.
- near the film incinerator and transformer: arsenic, beryllium, chromium, copper, iron, lead, silver, and zinc.
- east of Bldg. #4 near the concrete drywell location: selenium.

4.4 Building Areas

This section describes the results of the Phase I and II asbestos surveys and the Phase I and II building and equipment surveys.

4.4.1 Asbestos

The Phase I asbestos sampling air samples did not detect concentrations of asbestos above the OSHA PEL of 0.1 f/cc. The wipe sampling results from the Phase I asbestos sampling identified asbestos in Buildings 1, 2 and 11. A copy of the Paradigm report is included in Appendix F.

Based on the Paradigm asbestos survey, ACMs and PACMs were identified in Buildings 1 through 13, Building 16, Building 17, the Guard Shack, the Carpenter Shed, some exterior piping, and the Tunnel between Buildings 5 and 2. The quantities of ACMs and PACMs are estimated in the Paradigm report and summarized below:

Location	Estimated Quantity	
	Linear Feet	Square Feet
Building #1	27	690
Building #2	6,360	14,890
Building #3	32	80
Building #4	144	1,240
Building #5	812	3,060
Building #6	0	890
Building #7	780	7,900
Building #8	120	464
Building #9	0	100
Building #10	150	100
Building #11	2,970	5,775
Building #12	290	6,155
Building #13	400	70
Building #16	4,305	2,300
Building #17	320	390
Guard Shack	0	50
Carpenter Shed	0	214
Exterior Piping	1,160	0
Tunnel – Buildings 5/2	500	0

The Paradigm report describes the individual type of ACMs and PACMs for each building (i.e., floor tile, pipe insulation, mastic, caulk, etc.) and the estimated quantities. However, the Paradigm asbestos survey was conducted between April and June 1999 and since that time the condition of the buildings have deteriorated due to fires, vandalism, lack of maintenance, etc. Therefore, some of the ACMs have been damaged and debris spread throughout the buildings may be required to be treated as ACMs.

4.4.2 Buildings and Equipment

The results of the wipe sampling conducted during the Phase II B/E survey are listed on "Phase II Building and Equipment Survey - Wipe Sample Results" tables included in Appendix D. As shown, metals were detected in each of the 110 wipe samples analyzed. However, the NYSDEC does not list standards or guidance values for metal concentrations in wipe samples. As such, the results of this work will be used for developing proper personal protection equipment (PPE) to be used during removal and for identifying proper disposal methods.

Based on the results of the bulk sampling conducted during the Phase II B/E survey, some waste/process materials may require disposal as a hazardous waste. "Phase II Building and Equipment Survey - Bulk Sample Results" tables included in Appendix D summarizes the analytical testing results, the location of the samples, type of materials, and the estimated quantities. Below is a brief description of the materials that have been identified as a hazardous waste based on the Phase II B/E bulk sampling:

VOCs

Bulk sample PHO-ISB-002 exceeded the characteristic hazardous waste concentration for 1,2-DCA and 2-butanone. This sample was a composite of various cutting oils, lubricants, compressor oils, gear oils, etc. located in Building 4. The amount of material was not noted on the sampling log. [Note: This sample also exceeded the characteristic hazardous waste concentration for metals.]

Bulk sample PHO-ISB-004 exceeded the characteristic hazardous waste concentration for benzene. This sample was a composite of various unused oil containers located in Building 5. [Note: This sample also exceeded the characteristic hazardous waste concentration for metals.]

Metals

Twelve of the thirty-two bulk samples collected exceeded the characteristic hazardous waste concentration for one or more metals, and will require disposal as a hazardous waste. A list of the locations and quantities of these materials is briefly described below:

- Sample PHO-ISB-001 – liquid sample collected from silver recovery process lines and pumps in the basement of Building 1. Estimated amount – 60 gallons.
- Sample PHO-ISB-007 – liquid sample collected from an unlabelled 55-gallon drum located in Building 5 (boiler house). Estimated amount – 35 gallons.
- Sample PHO-ISB-009 – composite sample of liquid in silver recovery tanks and process lines in Room 11A of Building 2. Estimated amount – 120 gallons.
- Sample PHO-ISB-010 – liquid sample collected from the drainage sump in the equipment and can wash room in the basement of Building 2. Estimated amount – 45 gallons.

- Sample PHO-ISB-013 – liquid sample collected from a kettle in Room 112A in Building 2. Estimated amount – 200 gallons.

- Sample PHO-ISB-022 – liquid sample collected from 2-inch floor drain in Room 109 in Building 11. Estimated amount – unknown (depth/length of drain unknown).

- Sample PHO-ISB-029 – liquid sample collected from kathabar system (sumps/tanks) in Building 10. Estimated amount – 493 gallons.

- Sample PHO-ISB-030 – liquid sample collected from kathabar system (sumps/tanks) in Building 9. Estimated amount – 115 gallons.

- Sample PHO-ISB-031 – liquid sample collected from kathabar system (sumps/tanks) in Building 17. Estimated amount – 140 gallons.

[Note: The location and estimated amounts of material are based on the data collected during the 1999 B/E survey.]

The other bulks samples not identified as characteristic hazardous waste also require proper disposal. In addition, although no solid materials were identified as hazardous waste, some of the total metal sampling of these materials identified elevated concentrations of metals and should be sampled using TCLP testing to determine whether or not the material is a characteristic hazardous waste and requires disposal as a hazardous waste. Specifically, samples PHO-IBS-023 and PHO-IBS-024 should be further evaluated. However, since there is only a small amount of these materials (3 and 4 lbs. respectively), these materials could be presumed to be hazardous waste and be disposed as such.

PCB Containing Light Ballasts

An inventory of the fluorescent light ballasts within the buildings at the Site was also conducted during the equipment and building survey. The results of the inventory are summarized in the following table below:

LOCATION	NO. OF BALLASTS
Building #1 First Floor	82
Building #1 Second Floor	72
Building #2 Basement	10
Building #2 First Floor	22
Building #2 Second Floor	27
Building #2 Third Floor	13
Building #3	2
Building #4	25
Building #6	7
Building #7	1
Building #8	2
Building #9	2
Building #10	10
Building #11	19
Building #12	77
Building #13	15
Building #16	72
Tunnel – Building #1	7
Carpenter Shed	4
TOTAL	**469**

These light ballasts have not been tested for PCBs and as such are currently being presumed to contain PCBs.

5.0 CONTAMINANT FATE AND TRANSPORT

This section includes an evaluation of contaminant fate and transport for the Site including identifying potential routes of migration, contaminant persistence and contaminant migration.

5.1 Potential Routes of Migration

Potential routes of migration identified for this Site include:

- Metals and SVOCs in surface soil and subsurface soil migrating and impacting the groundwater table through precipitation or contact with groundwater;
- Metals and SVOCs migrating in a dissolved groundwater plume;
- Metals and SVOCs absorbed onto surface soil particles and becoming windborne;
- If the impacted surface soil or subsurface soil were to be disturbed, indirect migration pathways may include: transportation on construction equipment, windborne, etc.;
- Airborne asbestos fibers could migrate out of the buildings through broken windows, holes in the roof, etc. and impact downwind areas; and,
- Waste/process materials in the buildings could leach through the concrete floors and impact the subsurface.

5.2 Contaminant Persistence

The contamination at the Site is identified as generally consisting of SVOCs and TAL metals in surface soils, subsurface soils and groundwater.

SVOCs

The SVOCs detected in the soil and groundwater are generally considered PAHs. The types of SVOCs encountered at the Site biodegrade aerobically and anaerobically. The groundwater results suggest anaerobic methanogenesis is occurring in proximity to the underground concrete silver recovery vault associated with the wastewater system for the facility. Half lives for some PAHs commonly detected at the Site were referenced in the "Handbook of Environmental Degradation Rates", P.H. Howard, et. al, 1991. This reference suggests these PAH SVOCs will biodegrade faster under aerobic conditions. The range of specific half lives for constituents commonly detected at the Site in groundwater are summarized below:

- Benzo(a)anthracene: Half-life in soil between 102 days and 1.86 years. Half-life in groundwater between 204 days and 3.73 years.
- Chrysene: Half-life in soil between 1.02 years and 2.72 years. Half-life in groundwater between 2.04 years and 5.48 years.
- Benzo(k)fluoranthene: Half-life in soil between 2.49 years and 5.86 years. Half-life in groundwater between 4.99 years and 11.7 years.
- Benzo(b)fluoranthene: Half-life in soil between 0.99 years and 1.67 years. Half-life in groundwater between 1.97 years and 3.34 years.

- Benzo(a)pyrene: Half-life in soil between 57 days and 1.45 years. Half-life in groundwater between 114 days and 2.9 years.
- Indeno(1,2,3-cd)pyrene: Half-life in soil between 1.64 years and 2 years. Half-life in groundwater between 3.29 years and 4 years.
- Dibenz(a,h)anthracene: Half-life in soil between 0.99 year and 2.58 years. Half-life in groundwater between 1.98 years and 5.15 years.
- Naphthalene: Half-life in soil between 16.6 days and 480 days. Half-life in groundwater between 2 days and 258 days.

As shown, with the exception of naphthalene, these PAHs are relatively persistent in soil and groundwater.

Information on PAHs was referenced from the Agency for Toxic Substances and Disease Registry (www.atsdr.cdc.gov.toxprofiles.phs8920.html). A summary of information for PAHs is provided below:

- PAHs can occur in air attached to dust particles, and some can evaporate into the air from soil or surface waters.
- PAHs can break down by reacting with sunlight and other chemicals in the air, over a period of days to weeks.
- Most PAHs do not dissolve easily in water, but tend to absorb onto solid particles such as soil. Certain PAHs can migrate through soil and contaminate groundwater.
- Microorganisms can break down PAHs in soil or water after a period of weeks to months.
- PAH contents of plants and animals may be much higher than PAH contents of soil or water in which they live.

In addition to biodegradation, SVOC PAH concentrations in the groundwater would presumably decrease as the distance from the source area is increased due to processes such as advection, dispersion, sorption, diffusion, etc.

Metals

The metals cadmium, mercury, nickel, selenium and zinc were detected most often in surface soils at concentrations exceeding TAGM 4046 RSCOs or the upper limit of typical background ranges. The metals cadmium, chromium, copper, iron, nickel, selenium and zinc were detected most often in subsurface soils at concentrations exceeding TAGM 4046 RSCOs or the upper limit of typical background ranges. The metal silver was detected in one surface soil sample and one subsurface soil sample at concentrations exceeding the residential USEPA Region III RBC. The metals cadmium, chromium, copper, iron, lead, selenium, silver, thallium, vanadium and zinc were detected most often in groundwater at concentrations exceeding TOGS 1.1.1 groundwater standards or guidance values.

The Agency for Toxic Substances and Disease Registry internet site was referenced for information on metals that were commonly detected above NYSDEC criteria in soil and groundwater samples. A summary of information for these metals is provided below:

- Cadmium: Cadmium is a naturally-occurring element that can be released by both natural and manufacturing processes. Cadmium binds strongly to soil particles and can dissolve in water. Cadmium does not breakdown in the environment, but it can change forms. Cadmium can bio-accumulate.

- Mercury: Mercury is a naturally occurring element, which has several forms and can be released by both natural and manufacturing processes. The metallic mercury is a shiny, silver-white, odorless liquid. Mercury combines with other elements, such as chlorine, sulfur, or oxygen, to form inorganic mercury compounds or "salts". Mercury also combines with carbon to make organic mercury compounds. The most common one, methylmercury, is produced mainly by microscopic organisms in the water and soil. More mercury in the environment can increase the amounts of methylmercury that these small organisms make. Mercury can bio-accumulate.

- Nickel: Nickel is an abundant naturally-occurring element that can be released by both natural and manufacturing processes. Mercury is found primarily combined with oxygen (oxides) or sulfur (sulfides). Nickel particles in air tend to settle to the ground or are taken out of the air in rain. Much of the nickel in the environment is found in soil and sediments because nickel attaches to particles that contain iron or manganese, which are often present in soil and sediments. Nickel does not appear to bio-accumulate.

- Selenium: Selenium is a naturally-occurring element that can be released by both natural and manufacturing processes. Insoluble forms of selenium will remain absorbed in soil, but soluble forms are mobile and may enter groundwater from soils. Selenium can bio-accumulate.

- Zinc: Zinc is a naturally-occurring element that can be released by both natural and manufacturing processes. Zinc attaches to soil, sediments, and dust particles in the air. Zinc compounds can migrate from soil and impact groundwater. Most of the zinc in soil stays bound to soil particles. Zinc tends to bio-accumulate in fauna, but not flora.

Processes such as advection, dispersion, sorption, diffusion, etc, can result in decreases in metals concentrations dissolved in groundwater as the distance away from their source is increased.

Asbestos

Asbestos is a naturally occurring fibrous silicate mineral that is used in numerous building materials due to tensile strength and resistance to chemicals and heat. Asbestos fibers generally do not breakdown into other compounds and remain virtually unchanged over long periods of time.

Building Materials

The waste/process materials and impacted building materials generally contain similar contaminants to those identified for the soil and groundwater.

5.3 Contaminant Migration

Contaminant migration patterns noted for specific constituent types are further described in this section. Primary constituent types detected above regulatory criteria (i.e., above SCGs) include PAH SVOCs and metals.

PAH SVOCs have been detected in surface soils, subsurface soils and groundwater at the Site. The area with the most significant evidence of PAH SVOC concentration and migration is east of Building #11 near the foundation of the former exterior chemical storage shed. Surface soil samples and one subsurface soil sample exceeded TAGM 4046 RSCOs for a number of PAH SVOCs. The groundwater sample from Well 06 contained PAH SVOCs above TOGS 1.1.1 groundwater standards or guidance values. It appears that past releases of PAH SVOCs to the groundwater surface in the area of the Site has migrated downward and impacted groundwater. Based on the analytical laboratory test results for groundwater samples collected from other Site wells, this impact appears localized to the general vicinity of the apparent source area.

Elevated metals, with cadmium being the most significant, have been detected in subsurface soil in proximity to the underground concrete silver recovery vault associated with the facility's wastewater system. Elevated metals, with silver being the most significant, have been detected in groundwater in proximity to the underground concrete silver recovery vault. It is suspected that poor integrity of the concrete vault has resulted in releases of its contents that have impacted surrounding subsurface soil and groundwater. Based on the analytical laboratory test results for groundwater samples collected from other Site wells, this impact appears localized to the general vicinity of the apparent source area.

Asbestos fibers can remain airborne for long periods of time and can be carried by wind and water before settling to the ground.

5.3.1 Factors Affecting Contaminant Migration

Factors affecting contaminant migration include advection, mechanical dispersion, molecular diffusion, adsorption of constituents onto soil particles and partitioning of constituents between soil, groundwater and air.

The type of contamination present at the Site generally consists of PAH SVOCs and TAL metals. In general, the metals are more soluble in water than the PAH SVOCs; thus, the metals tend to be more mobile in the environment than the SVOCs.

The groundwater flow pattern based on February 2000 groundwater elevation data suggests groundwater at the Site flows toward the center of the Site. This type of pattern would assist in controlling off-site migration of dissolved PAH SVOCs or TAL metals that may be attributable to past releases at the Site.

Hydraulic conductivities calculated for the Site are typical for a glacial till material and range between 1.42×10^{-4} cm/sec (Well-02) and 1.05×10^{-2} cm/sec (Well-01). The average groundwater gradient is 0.03 ft/ft. Using a porosity range of 0.10 to 0.25, the groundwater

flow velocity for the site is calculated to range between 0.74 ft/day and 1.84 ft/day (i.e., between 270.1 ft/year and 671.6 ft/year).

Currently, asbestos in the buildings is generally contained (with the exception of small holes in windows, roofs, etc.); however, deterioration of the buildings would facilitate migration of asbestos from the Site.

The waste/process materials located in the buildings are generally contained; however, deterioration of the buildings would facilitate migration of these materials into the subsurface at the Site.

6.0 SITE INVESTIGATION CONCLUSIONS

6.1 Investigation Summary

Studies performed as part of this project included:

- Evaluation of surface soil conditions
- Evaluation of subsurface soil conditions
- Evaluation of groundwater conditions
- Evaluation of building materials for the presence of asbestos and contaminants associated with former operations
- Completion of IRM activities, which included closure of ASTs, closure of the containment drum associated with the Building #15 chemical storage shed, evaluation of subsurface conditions at two suspected underground structures (i.e., former buried steel chemical tanks and concrete vault).

This work also included testing samples of surface soil, subsurface soil, groundwater, and building materials at analytical laboratories, and/or field screening using real-time meters, for various physical and chemical characteristics.

Based on information obtained as part of this study, the soils at the Site have been interpreted to consist of pro-glacial lacustrine and glacial till deposits underlain by Rochester Shale bedrock. Based on February 2000 groundwater data, groundwater generally flows radially toward the center of the Site. An assessment of the contaminant types and distribution is included in the following sections of this report.

Potential contaminant sources identified and investigated include the following:

1) 12,000-gallon underground silver recovery vault;
2) Pipes from Building #2 silver recovery tanks to a 12,000-gallon wastewater AST;
3) Hazardous waste storage in the vicinity of the chemical shed foundation east of Building #11;
4) In proximity to discharge locations of scupper drains on the east side of Building #11;
5) Liquid storage vault east of Building #4;
6) Former film incinerator locations west of Building #5 and at the foundation of the Carpenters Shed;
7) In the retention pond where open burning of trash took place;
8) Process discharges into the retention basin prior to redirecting discharges into the sanitary sewer;
9) Drainage swale on northeast portion of the property;
10) Storage of chemicals and hazardous waste at the chemical storage shed (Building #15);
11) Adjacent and exterior to the chemical and storage mixing area and an incinerator room in Building #12;
12) Asbestos containing materials inside the buildings;
13) Chemical residues remaining inside the buildings; and
14) Off-site sources.

Most sources that would further contaminate the surface and subsurface environment have been removed as a result of the manufacturing process being discontinued and the U.S. EPA clean up. However, some sources do remain, including off-site sources. The following sections provide conclusions regarding the contamination detected as a result of the site investigation performed at the Site.

6.2 Nature and Extent of Contamination

The nature and extent of contamination are discussed for each area of concern as provided below. In general, the extent of contaminants detected in surface soil, subsurface soil, groundwater, or building materials appear confined to the boundaries of the Site. The findings are described as areas of concern.

Given the complex layout of basements, tunnels and underground structures, environmental testing beneath the footprints of facility buildings was not conducted as part of the site investigation portion of this project. As such, the nature and extent of potential contamination beneath the building footprints is unknown. It is understood that facility buildings will eventually be demolished by the City in preparation for redevelopment of the Site. The City plans on evaluating subsurface conditions beneath building footprints during or after demolition activities.

6.2.1 Soils and Groundwater

Based on the analytical laboratory test results, sources of suspected contamination identified in the Work Plan and Section 2.1.6 of this report were confirmed to have contamination above TAGM 4046 RSCOs and typical background ranges, USEPA Region III residential RBC, and TOGS 1.1.1 groundwater standards or guidance values. Some of the metals detected in surface soil, subsurface soil or groundwater (e.g., antimony, arsenic, beryllium, calcium, magnesium, manganese, iron, and possibly zinc) appear partly attributable to naturally occurring sources and/or area-wide source(s) in soil and groundwater, and possibly not specifically related to releases of contaminants during former operations at the Site.

Areas of highest concentrations of contaminants exceeding SCGs are:

1) East of Building #11 in proximity to chemical laboratory scupper drains and a former chemical storage shed; and,

2) South of Building #1 in proximity to the underground concrete silver recovery vault associated with former wastewater treatment system.

A more detailed evaluation of the analytical data for the property indicates that specific or general areas appear to have higher levels of contamination above background concentrations than other areas of the property. The details of these AOCs including the suspected source and observed contamination are provided below:

AOC1 East of Chemical Lab Building #11: Metals contamination (most notably cadmium, mercury, nickel, selenium and zinc) and PAH SVOC contamination above SCGs were detected in surface soil samples east of Building #11 (the former Chemical Lab) in proximity to scupper drain discharge locations. Subsurface soil and groundwater

samples collected from Well 06 near the former shed east of Building #11 (i.e., also in the general location of where the surface soil samples were collected) also contained concentrations of PAH SVOCs above TAGM 4046 RSCOs and TOGS 1.1.1 groundwater standards or guidance values, respectively. The extents of metal contamination and SVOC contamination have not been fully defined in this area. [Note: Based on the current data, it appears that impacted soil in this area extends beneath Building #11.]

AOC2 Silver Recovery Vault Area: The underground concrete silver recovery vault associated with the facility's wastewater system, located on the southeastern portion of the Site, has contents that can be considered a characteristic hazardous waste. The integrity of the recovery vault is suspect. Leakage from this silver recovery system appears to have resulted in subsurface soil and groundwater contamination on this portion of the Site. Some of the samples in the areas to the south and/or east of Building #1 in proximity to the underground silver recovery vault contained concentrations of SVOCs and/or metals above TAGM 4046 RSCOs or typical background ranges (or USEPA Region III residential RBC, where applicable) and TOGS 1.1.1 groundwater standards or guidance values [i.e., most notably: the SVOC benzo(a)pyrene and the metals cadmium, copper, nickel, selenium and silver in soil samples; and cadmium, chromium, copper, silver, thallium and vanadium in a groundwater sample]. The extent of metals and SVOC contamination in this area has not been fully defined. [Note: Based on the current data and the location of the Silver Recovery Vault System and associated piping, it appears that impacted soil and/or groundwater in this area extends beneath Building #1.]

AOC3 Eastern Portion of the Site: Former operations at various areas on the eastern portion of the Site appear to have contributed to intermittent contamination of surface soil, subsurface soil and groundwater in this area of the Site. Specific areas where contamination was detected at concentrations above SCGs for VOCs or SVOCs, or at distinctly higher concentrations for metals SCGs, include:

- Former open burn pit area on east side of Site
  - The metals cadmium, iron, nickel, selenium and zinc in subsurface soil
- Former retention pond where solid waste was burned/dumped on east side of Site
  - The metals arsenic, cadmium, chromium, copper, iron, lead, nickel, selenium and zinc in subsurface soil
  - The metals lead, silver and zinc in groundwater
- Former film incinerators on east side of the Site
  - SVOCs, nickel and selenium in subsurface soil
  - The VOC 1,1-dichloroethane and the metals arsenic, beryllium, chromium, copper, iron, lead, silver and zinc in groundwater
- Former transformer pad area on east side of Site
  - SVOCs in surface soil
  - The VOC 1,1-dichloroethane, and the metals arsenic, beryllium, chromium, copper, iron, lead, silver and zinc in groundwater

- Retention pond cement culvert discharge area on east side of Site
    - SVOCs in surface soil

- Former UST(s) area on east side of Site
    - The SVOC benzo(a)pyrene in subsurface soil

The extent to which these types of contaminants were encountered in surface soils, subsurface soils, or groundwater in these areas was not fully defined during the site investigation. However, based upon available data, these contaminants appear to be generally irregular and/or intermittent. In many cases, the majority of field samples tested from these areas did not contain significant concentrations of contaminants above SCGs.

AOC4 Miscellaneous Areas: Operations at various miscellaneous areas of the Site appear to have contributed to intermittent contamination of surface soil and groundwater at the Site. Specific areas where contamination was detected at distinctly higher concentrations for metals SCGs, include:

- The former chemical storage shed on the west side of the Site
    - The metals selenium and zinc in surface soil

- West side of facility perimeter
    - The metal thallium in groundwater

- Former waste methanol tank area
    - The metals cadmium and zinc in groundwater

- Former concrete drywell area on east side of Site
    - The VOC 1,1,1-trichloroethane and the metal selenium in groundwater

The extent to which these types of contaminants were encountered in surface soils or groundwater in these areas was not fully defined during the site investigation. However, based upon available data, distribution of these contaminants appears to be generally irregular and/or intermittent. In many cases, the majority of field samples tested from these areas did not contain significant concentrations of contaminants above SCGs.

6.2.2 Building Areas

Various locations of hazardous substances were identified within the buildings at the Photech site. Specifically, asbestos, light ballasts presumed to contain PCBs, and residual chemicals from past processing activities were found within the building structures. Summaries of the areas of concern are identified below.

AOC5 Asbestos Containing Materials: The purpose of the facility-wide asbestos survey was to identify regulated areas within the buildings. At the time of the survey, air fiber concentrations were below the PEL of 0.1 fiber per cubic centimeter. However, wipe samples showed loose asbestos material contamination in the following areas:

Research and Development - Building #1:

- Second Floor Rooms 227 and 230

Emulsion Building #2:

- Basement – Stockroom
- Second Floor- Rooms 225 and 215
- Third Floor - Room 325

Chemical Laboratory – Building #11

- Basement Hallway

Based on the wipe sample results summarized above, airborne concentrations could exceed the PEL during certain remedial or demolition activities.

The second phase of the asbestos survey found ACM present inside most of the buildings at the Photech facility as identified in Section 4.4.1. More specific information as to the locations, quantities, and types of materials can be found in the Asbestos Survey Report in Appendix F. Asbestos abatement will need to be performed in accordance with 29 CFR 1910.1001 and 1926.1101 (OSHA regulations); 40 CFR 61.45, 61.150, 61.152, and 61.153 (EPA regulations); 49 CFR 171 and 172 (DOT regulations); and NYSDOL Code Rule 56, if ACM is proposed to be disturbed or removed. [Note: It is anticipated that variances will be obtained from applicable regulatory authorities to complete asbestos abatement work.]

AOC6 Residual Chemicals: The interiors of many of the buildings contain waste/process materials that require disposal as hazardous and/or non-hazardous wastes. In addition, building materials and equipment will require appropriate handling during removal and demolition activities as described in Section 4.4.2. Locations of these materials are also depicted in the "Phase II Building and Equipment Survey – Bulk Sample Results" table. Specific alternatives for addressing these areas of concern within the interior of the buildings are presented in Section 7.0.

6.3 Fate and Transport

This section includes an evaluation of contaminant fate and transport for the Site including identifying potential routes of migration, contaminant persistence, and contaminant migration.

Potential routes of migration identified for this Site include:

- Metals and SVOCs in surface soil and subsurface soil migrating and impacting the groundwater table through precipitation or contact with groundwater;
- Metals and SVOCs migrating in a dissolved groundwater plume;
- Metals and SVOCs absorbed onto surface soil particles and becoming windborne;
- If the impacted surface soil or subsurface soil were to be disturbed, indirect migration pathways may include: transportation on construction equipment, windborne, etc.;

- Airborne asbestos fibers could migrate out of the buildings through broken windows, holes in the roof, etc. and impact downwind areas; and,
- Waste/process materials in the buildings could leach through the concrete floors and impact the subsurface.

Soil and Groundwater

The contamination in surface soils, subsurface soils and groundwater at the Site generally consists of PAH SVOCs and TAL metals. The types of SVOCs encountered at the Site biodegrade aerobically and anaerobically. The groundwater analytical laboratory test results for methane suggest anaerobic methanogenesis is occurring in proximity to the underground concrete silver recovery vault associated with the wastewater system for the facility. Most SVOC and metals contaminants are relatively persistent in soil and groundwater. SVOC and metals concentrations in the groundwater would presumably decrease as the distance from the source area is increased due to processes such as advection, dispersion, sorption, diffusion, etc.

Areas of concern that appear to show the greatest evidence of subsurface migration include:

1) East of Building #11 in proximity to chemical laboratory scupper drains and a former chemical storage shed; and,

2) South of Building #1 in proximity to the underground concrete silver recovery vault associated with former wastewater treatment system.

Asbestos

Asbestos fibers generally do not breakdown into other compounds and remain virtually unchanged over long periods of time.

Building Materials

The waste/process materials and impacted building materials generally contain similar contaminants to those identified for the soil and groundwater.

6.4 Conclusions

Primary contaminants detected in soil and/or groundwater at the Site includes PAH SVOCs and some metals. Areas of most significant soil and/or groundwater contamination include: the area east of Building #11 in proximity to chemical laboratory scupper drain discharges and a former chemical storage shed; and, the area south of Building #1 in proximity to the underground silver recovery vault that is associated with the facilities wastewater treatment system. The contamination at the Site appears to be generally limited to within the Site boundaries. Contaminants primarily consisting of PAH SVOCs or metals were detected at many other areas of the Site, but generally at lower concentrations or more limited extents of impact. In addition, building materials containing asbestos, chemical contents or residues are present at the Site and have been identified as areas of concern.

6.4.1 Data Limitations and Recommendations for Future Work

The following limitations in data and resulting recommendations have been identified:

- Further metals delineation in the area of the underground concrete silver recovery vault associated with the facility wastewater system. [Note: Alternatively, XRF equipment could be used in the field during remediation (i.e., anticipated to be soil removal) to assist in determining the area of removal in conjunction with confirmatory soil sampling.]

- Further delineation of SVOCs east of Building #11. It is recommended that additional surface soil samples and subsurface soil samples be collected and analyzed to further define the extent of contamination (primarily SVOCs) in this area.

- Further delineation of SVOCs and metals on the eastern portion of the Site. It is recommended that additional surface and subsurface soil samples be collected and analyzed to further define the extent of contamination in this area.

- Evaluate subsurface conditions beneath building footprints during or subsequent to demolition of the buildings at the Site. Conduct field observation and screening, and analytical laboratory testing of confirmatory samples of soil and/or groundwater.

7.0 IDENTIFICATION AND DEVELOPMENT OF ALTERNATIVES

7.1 Introduction

This section of the report presents the identification and development of remedial action objectives and remedial alternatives for the Site.

7.2 Remedial Action Objectives

Remedial action objectives for contamination detected in soil and groundwater, waste/process materials in the buildings, asbestos building materials, contaminants of interest, and remediation goals are identified in this section of the report.

7.2.1 Contaminants of Interest

Based on the studies performed to date, the contaminants of interest are primarily comprised of PAH SVOCs and TAL metals in soil and groundwater, asbestos building materials, and waste/process materials in the buildings.

7.2.2 Development of Remediation Criteria

In order to evaluate the effectiveness of remedial alternatives for this Site, the following general and site-specific remediation goals have been derived:

- Protection of Human Health and the Environment. This goal is intended to safeguard exposure and residual risks to human health and the environment during or subsequent to implementation of the remedial alternative that is selected.

- Compliance with Standards, Criteria and Guidance. This goal is intended to evaluate whether the remedial alternative that is selected will ultimately result in compliance with SCGs, to the extent practicable. The chemical specific SCGs for soil are referenced in TAGM 4046. For metals without RSCOs or typical background ranges listed in TAGM 4046 (i.e., antimony, silver, and thallium), the residential RBCs referenced in the USEPA Region III RBC table dated October 8, 2004 were used for comparison. The chemical specific SCGs for groundwater are referenced in TOGS 1.1.1. In addition, location-specific SCGs review the local and state concerns for plant and animal species, environmental habitats, and property use (i.e., zoning laws). Action-specific SCGs review the regulatory requirements that must be met in developing and executing remedial technologies (i.e., such as meeting the requirements of CERCLA, Federal Clean Air Act, Clean Water Act, RCRA, land disposal restrictions, etc.). The SCGs for asbestos are referenced in 29CFR 19.1001 and 1926.1101 (Occupational Safety and Health Association [OSHA] regulations); 40CFR 61.45, 61.150, 61.152, and 61.153 (EPA regulations); 49CFR 171 and 172 (Department of Transportation [DOT] regulations); and NYSDOL Code Rule 56.

- Short-Term Impacts and Effectiveness. This goal is intended to result in the selection of a remedial alternative that protects the community during implementation of remedial actions, and it is protective of further environmental impacts.

- Long-Term Effectiveness and Permanence. This goal is intended to result in the selection of a remedial alternative that contains very little residual risk, can be adequately and reliably controlled over time, and results in a permanent remediation of the contamination.

- Reduction of Toxicity, Mobility and Volume. This goal is intended to result in the reduction of contaminant toxicity, mobility or volume as a result of the remedial alternative that is selected. In addition, the reversibility of the contaminant destruction or treatment is evaluated.

- Feasibility. This goal is intended to select a remedial alternative based on its suitability, implementability at the specific site, and availability of services and materials that will be required. The selection of a remedial alternative includes considerations based on the cost effectiveness.

- Community Acceptance. This goal is intended to select a remedial alternative that is acceptable to the community.

- Planned Future Use of the Site. This goal is intended to evaluate the remedial alternatives in relation to the planned future use of the Site. Presently, it is anticipated that future use of the Site will be re-development for industrial use subsequent to demolition of the existing site structures.

7.3 General Response Actions

Specific areas of concern have been presented in detail in Section 6.2.2. These areas of concern are reiterated below and alternatives for these areas are presented in Section 7.4.

- AOC1: East of Chemical Lab Building #11
- AOC2: Silver Recovery Vault Area
- AOC3: Eastern Portion of the Site
- AOC4: Miscellaneous Areas
- AOC5: Asbestos Containing Materials
- AOC6: Residual Chemicals

7.4 Development of Alternatives

The alternatives evaluated for each area of concern at the Site are briefly described separately below.

7.4.1 AOC1: East of Chemical Lab Building #11

- No Action: The no action alternative is included as a procedural requirement and as a baseline to evaluate other alternatives. Under this alternative, remedial and monitoring activities as well as placement of institutional controls for this area of concern are not implemented. This area would remain virtually as it is and change in use would not be limited.

- Institutional Action with Delineation: Under this alternative, institutional controls (e.g., deed restrictions, City Building Permit Flagging System, etc.) and development of a SMP including a HASP would be implemented to protect against exposure and also control Site use. In addition, this area of concern would be fully delineated by additional investigation work (i.e., test borings, soil sampling, screening for metals with XRF equipment, etc.). [Note: Since it is anticipated that contaminants extend beneath Building #11 in this area, Building #11 should be removed as part of the delineation work.]

- Soil Capping: Under this alternative, the institutional controls, SMP, and delineation work described above would be implemented for this area of concern. In addition, a cap (i.e., 1-foot of clean cover material and/or an impervious paved surface, etc.) would be placed over the area of impacted soil. Periodic monitoring of the area would be conducted to ensure this area is not being disturbed. [Note: Since it is anticipated that contaminants extend beneath Building #11 in this area, Building #11 should be removed as part of the delineation and soil capping work.]

- Soil Removal and Disposal: Under this alternative, the institutional controls, SMP, and delineation work described above would be implemented for this area of concern. In addition, soil with contaminant concentrations above SCGs would be removed and the remaining residual contamination would be covered with clean backfill material. [Note: Since it is anticipated that contaminants extend beneath Building #11 in this area, Building #11 should be removed as part of the delineation and soil removal work.]

7.4.2 AOC2: Silver Recovery Vault Area

- No Action: The no action alternative is included as a procedural requirement and as a baseline to evaluate other alternatives. Under this alternative, remedial and monitoring activities as well as placement of institutional controls at the Site are not implemented. The Silver Vault Recovery Area would remain virtually as it is and change in use would not be limited.

- Institutional Action: Under this alternative (deed restrictions, City Building Permit Flagging System, etc.) and development of a SMP including a HASP would be implemented to protect against exposure to contaminants in the area of the silver recovery vault area.

- Soil/Liquid Removal: Under this alternative, the institutional controls described above would be implemented for this area of concern. Initially, liquids in the silver recovery vault, silver recovery UST, wastewater AST, and associated piping would be removed and disposed of. Also, the silver recovery vault would be allowed to fill with groundwater and a second removal of liquids from the vault would be conducted (i.e., source removal). Subsequent to removal of liquids, soil contaminant concentrations above SCGs would be removed and disposed off-site. Since, the extent of metals impact in the soil has not been fully delineated XRF equipment in conjunction with limited confirmatory soil sampling would be conducted during soil removal work to determine the extent of removal. [Note: It is anticipated that contaminants from this area extend

beneath Building #1. As such, Building #1 should be removed as part of the soil/liquid removal work.]

7.4.3 AOC3: Eastern Portion of Site

- No Action: The no action alternative is included as a procedural requirement and as a baseline to evaluate other alternatives. Under this alternative, remedial and monitoring activities as well as placement of institutional controls for this area of concern are not implemented. The eastern portion of the site would remain virtually as is and change in use would not be limited.

- Institutional Action: Under this alternative, institutional controls (e.g., deed restrictions, City Building Permit Flagging System, etc.) and development of a SMP including a HASP would be implemented to protect against exposure and also control site use.

- Soil Capping: Under this alternative, the institutional controls and SMP described above would be implemented for the eastern portion of the Site. In addition, the area would be delineated and a cap (i.e., 1-foot of clean cover material and/or an impervious paved surface, etc.) would be placed over the area of impacted soil. Periodic monitoring of the area would be conducted to ensure this area is not being disturbed. Soil screening for metals with XRF equipment could be conducted during delineation work.

- Soil Removal and Disposal: Under this alternative, the institutional controls and SMP described above would be implemented for this area of concern. In addition, the areas of impacted soil would be delineated, and soil with contaminant concentrations above SCGs would subsequently be removed and disposed off-site. Soil screening for metals with XRF equipment could be conducted during delineation and soil removal work.

7.4.4 AOC4: Miscellaneous Areas

- No Action: The no action alternative is included as a procedural requirement and as a baseline to evaluate other alternatives. Under this alternative, remedial and monitoring activities as well as placement of institutional controls for this area of concern are not implemented. The Miscellaneous Areas would remain virtually as is and change in use would not be limited.

- Institutional Action: Under this alternative, institutional controls (e.g., deed restrictions, City Building Permit Flagging System, etc.) and development of a SMP including a HASP would be implemented to protect against exposure and also control site use.

- Institutional Action and Monitored Natural Attenuation: Under this alternative, institutional controls (e.g., deed restrictions, City Building Permit Flagging System, etc.) and development of a SMP would be implemented to protect against exposure and control site use. In addition, the existing monitoring wells at the Site would be monitored over time to ensure contaminant concentrations in groundwater are not increasing.

- Soil Capping: Under this alternative, the institutional controls, SMP, and groundwater monitoring described above would be implemented for the Miscellaneous Areas. In

addition, the areas of impacted soil would be delineated and a cap (i.e., 1-foot of clean cover material and/or an impervious paved surface, etc.) would be placed over the areas of impacted soil. Periodic monitoring of the capped areas would be conducted to ensure this area is not being disturbed. Soil screening for metals with XRF equipment could be conducted during delineation work.

- Soil Removal and Disposal: Under this alternative, the institutional controls, SMP and groundwater monitoring described above would be implemented for this area of concern. In addition, the areas of impacted soil would be fully delineated, and subsequently soil with contaminant concentrations above SCGs would subsequently be removed and disposed off-site. Soil screening for metals with XRF equipment could be conducted during delineation and soil removal work.

7.4.5 Asbestos Containing Materials

- No Action: The no action alternative is included as a procedural requirement and as a baseline to evaluate other alternatives. Under this alternative, remedial and monitoring activities as well as placement of institutional controls at the Site are not implemented. The ACMs would remain virtually as is and change in use would not be limited.

- Institutional Action: Under this alternative, institutional controls (deed restrictions, City Building Permit Flagging System, etc.) and maintenance of the Site fencing would be implemented to reduce exposure to asbestos in the buildings at the Site. Long-term monitoring of the fencing would be implemented to ensure that access to the buildings is being restricted.

- Removal and Disposal: Under this alternative, the ACMs in the buildings at the Site would be removed and transported off-site for disposal. [Note: This alternative would be implemented prior to building demolition work.]

7.4.6 Residual Chemicals

- No Action: The no action alternative is included as a procedural requirement and as a baseline to evaluate other alternatives. Under this alternative, remedial and monitoring activities as well as placement of institutional controls at the Site are not implemented. This area of concern would remain virtually as is and change in use would not be limited.

- Institutional Action: Under this alternative, institutional controls (deed restrictions, City Building Permit Flagging System, etc.) and maintenance of the Site fencing would be implemented to reduce potential exposure to residual chemicals in the buildings at the Site. Long-term monitoring of the fencing would be implemented to ensure that access to the buildings is being restricted.

- Removal and Disposal: Under this alternative, the residual chemicals (i.e., waste/process materials in the buildings and impacted building materials) at the Site would be removed, containerized and transported off-site for disposal (i.e., recycling, treatment, and/or landfilling). Also, this alternative includes demolition of the buildings including basements and underground tunnels at the Site.

7.4.7 Beneath Building Footprints

Although not identified in Section 6 as an area of concern, since the site investigation work was not conducted beneath the buildings it is anticipated that unknowns may exist beneath the building footprints (approximately 108,000 square feet). The potential unknowns may include: soil contamination, drywells, USTs/vaults, process piping, etc. As such, below is a list of alternatives for addressing these potential unknowns:

- No Action: The no action alternative is included as a procedural requirement and as a baseline to evaluate other alternatives. Under this alternative the buildings at the Site would be demolished; however, remedial and monitoring activities at the time of building removal would not be implemented. Subsequent to demolition of the buildings, the Site would remain virtually as it is and change in use would not be limited.

- Field Screening/Sampling and Remediation of Underlying Soil: Under this alternative, during the removal of building foundations, basements and tunnels screening of the underlying soil would be conducted in order to evaluate subsurface conditions for the potential of contamination. In addition, soil samples would be collected in areas of stained soil, USTs, drywells, etc. Contamination encountered that requires corrective actions would be addressed to the satisfaction of regulatory agencies.

8.0 DETAILED EVALUATION OF ALTERNATIVES

8.1 Introduction

The alternatives identified in Section 7.4 for addressing the Areas of Concern are further evaluated in this section, and these alternatives are evaluated relative to the remediation goals presented in Section 7.2.2.

8.2 Individual Evaluation of Alternatives

Each of the alternatives identified in Section 7.4 are further evaluated in detail in this section of the report.

8.2.1 AOC1: East of Chemical Lab Building #11

8.2.1.1 No Action

Description

Under this alternative the soil and groundwater in the area East of Chemical Lab Building #11 would remain as is and future Site use and development would not be limited. In addition, remedial and monitoring activities as well as placement of institutional controls at the Site would not be implemented.

Assessment

This alternative may not be protective of human health or the environment. Soil samples collected from this area contained concentrations of SVOCs and metals above NYSDEC TAGM 4046 RSCOs and groundwater samples from Well 06 contained concentrations of SVOCs above TOGS 1.1.1 guidance values. In addition, the extent of metal and SVOC contamination has not been fully delineated.

With the exception of possible natural attenuation of SVOCs, this alternative would not result in the reduction of contaminant toxicity, mobility or volume and therefore would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs are not applicable under the no action alternative.

There would be no increased short-term risks associated with the no action alternative for the area East of Chemical Lab Building #11 since remedial activities are not implemented; however, the alternative may not be effective in the long-term and is not a permanent remedy.

Based on the findings of the studies performed to date and without delineating the extent of contaminants, it is anticipated that this alternative would not be acceptable to the community or in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the no action alternative for this area of concern is not feasible since remedial, institutional, monitoring, etc. activities will not be implemented. The costs for this alternative are summarized below.

Present Worth.....$ 0
Capital/Initial Cost.....$ 0
O&M/Annual Present Cost.....$ 0

8.2.1.2 Institutional Action with Delineation

Description

Under this alternative, institutional controls (deed restrictions, City Building Permit Flagging System, etc.) would be implemented, a SMP (including HASP) would be developed, and the area of impacted soil would be delineated. The SMP would include procedures for properly handling and disposing of impacted media (e.g., soil, etc.) in this area should it be disturbed in the future. Since impacted soil appears to extend beneath Building #11, the cost for removing ACMs, residual chemicals and equipment from Building #11 and demolition of Building #11 is included as part of this alternative. The delineation work would include advancing test borings and collecting/analyzing soil samples in order to define the extent of the impacted soil. The cost estimate presented herein includes up to two days of test borings and analytical laboratory testing of soil samples for SVOCs and metals.

Assessment

This alternative may not be protective of human health or the environment. Soil samples collected from this area contained concentrations of SVOCs and metals above NYSDEC TAGM 4046 RSCOs and a groundwater sample from Well 06 contained concentrations of SVOCs and metals above TOGS 1.1.1 guidance values. This alternative would determine the extent of impacted soil through additional investigation work and would implement controls (institutional actions, SMP, etc.) to reduce ground intrusive work in this area.

With the exception of possible decreases in the concentration of SVOCs through natural attenuation processes, this alternative would not result in the reduction of contaminant toxicity, mobility or volume; and, therefore would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs would be applicable during additional investigation work and intrusive activities associated with future redevelopment and operation of the Site (i.e., proper PPE, characteristics and disposal of study derived waste or displaced materials, etc.).

There would be no increased short-term risks associated with the institutional action alternative for AOC1 since remedial activities are not implemented. This alternative

should be effective in the long-term; however, this alternative may not be a permanent remedy.

Based on the findings of the studies performed to date, it is anticipated that this alternative may be acceptable to the community due to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the institutional action alternative for AOC1 may be feasible. The costs for this alternative are summarized below and detailed in Table 2 included in Appendix H.

Present Worth	$ 337,030
Capital/Initial Cost	$ 337,030
O&M/Annual Present Cost	$ 0

8.2.1.3 Soil Capping

Description

Under this alternative, the institutional controls, SMP, and delineation work (including removal of ACMs, residual chemicals and building equipment and building demolition work for Building #11) identified above would be implemented. Subsequent to defining the extent of impacted soil, the area would be capped (i.e., 1-foot of clean cover material and/or an impervious paved surface, etc.). This alternative would also include periodic inspections of the cap to monitor the condition of the cover material (i.e., long-term monitoring). For the purpose of this evaluation, it is assumed that approximately 5,000 square feet of soil would require cover material (i.e., approximately 200 cubic yards of cover material), refer to Figure 18 for approximate location. The actual area requiring cover material would depend on the results of the delineation work. The SMP would include procedures for properly handling and disposing of impacted media (e.g., soil, etc.) in this area should it be disturbed in the future. [Note: The planned redevelopment of the Site may disturb the soil cap.]

Assessment

This alternative should be protective of human health and the environment. This alternative would determine the extent of impacted soil, which would subsequently be capped to reduce potential migration. Long-term monitoring would be conducted to ensure the integrity of the soil cap.

With the exception of possible decreases in the concentration of SVOCs through natural attenuation processes, this alternative would not result in the reduction of contaminant toxicity or volume; however, the mobility of the contaminants should decrease due to the cover material. Therefore, this alternative would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs

would be applicable during the delineation work (i.e., proper PPE, disposal of study derived waste, etc.) and during intrusive activities associated with future redevelopment and operation of the Site during placement of the cap.

There may be some increased short-term risks associated with the delineation work, capping the area of impacted soil and during intrusive activities associated with future redevelopment and site operations. This alternative should be effective in the long-term with periodic monitoring of the cover material; however, this alternative is not a permanent remedy.

Based on the findings of the studies performed to date, it is anticipated that this alternative may be acceptable to the community due to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the capping alternative for AOC1 may be feasible. The costs for this alternative are summarized below and detailed in Table 3 included in Appendix H.

Present Worth	$ 416,770
Capital/Initial Cost	$ 407,500
O&M/Annual Present Cost	$ 9,270

8.2.1.4 Soil Removal and Disposal

Description

Under this alternative, the institutional controls and delineation work (including removal of ACMs, residual chemicals and building equipment and building demolition work for Building #11) identified above would be implemented. Subsequent to defining the extent of impacted soil, soil contamination with concentrations above SCGs would be removed and disposed of off-site in accordance with applicable regulations. For the purpose of this evaluation, it is assumed that a 5,000 square foot area will require removal of soil up to 2 feet in depth. As such, approximately 370 cubic yards of soil (i.e., 670 tons) would require removal and disposal. [Note: The actual volume of soil would be based on the results of the delineation work.] The residual contamination underlying the soil that is removed would be covered with clean backfill material.

Assessment

This alternative should be protective of human health and the environment. Soil with contaminant concentrations above SCGs would be removed and disposed of off-site. Subsequently, the underlying residual contamination would be covered with clean backfill.

This alternative would result in the reduction of the toxicity, mobility, and volume of contaminants in the soil. Therefore, the area of soil removal would be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is

located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs would be applicable during the additional investigation work (i.e., proper PPE, disposal of study derived waste, etc.) and during the removal of impacted soil.

There would be an increase in short-term risks associated with the delineation work and soil removal work. This alternative should be effective in the long-term. The soil removal and disposal alternative would be a permanent remedy.

Based on the findings of the studies performed to date, it is anticipated that this alternative would be acceptable to the community in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the soil removal and disposal alternative for AOC1 is feasible. The costs for this alternative are summarized below and detailed in Table 4 included in Appendix H.

Present Worth	$ 481,820
Capital/Initial Cost	$ 481,820
O&M/Annual Present Cost	$ 0

8.2.2 AOC2: Silver Recovery Vault Area

8.2.2.1 No Action

Description

Under this alternative the impacted soil and groundwater from the Silver Recovery Vault Area identified in Section 6.2.1 would remain as is and future Site use and development would not be limited. In addition, remedial and monitoring activities as well as placement of institutional controls at the Site are not implemented.

Assessment

This alternative may not be protective of human health or the environment. Soil and groundwater samples collected from this area contained concentrations of SVOCs and metals above SCGs.

With the exception of potential natural attenuation of SVOCs and dispersion of metals, this alternative would not result in the reduction of contaminant toxicity, mobility or volume and therefore would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs are not applicable under the no action alternative.

There would be no increased short-term risks associated with the no action alternative for the Silver Recovery Vault Area since remedial activities are not implemented;

however, long-term effectiveness and permanence would not be adequately monitored.

Based on the findings of studies performed to date, it is anticipated that this alternative would not be acceptable to the community or in relation to the anticipated planned future industrial redevelopment use of the Site.

Of the alternatives being considered, the no action alternative for this area of concern is not feasible since remedial, institutional, monitoring, etc. activities will not be implemented. The costs for this alternative are summarized below.

Present Worth..... $ 0
Capital/Initial Cost..... $ 0
O&M/Annual Present Cost..... $ 0

8.2.2.2 Institutional Action

Description

Under this alternative, institutional controls (deed restrictions, City Building Permit Flagging System, etc.) would be implemented, and a SMP (including HASP) would be developed. The SMP would include procedures for properly handling and disposing of impacted media (e.g., soil, etc.) in the Silver Recovery Vault Area should this area be disturbed in the future.

Assessment

This alternative may be protective of human health and the environment. The institutional controls and SMP should decrease potential risks associated with the Silver Recovery Vault Area. The concentration of SVOCs may decrease over time.

With the exception of possible decreases in the concentration of SVOCs through natural attenuation processes, this alternative would not result in the reduction of contaminant toxicity, mobility or volume; and, therefore would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs are not applicable under the institutional action alternative since active remediation is not being conducted.

There would be no increased short-term risks associated with the institutional action alternative for the Silver Recovery Vault Area at the Site since remedial activities would not be implemented. This alternative should be effective in the long-term since procedures for future ground intrusive work would be in place; however, since the source area is not being addressed, potential migration of groundwater contaminants is a concern. This alternative may not be a permanent remedy.

Based on the findings of studies performed to date, it is anticipated that this alternative may be acceptable to the community due to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the institutional action alternative for the Silver Recovery Vault Area of the Site is feasible. The costs for this alternative are summarized below and detailed in Table 5 included in Appendix H.

Present Worth..... $ 13,200
Capital/Initial Cost..... $ 13,200
O&M/Annual Present Cost..... $ 0

8.2.2.3 Soil/Liquid Removal

Description

Under this alternative, the institutional controls and SMP identified above would be implemented. However, active remediation would also be implemented. It is recommended that Building #1 be removed prior to soil/liquid removal for AOC2. As such, the cost to remove ACMs, residual chemicals, and equipment from Building #1 is included. In addition, the cost to demolish Building #1 is also included. Initially, liquids in the silver recovery vault, silver recovery UST, wastewater tank AST and associated piping for each will be pumped out and disposed off-site. The silver recovery vault will be allowed to re-fill with groundwater and subsequently be pumped out again (i.e., to act as a groundwater source area removal). For the purposes of the cost estimate, it is assumed that approximately 30,000 gallons of liquid will be disposed off-site as hazardous waste (i.e., due to cadmium and/or silver content).

Subsequent to pumping out the silver recovery vault for the second time, the silver recovery vault will be removed and soil that exceeds SCGs will be excavated and disposed off-site. Since soil contamination that exceeds SCGs in the area of the silver recovery vault has not been delineated, XRF equipment will be used during the soil removal work to determine the extent of excavation. In addition, it is assumed that during removal of the silver recovery UST, wastewater AST, and the associated piping soil impacted with metals will also be encountered. The XRF equipment will also be used to assist in the determination of the extent of soil removal in these areas. For the purpose of this evaluation, it is assumed that approximately 400 tons of soil will be removed from the silver recovery pit area, 150 tons of soil will be removed from the silver recovery UST area, 600 tons of soil will be removed from the 10,000-gallon wastewater AST area, and 55 tons of soil will be removed from around the silver recovery piping. As such a total of approximately 1,210 tons of soil from the above areas will require disposal as hazardous waste. [Note: This is only a portion of the area shown AOC 2 on Figure 18.] To confirm field results of the XRF equipment, some confirmatory soil sampling will also be collected and tested at an analytical laboratory.

Subsequent to removal of impacted soil, the areas would be backfilled. During backfilling of the silver recovery vault excavation, groundwater monitoring points would be installed. These groundwater monitoring points would be used to evaluate the concentrations of metals in groundwater in this area after removal of the source. [Note: Subsequent groundwater monitoring is addressed in alternatives for AOC4: Miscellaneous Areas.]

Assessment

This alternative should be protective of human health and the environment. Soil concentrations that exceed SCGs would be removed and disposed of off-site.

This alternative would result in the reduction of the toxicity, mobility, and volume of contaminants in the soil. Therefore, this alternative would be in compliance with chemical-specific SCGs for soil. The removal of source area groundwater should reduce the volume of impacted groundwater. Groundwater that continues to exceed SCGs would be monitored by a long-term groundwater sampling program (refer to alternatives for AOC4). Location-specific SCGs are met since the impacted soil would be removed from the Site. Action-specific SCGs would be applicable during the removal of impacted soil (i.e., proper PPE, disposal of study derived waste, etc.).

There would be an increase in short-term risks associated with the soil removal work for this alternative. This alternative would be permanent in terms of soil remediation and effective in the long-term.

Based on the findings of studies performed to date, it is anticipated that this alternative may be acceptable to the community and for the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the soil/liquid removal and disposal alternative for AOC2 is feasible. The costs for this alternative are summarized below and detailed in Table 6 included in Appendix H.

Present Worth	$ 555,160
Capital/Initial Cost	$ 555,160
O&M/Annual Present Cost	$ 0

8.2.3 AOC3: Eastern Portion of Site

8.2.3.1 No Action

Description

Under this alternative, the impacted soil and groundwater from the Eastern Portion of the Site identified in Section 6.2.1 would remain as is and future Site use and development would not be limited. In addition, remedial and monitoring activities as well as placement of institutional controls at the Site are not implemented.

Assessment

This alternative may not be protective of human health or the environment. Soil and groundwater samples collected from the Eastern Portion of the Site detected concentrations of VOCs, SVOCs, and metals above SCGs. The concentration of VOCs and SVOCs may decrease over time; however, this alternative does not include long-term monitoring.

With the exception of potential natural attenuation of VOCs and SVOCs, this alternative would not result in the reduction of contaminant toxicity, mobility or volume and therefore would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs are not applicable under the no action alternative.

There would be no increased short-term risks associated with the no action alternative for the Eastern Portion of the Site since remedial activities are not implemented; however, long-term effectiveness and permanence would not be adequately monitored.

Based on the findings of studies performed to date, it is anticipated that this alternative would not be acceptable to the community or in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the no action alternative for AOC3 is not feasible since remedial, institutional, monitoring, etc. activities will not be implemented. The costs for this alternative are summarized below.

Present Worth..... $ 0
Capital/Initial Cost..... $ 0
O&M/Annual Present Cost..... $ 0

8.2.3.2 Institutional Action

Description

Under this alternative, institutional controls (deed restrictions, City Building Permit Flagging System, etc.) would be implemented, and a SMP (including HASP) would be developed. The SMP would include procedures for properly handling and disposing of impacted media (e.g., soil, etc.) in the Eastern Portion of the Site should these areas be disturbed in the future.

Assessment

This alternative may be protective of human health and the environment. The institutional controls and SMP should decrease potential risks associated with the

Eastern Portion of the Site. The concentration of VOCs and SVOCs may decrease over time.

With the exception of possible decreases in the concentration of VOCs and SVOCs through natural attenuation processes, this alternative would not result in the reduction of contaminant toxicity, mobility or volume; and, therefore would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs are not applicable under the institutional action alternative since active remediation is not being conducted.

There would be no increased short-term risks associated with the institutional action alternative for the Eastern Portion of the Site since remedial activities would not be implemented. This alternative should be effective in the long-term since procedures for future ground intrusive work would be in place. This alternative may not be a permanent remedy.

Based on the findings of studies performed to date, it is anticipated that this alternative may be acceptable to the community due to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the institutional action alternative for AOC3 is feasible. The costs for this alternative are summarized below and detailed in Table 7 included in Appendix H.

Present Worth	$ 13,200
Capital/Initial Cost	$ 13,200
O&M/Annual Present Cost	$ 0

8.2.3.3 Capping of Impacted Soil

Description

Under this alternative, the institutional controls and SMP (including HASP) described above would be implemented. In addition, the areas of impacted soil would be delineated. For the purpose of this evaluation, it is assumed that three days of test borings/test pits would be conducted in a phased approach in order to delineate the Eastern Portion of the Site. Soil samples would be collected and analyzed for VOCs, SVOCs, and metals. Soil screening for metals with XRF equipment would also be conducted. Although the extent of the capped areas would depend on the results of the delineation work, it is currently assumed that a total of 20,000 square feet of soil would require cover material. [Note: This is only a portion of the area shown for AOC3 on Figure 18.] Subsequent to the delineation work an impervious paved surface or approximately 1-foot of 'clean' cover material would be placed over the areas of soil with contaminant concentrations above SCGs. As such, for the purpose of this estimate approximately 750 cubic yards of cover material would be placed.

Assessment

This alternative should be protective of human health and the environment. This alternative would determine the extent of impacted soil areas through additional investigation work. Subsequently, these areas would be capped to reduce potential migration and monitored over time to ensure the integrity of the cap.

With the exception of possible decreases in the concentration of VOCs and SVOCs through natural attenuation processes, this alternative would not result in the reduction of contaminant toxicity or volume. Therefore, this alternative would not be in compliance with chemical-specific SCGs. However, capping the impacted soil areas should reduce the mobility of contaminants. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs would be applicable during the delineation work (i.e., proper PPE, disposal of study derived waste, etc.) and placement of the cap.

There would be some short-term risks associated with the delineation work and placement of cap materials. This alternative should be effective in the long-term; however, this alternative is not a permanent remedy.

Based on the findings of studies performed to date, it is anticipated that this alternative may be acceptable to the community due to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the Soil Capping alternative for AOC3 may be feasible. The costs for this alternative are summarized below and detailed in Table 8 included in Appendix H.

Present Worth	$	119,180
Capital/Initial Cost	$	105,280
O&M/Annual Present Cost	$	13,900

8.2.3.4 Soil Removal and Disposal

Description

Under this alternative, the institutional controls, SMP, and delineation work identified above would be implemented. Subsequent to defining the extent of soil that exceeds SCGs, this soil would be removed and disposed of off-site. Field screening for metals with XRF equipment, and confirmatory soil sampling and analysis would be conducted as part of the soil removal work. For the purpose of this evaluation, it is assumed that an approximate 20,000 square foot area will require removal up to 4.5 feet in depth. [Note: This is only a portion of the area shown for AOC 3 on Figure 18.] As such, it is estimated that 3,300 cubic yards of soil (i.e., approximately 6,000 tons) would require removal and disposal. [Note: The actual removal area and volume of soil will be defined based on the delineation work.]

Assessment

This alternative should be protective of human health and the environment. Soil concentrations that exceed SCGs (e.g., NYSDEC TAGM 4046 RSCOs) would be removed and disposed off-site.

This alternative would result in the reduction of the toxicity, mobility, and volume of contaminants in the soil. Therefore, this would be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the impacted soil would be removed from the Site. Action-specific SCGs would be applicable during the delineation (i.e., proper PPE, disposal of study derived waste, etc.) and removal of impacted soil.

There would be an increase in short-term risks associated with the delineation and soil removal work for this alternative. This alternative would be permanent in terms of soil remediation and effective in the long-term.

Based on the findings of studies performed to date, it is anticipated that this alternative may be acceptable to the community and for the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the soil removal and disposal alternative for AOC3 is feasible. The costs for this alternative are summarized below and detailed in Table 9 included in Appendix H.

Present Worth	$	513,840
Capital/Initial Cost	$	513,840
O&M/Annual Present Cost	$	0

8.2.4 AOC4: Miscellaneous Areas

8.2.4.1 No Action

Description

Under this alternative the impacted soil from the Miscellaneous Areas and site-wide groundwater identified in Section 6.2.1 would remain as is and future Site use and development would not be limited. In addition, remedial and monitoring activities as well as placement of institutional controls at the Site are not implemented.

Assessment

This alternative may not be protective of human health or the environment. Soil samples collected from the Miscellaneous Areas and site-wide groundwater samples detected concentrations of VOCs, SVOCs, and/or metals above SCGs. The concentration of metals will not decrease over time and this alternative does not include long-term monitoring.

This alternative would not result in the reduction of contaminant toxicity, mobility or volume and therefore would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs are not applicable under the no action alternative.

There would be no increased short-term risks associated with the no action alternative for the Miscellaneous Areas since remedial activities are not implemented; however, long-term effectiveness and permanence would not be adequately monitored.

Based on the findings of studies performed to date, it is anticipated that this alternative may not be acceptable to the community or in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the no action alternative for AOC4 may not be feasible since remedial, institutional, monitoring, etc. activities will not be implemented. The costs for this alternative are summarized below.

Present Worth..... $ 0
Capital/Initial Cost..... $ 0
O&M/Annual Present Cost..... $ 0

8.2.4.2 Institutional Action

Description

Under this alternative, institutional controls (deed restrictions, City Building Permit Flagging System, etc.) would be implemented, and a SMP (including HASP) would be developed. The SMP would include procedures for properly handling and disposing of impacted media (e.g., soil, etc.) in the Miscellaneous Areas should these areas be disturbed in the future.

Assessment

This alternative may be protective of human health and the environment. The institutional controls and SMP should decrease potential risks associated with the Miscellaneous Areas.

This alternative would not result in the reduction of contaminant toxicity, mobility or volume; and, therefore would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs are not applicable under the institutional action alternative since active remediation is not being conducted.

There would be no increased short-term risks associated with the institutional action alternative for the Miscellaneous Areas at the Site since remedial activities would not

be implemented. This alternative should be effective in the long-term since procedures for future ground intrusive work would be in place; however, potential migration of groundwater contaminants would not be monitored. This alternative may not be a permanent remedy.

Based on the findings of studies performed to date, it is anticipated that this alternative may be acceptable to the community due to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the institutional action alternative for AOC4 is feasible. The costs for this alternative are summarized below and detailed in Table 10 included in Appendix H.

Present Worth	$ 13,200
Capital/Initial Cost	$ 13,200
O&M/Annual Present Cost	$ 0

8.2.4.3 Institutional Action and Monitored Natural Attenuation

Description

Under this alternative, the institutional controls and SMP described above would be implemented. As part of this alternative, a long-term groundwater sampling program would be developed for monitoring natural attenuation across the Site. For the purpose of this evaluation, it is assumed that the existing ten monitoring wells would be used for quarterly field monitoring. The quarterly monitoring would include collection and analysis of natural attenuation monitoring parameters (i.e., methane, DO, ORP, sulfate, iron, and nitrate). Also, groundwater flow direction and water quality (i.e., pH, conductivity, etc.) would be evaluated. In addition, annual groundwater samples would be collected and analyzed for VOCs, SVOCs, and/or metals to evaluate contaminant concentrations over time. It is anticipated that the long-term monitoring would be conducted for a period of 5-years.

Assessment

This alternative may be protective of human health and the environment. The institutional controls and SMP should decrease potential risks associated with the Miscellaneous Areas. Also, the contaminant concentrations in groundwater over time would be monitored.

The potential reduction (via natural attenuation) of contaminant toxicity, mobility and volume would be monitored. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs would be applicable during groundwater sampling work.

There would be no increased short-term risks associated with this alternative for the Miscellaneous Areas at the Site since active remediation would not be implemented.

This alternative should be effective in the long-term since procedures for future ground intrusive work would be in place and potential migration of groundwater contaminants would be monitored. This alternative may not be a permanent remedy.

Based on the findings of studies performed to date, it is anticipated that this alternative may be acceptable to the community due to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the institutional action and monitored natural attenuation alternative for the AOC4 is feasible. The costs for this alternative are summarized below and detailed in Table 11 included in Appendix H.

Present Worth	$ 155,470
Capital/Initial Cost	$ 16,800
O&M/Annual Present Cost	$ 138,670

8.2.4.4 Capping of Impacted Soil and Monitored Natural Attenuation

Description

Under this alternative, the institutional controls, SMP (including HASP), and long-term groundwater monitoring described above would be implemented and the areas of impacted soil would be delineated. Subsequent to the delineation work, an impervious paved surface and/or approximately 1-foot of 'clean' cover material would be placed over the areas soil with contaminant concentrations above SCGs. For the purpose of this evaluation, it is assumed that two days of test borings would be conducted in order to delineate the Miscellaneous Areas. Although the extent of the capped areas would depend on the results of the delineation work, it is currently assumed that a total of 8,000 square feet of soil would be capped.

Assessment

This alternative should be protective of human health and the environment. This alternative would determine the extent of impacted soil areas through additional investigation work. Subsequently, these areas would be capped to reduce potential migration and monitored over time to ensure that these areas are not being disturbed. In addition, long-term groundwater sampling would monitor contaminant concentrations and migration in the groundwater over time.

The potential reduction (via natural attenuation) of contaminant toxicity, mobility and volume would be monitored. However, placing cap material over the impacted soil areas should reduce the mobility of contaminants. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs would be applicable during the delineation work (i.e., proper PPE, disposal of study derived waste, etc.), groundwater monitoring, and placement of cover materials.

There would be some short-term risks associated with the delineation work and placement of cap materials. This alternative should be effective in the long-term; however, this alternative is not a permanent remedy.

Based on the findings of studies performed to date, it is anticipated that this alternative may be acceptable to the community due to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the capping and monitored natural attenuation alternative for AOC4 may be feasible. The costs for this alternative are summarized below and detailed in Table 12 included in Appendix H.

Present Worth	$	226,470
Capital/Initial Cost	$	73,900
O&M/Annual Present Cost	$	152,570

8.2.4.5 Soil Removal and Disposal and Monitored Natural Attenuation

Description

Under this alternative, the institutional controls, SMP, delineation work, and long-term groundwater monitoring identified above would be implemented. Subsequent to defining the extent of soil that exceeds SCGs, this soil would be removed and disposed of off-site. For the purpose of this evaluation, it is assumed that up to 8,000 square feet of soil will require removal up to 4 feet in depth. As such, approximately 1,200 cubic yards of soil (i.e., approximately 2,160 tons) would require removal and disposal. [Note: The actual area and volume of soil to be removed would be defined by the delineation work.] Subsequent to removing impacted soil, confirmatory soil samples would be collected/tested.

Assessment

This alternative should be protective of human health and the environment. Soil concentrations that exceed SCGs would be removed and disposed of off-site.

This alternative would result in the reduction of the toxicity, mobility, and volume of contaminants in the soil. Therefore, this would be in compliance with chemical-specific SCGs. Groundwater that exceed SCGs would be monitored by the long-term groundwater sampling program. Location-specific SCGs are met since the impacted soil would be removed from the Site. Action-specific SCGs would be applicable during the delineation (i.e., proper PPE, disposal of study derived waste, etc.) and removal of impacted soil.

There would be an increase in short-term risks associated with the delineation and soil removal work for this alternative. This alternative would be permanent for soil and effective in the long-term.

Based on the findings of studies performed to date, it is anticipated that this alternative may be acceptable to the community and for the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the soil removal and disposal alternative for AOC4 is feasible. The costs for this alternative are summarized below and detailed in Table 13 included in Appendix H.

Present Worth	$ 376,220
Capital/Initial Cost	$ 237,550
O&M/Annual Present Cost	$ 138,670

8.2.5 AOC5: Asbestos Containing Materials

8.2.5.1 No Action

Description

Under this alternative the ACMs in the buildings at the Site remain as is and future Site use and development would not be limited (i.e., including building demolition). In addition, remedial and monitoring activities as well as placement of institutional controls at the Site are not implemented.

Assessment

This alternative may not be protective of human health or the environment. Currently, the ACMs in the buildings at the Site are generally contained within the buildings; however, deteriorating building conditions over time would facilitate migration (wind, surface water, etc.) of airborne asbestos fibers to downgradient locations. In addition, the ACMs are in damaged condition and would be a health concern should the buildings be demolished.

This alternative would not result in the reduction of contaminant toxicity, mobility or volume and therefore would not be in compliance with chemical-specific SCGs. Since large amounts of the ACMs are in damaged condition, location-specific SCGs are not met. Action-specific SCGs are not applicable under the no action alternative.

There would be no increased short-term risks associated with the no action alternative since remedial activities are not implemented; however, the alternative is not effective in the long-term and is not a permanent remedy.

Based on the findings of studies performed to date it is anticipated that this alternative would not be acceptable to the community or in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the no action alternative for AOC5 is not feasible since remedial, institutional, monitoring, etc. activities will not be implemented. The costs for this alternative are summarized below.

Present Worth..... .....$ 0
Capital/Initial Cost..... .....$ 0
O&M/Annual Present Cost.....$ 0

8.2.5.2 Institutional Action

Description

Under this alternative, institutional controls (deed restrictions, City Building Permit Flagging System, etc.) and maintenance of fencing would be implemented to protect against exposure to ACMs in the buildings at the Site. Long-term monitoring of the fence and building conditions would be implemented to restrict access to the buildings.

Assessment

This alternative may not be protective of human health or the environment. The ACMs are currently contained in the buildings at the Site; however, deteriorating building conditions over time would facilitate migration (i.e., wind, surface water, etc.) of asbestos fibers to downgradient locations. In addition, ACMs in the building are in damaged condition. Some additional control would be realized by limiting access to the Site with proper fencing.

This alternative would not result in the reduction of asbestos toxicity, mobility or volume; thus would not be in compliance with chemical-specific SCGs. Since large amounts of the ACMs are in damaged condition, location-specific SCGs are not met. Action-specific SCGs are not applicable under the institutional action alternative.

There would be no increased short-term risks associated with the institutional action alternative for the ACMs since remedial activities are not implemented; however, this alternative would not be effective in the long-term and is not a permanent remedy for this area of concern.

Based on the findings of studies performed to date it is anticipated that this alternative would not be acceptable to the community or in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the institutional action alternative for AOC5 is not feasible since remedial activities will not be implemented. The costs for this alternative are summarized below and detailed in Table 14 included in Appendix H.

Present Worth.....$ 20,150
Capital/Initial Cost.....$ 13,200
O&M/Annual Present Cost.....$ 6,950

8.2.5.3 Removal and Disposal

Description

Under this alternative, the ACMs in the buildings at the Site would be removed and disposed off-site. It is anticipated that variances would be obtained in order to remove and dispose of the ACMs and debris contaminated with ACMs throughout the buildings. This alternative assumes that debris throughout the buildings would be treated as ACMs during removal. [Note: The cost for removal and disposal of ACMs in Buildings #1 and #11 are not included in this alternative. These costs are included in alternatives for AOC1 (Building #11) and AOC2 (Building #1).]

Assessment

This alternative should be protective of human health and the environment. The ACMs in the buildings at the Site would be permanently removed from the Site.

This alternative would result in the reduction of contaminant toxicity, mobility and volume; thus, would be in compliance with chemical-specific SCGs. Location-specific SCGs should be met since the ACMs would be removed from the Site. During the removal and transportation work action-specific SCGs would be applicable including OSHA regulations, DOT regulations, etc.

There would be an increase in short-term risks associated with this alternative since remedial activities would be implemented. This alternative would be effective in the long-term, and this alternative is a permanent remedy.

It is anticipated that this alternative would be acceptable to the community and in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the removal and disposal alternative for AOC5 is the most feasible. The costs for this alternative are summarized below and detailed in Table 15 included in Appendix H.

Present Worth	$ 1,169,380
Capital/Initial Cost	$ 1,169,380
O&M/Annual Present Cost	$ 0

8.2.6 AOC6: Residual Chemicals

8.2.6.1 No Action

Description

Under this alternative, Residual Chemicals in the buildings at the Site remain as is and future Site use and development would not be limited. In addition, the remedial

and monitoring activities as well as placement of institutional controls at the Site are not implemented.

Assessment

This alternative may not be protective of human health or the environment. The existing waste/process materials in the buildings at the Site are currently contained in piping, tanks, sumps, etc.; however, deteriorating building conditions over time would facilitate leaching/spillage of these contaminants into the subsurface.

This alternative would not result in the reduction of contaminant toxicity, mobility or volume; thus, would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs are not applicable under the no action alternative.

There would be no increased short-term risks associated with the no action alternative for the Residual Chemicals since remedial activities are not implemented. This alternative would not be effective in the long-term or be a permanent remedy.

Based on the findings of studies performed to date, it is anticipated that this alternative would not be acceptable to the community or in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the no action alternative for AOC6 is not feasible since remedial, institutional, monitoring, etc. activities will not be implemented. The costs for this alternative are summarized below.

Present Worth.....$ 0
Capital/Initial Cost.....$ 0
O&M/Annual Present Cost.....$ 0

8.2.6.2 Institutional Action

Description

Under this alternative, institutional controls (deed restrictions, City Building Permit Flagging System, etc.) and maintenance of fencing would be implemented to reduce exposure to Residual Chemicals in the buildings at the Site. Long-term monitoring of the fence and building conditions would be implemented to ensure that access to the buildings is being restricted.

Assessment

This alternative may not be protective of human health or the environment. The Residual Chemicals at the Site are currently contained in piping, tanks, sumps, etc.; however, deteriorating building conditions over time would facilitate

leaching/spillage of these contaminants into the subsurface. Some additional control would be realized by limiting access to the Site with proper fencing.

This alternative would not result in the reduction of contaminant toxicity, mobility or volume; thus, would not be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. Action-specific SCGs are not applicable under the institutional action alternative.

There would be no increased short-term risks associated with the institutional action alternative for the Residual Chemicals since remedial activities are not implemented; however, this alternative would not be effective in the long-term and would not be a permanent remedy for this area of concern.

Based on the findings of studies performed to date it is anticipated that this alternative would not be acceptable to the community or in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the institutional action alternative for AOC6 is not feasible since remedial activities will not be implemented. The costs for this alternative are summarized below and detailed in Table 16 included in Appendix H.

Present Worth.....$ 20,150
Capital/Initial Cost.....$ 13,200
O&M/Annual Present Cost.....$ 6,950

8.2.6.3 Removal and Disposal

Description

Under this alternative, the Residual Chemicals (i.e., waste/process materials and impacted building materials) would be removed and recycled, treated, and/or disposed. As identified in Section 4.4.2, some of the waste/process materials and impacted building materials will require disposal as a hazardous waste. The remaining materials would require disposal as a solid waste. In addition, building equipment would be removed and disposed or recycled. Subsequent to removing these materials and ACMs, the building demolition work could be conducted. This alternative includes the cost for the building demolition work. [Note: This alternative does not include the cost for removal/disposal of residual chemicals and equipment for buildings #1 or #11 or demolition of buildings #1 or #11. These costs are included in alternatives for AOC1 (Building #11) and AOC2 (Building #1).]

Assessment

This alternative should be protective of human health and the environment. The Residual Chemicals would be permanently removed from the Site. In addition, the buildings would be demolished and the Site could be redeveloped.

This alternative would result in the reduction of contaminant toxicity, mobility and volume; thus, would be in compliance with chemical-specific SCGs. Location-specific SCGs are met since the Site is located within an industrial area and the contamination is not adversely impacting human health or environmentally sensitive areas. During the removal and transportation of the Residual Chemicals and building demolition work action-specific SCGs would be applicable including OSHA regulations, DOT regulations, etc.

There would be an increase in short-term risks associated with this alternative since remedial activities would be implemented. This alternative would be effective in the long-term and a permanent remedy.

It is anticipated that this alternative would be acceptable to the community and in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, the removal and disposal alternative for AOC6 is the most feasible. The costs for this alternative are summarized below and detailed in Table 17 included in Appendix H.

Present Worth	$ 1,123,880
Capital/Initial Cost	$ 1,123,880
O&M/Annual Present Cost	$ 0

8.2.7 Beneath Building Footprints

8.2.7.1 No Action

Description

Under this alternative no action would be taken at the time the buildings at the Site are demolished. The potential unknown contamination, materials, etc. beneath the buildings would remain as is and future Site use and development would not be limited. In addition, the remedial and monitoring activities as well as placement of institutional controls at the Site are not implemented.

Assessment

This alternative may not be protective of human health or the environment. Site investigation work did not evaluate conditions beneath the building footprints and unknown piping, tanks, soil contamination, etc. could be encountered.

This alternative would not result in the reduction of potential contaminant toxicity, mobility or volume; thus, may not be in compliance with chemical-specific SCGs should impacted media exist. Location-specific SCGs are met since the Site is located within an industrial area and it is not anticipated that potential contamination beneath the buildings would impact environmentally sensitive areas; however,

without proper monitoring, potential contamination could impact the construction workers. Action-specific SCGs are not applicable under the no action alternative.

There may be increased short-term risks associated with the no action alternative for the potential unknown contamination beneath the buildings. Long-term effectiveness and permanence is unknown.

Based on the findings of studies performed to date, it is anticipated that this alternative would not be acceptable to the community or in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered the no action alternative for the potential contamination beneath the buildings is not feasible since proper monitoring and potential remediation activities would not be implemented. The costs for this alternative are summarized below.

Present Worth	$ 0
Capital/Initial Cost	$ 0
O&M/Annual Present Cost	$ 0

8.2.7.2 Field Screening/Sampling/Removal of Underlying Soil

Description

Under this alternative, field screening would be conducted at the time of the removal of building footers, basements, and tunnels. In addition, sampling of potential unknown soil contamination, UST contents, piping contents, etc. would be conducted as deemed necessary. It is anticipated that field screening activities would include monitoring with a PID, particulate meter, and XRF equipment. In the event that contamination and/or waste materials are identified, appropriate measures would be implemented (i.e., soil removal, UST removal, etc.). [Note: In the event that unknowns are encountered, the NYSDEC would be contacted prior to implementing remedial measures.] For the purpose of this evaluation, it has been assumed that up to 50 soil samples for VOCs, SVOCs, and Metals will be collected and submitted for analytical laboratory testing; however, the actual testing program would be depend on field observations. In addition, to develop an approximate remediation cost, it has been assumed that 30% of the building footprints (i.e., approximately 32,400 square feet) will be impacted to 4 feet in depth, which equals approximately 7,700 tons of soil. It was further assumed that 25% of this soil would be disposed off-site as a hazardous waste and that the other 75% of this soil will be disposed off-site as non-hazardous waste.

Assessment

This alternative should be protective of human health and the environment. Potential unknown contamination, waste materials, etc. would be addressed as necessary.

This alternative should result in the reduction of potential contaminant toxicity, mobility or volume and therefore should be in compliance with chemical-specific SCGs should impacted media exist. Location-specific SCGs should be met since the potential contamination beneath the buildings would be addressed during or subsequent to building demolition work. Action-specific SCGs would be applicable under this alternative.

There may be increased short-term risks associated with this alternative; however, proper monitoring, PPE, etc. should reduce these potential risks. It is anticipated that this alternative would be effective in the long-term and would be a permanent remedy.

Based on the findings of studies performed to date, it is anticipated that this alternative would be acceptable to the community and in relation to the anticipated planned future industrial redevelopment of the Site.

Of the alternatives being considered, this alternative is the most feasible since proper monitoring and potential remediation activities would be implemented. The costs for this alternative are summarized below and detailed in Table 18 included in Appendix H.

Present Worth	$ 723,790
Capital/Initial Cost	$ 723,790
O&M/Annual Present Cost	$ 0

8.3 Comparative Evaluation and Recommended Alternatives

This section of the report compares the remedial alternatives proposed for each area of concern (also presented on Table 19) and presents the recommended alternative for each area of concern. Table 1 included in Appendix H includes a summary of the costs associated with each alternative and Table 20 presents the cost for each recommended alternative and provides the estimated total present worth remedial cost.

8.3.1 AOC1: East of Chemical Lab Building #11

- The no action alternative may not be protective of human health and the environment. In addition, the no action alternative may not be acceptable to the community or in-conjunction with redevelopment of the Site.
- The institutional action with delineation alternative should reduce exposure to the contaminants in this area since potential future ground intrusive work in this area would be conducted in accordance with a SMP.
- The institutional action with delineation alternative may be acceptable to the community and assist in facilitating proper redevelopment of the Site.
- The soil capping alternative should be protective of human health and reduce migration of contaminants; however, this alternative would require long-term monitoring of the cover material and is not a permanent remedy. The soil removal alternative should be protective of human health and the environment.

- Although the soil removal and disposal alternative may be more expensive than the soil capping alternative, the soil removal and disposal alternative is a permanent remedy and should be effective in the long-term. In addition, this alternative should be acceptable to the community and in relation to Site redevelopment.

The recommended alternative for AOC1 (East of Chemical Lab Building #11) is the soil removal and disposal alternative. [Note: The actual area of removal and cost of this alternative will depend on the results of the delineation work. This alternative includes removal of ACMs, building equipment, and residual chemicals from Building #11 and demolition of Building #11 as part of this alternative.]

8.3.2 AOC2: Silver Recovery Vault Area

- The no action alternative may not be protective of human health and the environment. In addition, the no action alternative may not be acceptable to the community or in-conjunction with redevelopment of the Site.
- The institutional action should reduce exposure to the contaminants in this area since potential future ground intrusive work in this area would be conducted in accordance with a SMP.
- The institutional action alternative may not be acceptable to the community and may inhibit redevelopment of this portion of the Site.
- The soil/liquid removal alternative should be protective of human health and the environment.
- Although the soil/liquid removal and disposal alternative is more expensive than the other alternatives, the soil/liquid removal and disposal alternative is a permanent remedy and should be effective in the long-term. In addition, this alternative should be acceptable to the community and in relation to Site redevelopment.

The recommended alternative for AOC2 (Silver Recovery Vault) is the soil/liquid removal and disposal alternative. [Note: The actual area of removal and cost of this alternative will depend on the field screening using XRF equipment and subsequent confirmatory soil sampling/testing including the adjoining area beneath Building #1 (that will require demolition of the building as part of this alternative).]

8.3.3 AOC3: Eastern Portion of the Site

- The no action alternative may not be protective of human health and the environment and may not be acceptable to the community or in relation to redevelopment of the Site.
- The institutional action alternative should reduce exposure to the contaminants in the Eastern Portion of the Site since potential future ground intrusive work in these areas would be conducted in accordance with a SMP. The institutional action alternative may be acceptable to the community and assist in facilitating proper redevelopment of the Site.
- The soil capping alternative should be protective of human health and reduce migration of contaminants; however, this alternative would require long-term monitoring of the cover material.

- The soil removal alternative should be protective of human health and the environment, is a permanent remedy, and should be effective in the long-term.

The recommended alternative for AOC3 (Eastern Portion of the Site) is the soil removal and disposal alternative. [Note: The actual area of removal and cost of this alternative will depend on the delineation work.]

8.3.4 AOC4: Miscellaneous Areas

- The no action alternative may not be protective of human health and the environment and may not be acceptable to the community or in relation to redevelopment of the Site.
- The institutional action alternative should reduce exposure to the contaminants in the Miscellaneous Areas since potential future ground intrusive work in these areas would be conducted in accordance with a SMP. The institutional action alternative may be acceptable to the community and assist in facilitating proper redevelopment of the Site; however, groundwater contamination would not be monitored and potential off-site migration would be unknown.
- The institutional action and monitored natural attenuation alternative would allow for monitoring groundwater contaminants over time.
- The soil capping alternative should be protective of human health and reduce migration of contaminants; however, this alternative would require long-term monitoring of the cover material. In addition, the cost of this alternative does not appear warranted since the area is in an industrial setting and the concentrations appear relatively 'low'.
- The soil removal alternative should be protective of human health and the environment, is a permanent remedy, and should be effective in the long-term. However, the cost of this alternative does not appear warranted since the area is in an industrial setting and the concentrations appear relatively 'low'.

The recommended alternative for AOC4 (Miscellaneous Areas) is the institutional action and monitored natural attenuation alternative.

8.3.5 AOC5: Asbestos Containing Materials

- The no action alternative may not be protective of human health and the environment and may not be acceptable to the community or in relation to redevelopment of the Site.
- The institutional action alternative should reduce exposure to asbestos in the buildings; however, redevelopment of the Site would not be possible under this alternative.
- The removal and disposal of ACMs would be protective of human health and the environment, is a permanent remedy, and would be effective in the long-term.

The recommended alternative for AOC5 (Asbestos Containing Materials) is the removal and disposal alternative.

8.3.6 AOC6: Residual Chemicals

- The no action alternative may not be protective of human health and the environment and may not be acceptable to the community or in relation to redevelopment of the Site.
- The institutional action alternative should reduce exposure to residual chemicals in the buildings; however, redevelopment of the Site would not be possible under this alternative.
- The removal and disposal of residual chemicals would be protective of human health and the environment, is a permanent remedy, and would be effective in the long-term.

The recommended alternative for AOC6 (Residual Chemicals) is the removal and disposal alternative.

8.3.7 Beneath Building Footprints

- The no action alternative may not be protective of human health (specifically construction workers) and the environment and may not be acceptable to the community or in relation to redevelopment of the Site.
- The field screening/sampling and remediation of underlying soil alternative should reduce exposure to potential contaminants and provide a system for addressing potential unknown contaminants.

The recommended alternative for the Building Footprints is the field screening/sampling and remediation of underlying soil alternative.

Site-Wide Remedial Approach

Since each AOC has been discussed separately, a brief summary for the recommended Site-wide remedial approach is provided.

Initially, ACMs will be removed from the buildings at the Site (AOC4). Subsequent to removing ACMs, building equipment and residual chemicals will be removed and disposed of in accordance with applicable regulations (AOC5). The buildings at the Site will then be demolished. The soil underlying the building footprints will be screened in the field to evaluate potential unknown contamination. Subsequent to building demolition, surface and subsurface remedial activities will then be conducted for AOC1, AOC2, AOC3, and possibly within the former building footprints. The recommended delineation activities for AOC3 can be conducted prior to building demolition; however, the delineation activities for AOC1 should be conducted subsequent to demolition of Building #11. [Note: Delineation is not recommended for AOC2 (i.e., the removal area would be determined with XRF equipment at the time of removal)]. The estimated cost for each of the recommended remedial alternatives and the estimated total present worth remediation cost are shown on Table 20 included in Appendix H.

9.0 REFERENCES

Previous Reports

Site Audit dated July 1986 and prepared by O'Brien & Gere for Rhone-Poulenc, Inc.

Regulatory Documents

NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1 document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (TOGS 1.1.1) dated June 1998, as amended by an April 2000 Addendum

NYSDEC Division of Technical and Administrative Guidance Memorandum, Determination of Soil Cleanup Objectives and Cleanup Levels (TAGM 4046) dated January 24, 1994, as amended by the NYSDEC's supplemental Tables dated August 22, 2001

NYSDEC Division of Technical and Administrative Guidance Memorandum, Environmental Restoration Projects (TAGM 4058) dated December 22, 1997

NYSDEC TAGM 4058 Procedures Handbook dated May 2002

NYSDEC Proposed Division of Technical and Administrative Guidance Memorandum, Determination of Soil Cleanup Objectives and Cleanup Levels (TAGM 4046) dated 1995

Title 12 NYCRR Part 56, Asbestos

National Emissions Standards Hazardous Air Pollutants (NESHAPs) - 40 CFR 60

29 CFR Title 29 Part 1926.1101

40 CFR 260

Title 6 NYCRR Part 596

Reference Materials

Revision 2 Work Plan, Site Investigation and Remedial Alternatives Project for the Former Photech Imaging Systems Property, Rochester, New York dated November 1998 and prepared by International Technology Corporation

Phase II Sampling and Analysis Plan, Subsurface Investigation and Survey, Former Photech Imaging Systems, Inc. Site, Site Investigation and Remedial Alternatives Project, City of Rochester, Title V Environmental Bond Act dated October 7, 1999 and prepared by BRG, LLC

Soil Survey, Monroe County, New York dated March 1973, United States Department of Agriculture Soil Conservation Service

New York State Geological Survey, "Surficial Geologic Map of New York - Fingerlakes Sheet", 1986

"New York State Geological Highway Map", W.B Rogers et. al., 1990

United States Geological Survey (USGS) topographic map for the Rochester West, New York quadrangle (1995)

USGS topographic map for the Rochester East, New York quadrangle (1995)

American Society for Testing and Materials (ASTM E) 1527-97 "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*"

Handbook of Environmental Degradation Rates, P.H. Howard, et. al, 1991

The Merck Index, Twelfth Edition, 1996

VISTA Information Solutions, Inc. (VISTA) Environmental Site Assessment Database for the Site dated August 6, 1999

Portion of National Wetlands Inventory map, Rochester West Quadrangle (undated) provided by VISTA

Aerial photographs for the years 1951, 1961, 1970 and 1975 provided by VISTA

Aerial photographs for the years 1930, 1951, 1961, 1970, 1975, 1988 and 1999 reviewed at the Monroe County Environmental Management Council

Groundwater, R Allan Freeze & John A. Cherry, 1979

Groundwater and Wells, Second Edition, F.G. Driscoll PhD (principal author and editor), 1989

Internet References

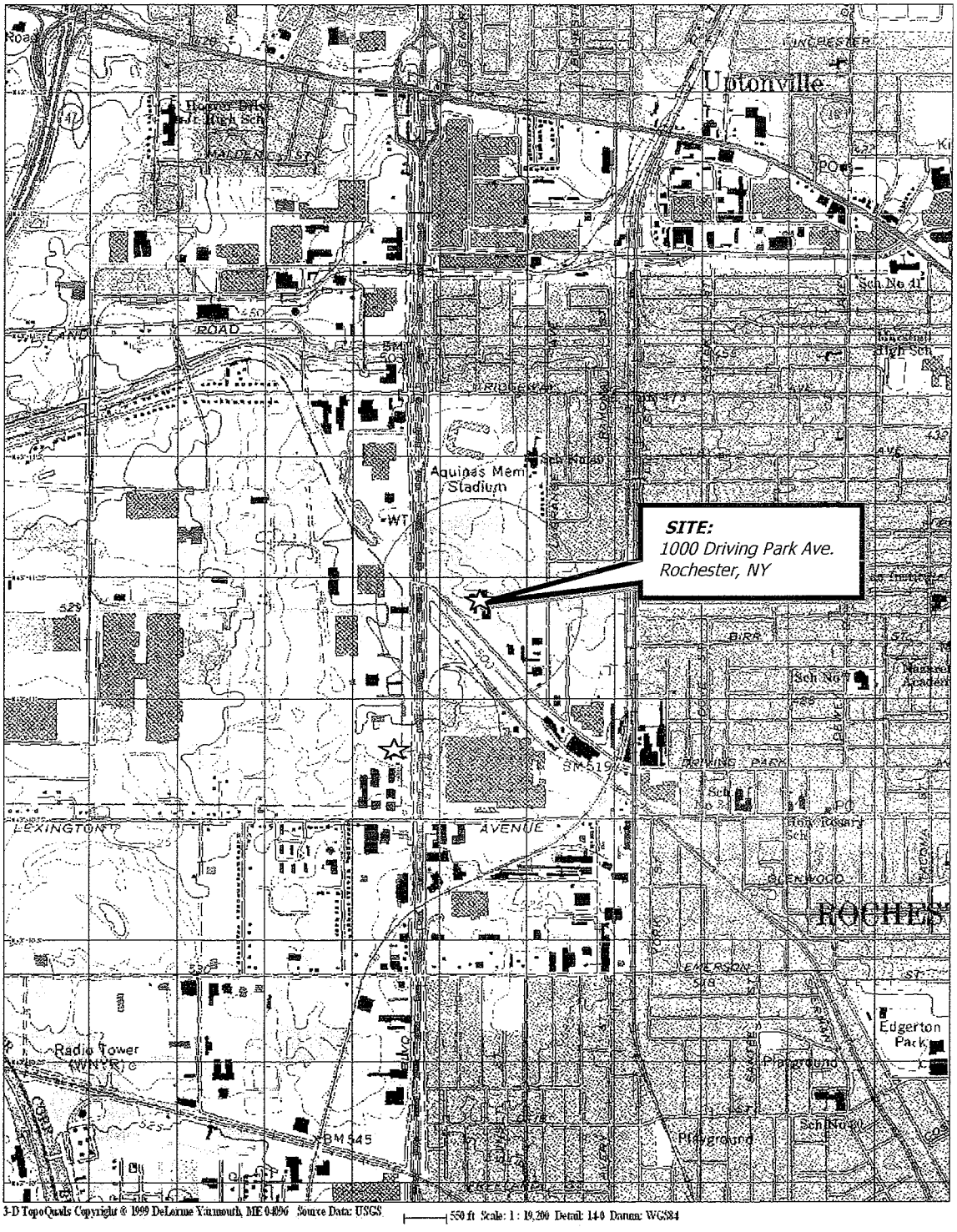
Agency for Toxic Substances and Disease Registry internet site (www.atsdr.cdc.gov/ToxProfiles/phs8920.html)

Population Estimates Program database, Population Division, U.S. Census Bureau American Factfinder (http://factfinder.census.gov)

10.0 ACRONYMS

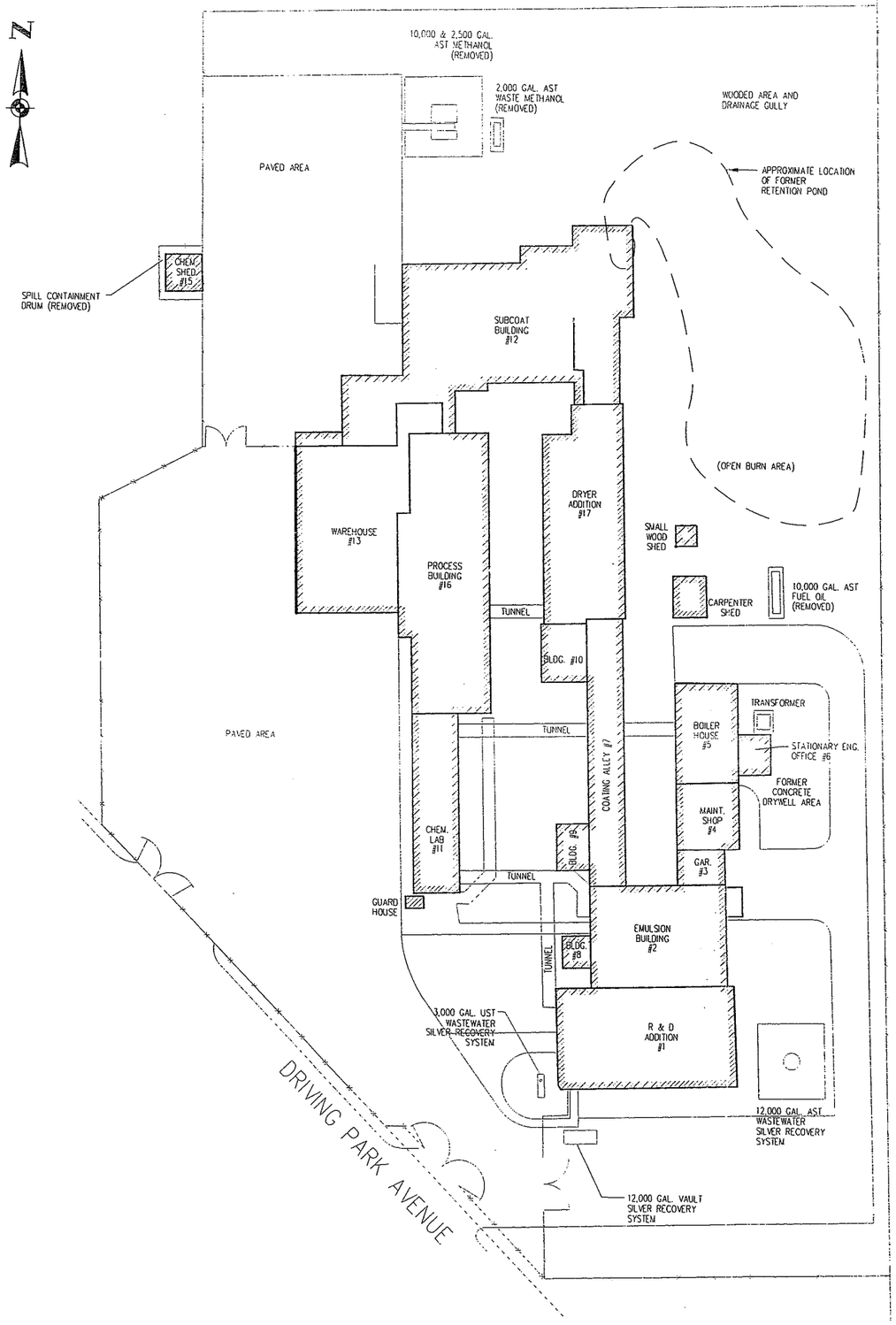
ACM	Asbestos-Containing Material
AOC	Area Of Concern
ASP	Analytical Services Protocol
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
B/E	Building and Equipment
BRG	Brownfield Restoration Group
CAS	Columbia Analytical Services, Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
City	City of Rochester
CLP	Contract Laboratory Protocol
CORRACTS	RCRA Corrective Actions
DAY	Day Environmental, Inc.
DEQ	Department of Environmental Quality
DUSR	Data Usability Summary Report
ELAP	Environmental Laboratory Approval Program
ERNS	Emergency Response Notification System
KG	Kilogram
IRM	Interim Remedial Measure
IT	IT Corporation
LEL	Lower Explosive Limit
LG GEN	Large quantity hazardous waste Generator
LNAPL	Light Non-Aqueous Phase Liquid
LUST	Leaking Underground Storage Tank
MARCOR	MARCOR Remediation, Inc.
MCL	Maximum Contaminant Level
MEK	Methyl Ethyl Ketone (a/k/a 2 Butanone)
NFRAP	No Further Remedial Action Planned
NIOSH	National Institute for Occupational Safety and Health
NOB	Non-friable Organically Bound
NPL	National Priority List
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOL	New York State Department of Labor
O_2	Oxygen
PACM	Presumed Asbestos-Containing Material
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PEL	Permissible Exposure Limit
PID	Photoionization Detector
Phase I ESA	Phase I Environmental Site Assessment
PLM	Polarized Light Microscopy
PPB	Parts Per Billion
PSA	Professional Services Agreement
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RFD	Rochester Fire Department
RPD	Relative Percent Difference
RSCO	Recommended Soil Cleanup Objective
SAC	State Assistance Contract
SACM	Suspect Asbestos-Containing Material
SAP	Sampling and Analysis Plan
SCG	Standard, Criteria and Guidance
SCL	State equivalent CERCLIS List
SI/RA	Site Investigation/Remedial Alternatives
SM GEN	Small quantity hazardous waste Generator
SMP	Site Management Plan
SPL	State equivalent Priority List

SVOC	Semi-Volatile Organic Compound
SWLF	Solid Waste Landfill
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TEM	Transmission Electron Microscopy
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbon
TOC	Total Organic Carbon
TOGS	Technical and Operational Guidance Series
TSD	RCRA-permitted Treatment, Storage and Disposal facility
TWA	Time-Weighted Average
VOC	Volatile Organic Compound
µg	Microgram
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VISTA	VISTA Information Solutions, Inc.



Drawing Produced From: 3-D TopoQuads, DeLorme Map Co., referencing USGS quad map Rochester West (NY) 1995 and Rochester East (NY) 1995. Site Lat/Long: N43°11.19'– W77°39.38'

DATE **06-26-2003** DRAWN BY **LRP** SCALE **1" = 2000'**	**day** DAY ENVIRONMENTAL, INC. ENVIRONMENTAL CONSULTANTS ROCHESTER, NEW YORK 14614-1008	PROJECT TITLE **1000 DRIVING PARK AVENUE** **ROCHESTER, NY** **ENVIRONMENTAL RESTORATION PROJECT** DRAWING TITLE **PROJECT LOCUS MAP**	PROJECT NO. **3198S-03** **FIGURE 1**



NOTES:

1. Figure Produced From An undated CAD Drawing By BRG Environmental titled "Site Investigation/Remedial Alternatives Project".
2. Location Of Former Retention Pond Based On A Drawing By Northrup, Kaelber & Kopf, Titled "Site Plan & Details", Dated November 24, 1980 and Issue Dated November 26, 1980.

SITE PLAN
1"= 80'

0 40 80 120

DesignTag	JAD
DATE	07-22-2003
DRAWN BY	LRP
DATE DRAWN	11-14-2003
SCALE	1"= 80'
DATE ISSUED	12-16-2004

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Site Plan

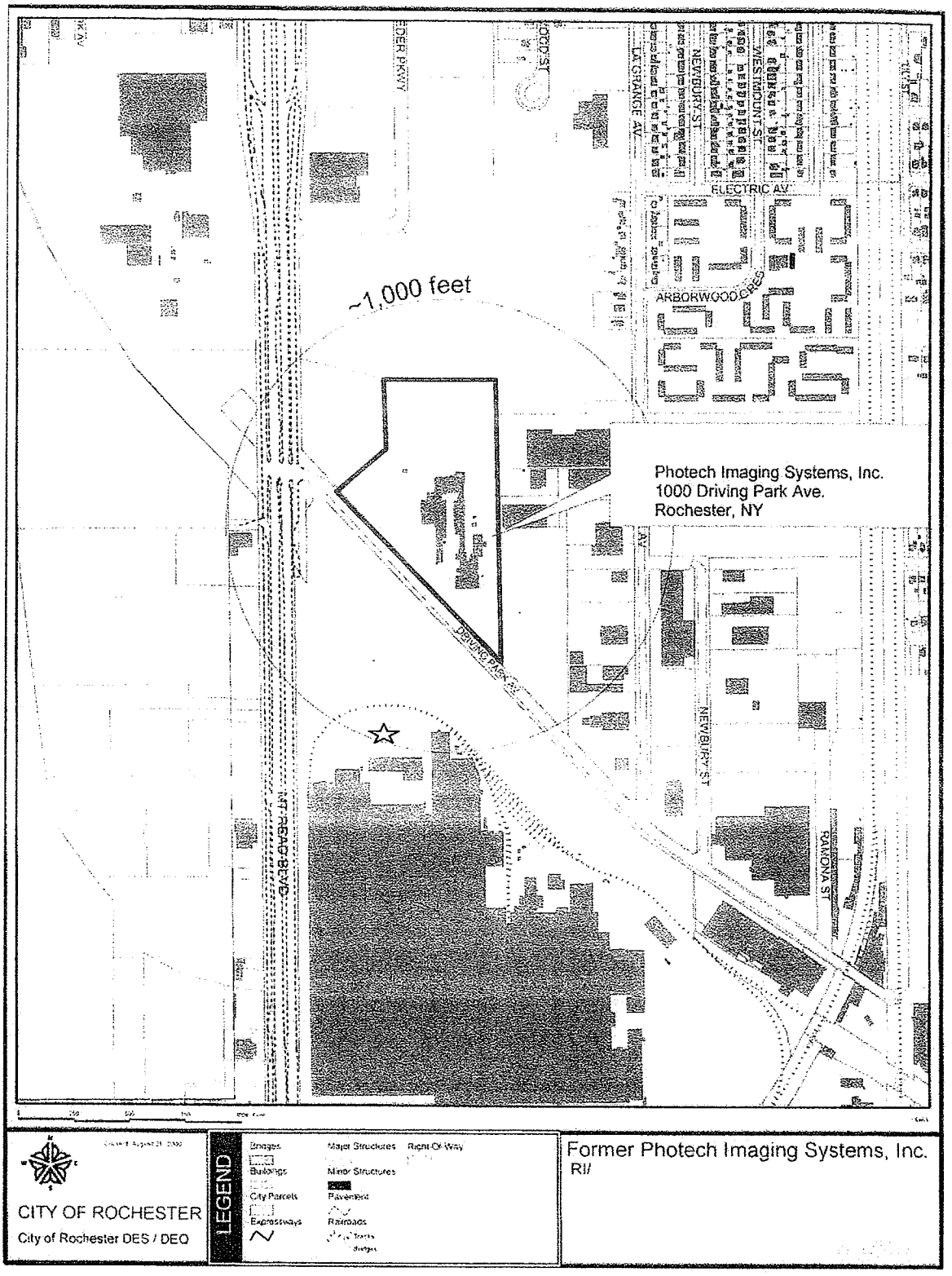
PROJECT NO.
3198S-03

FIGURE 2

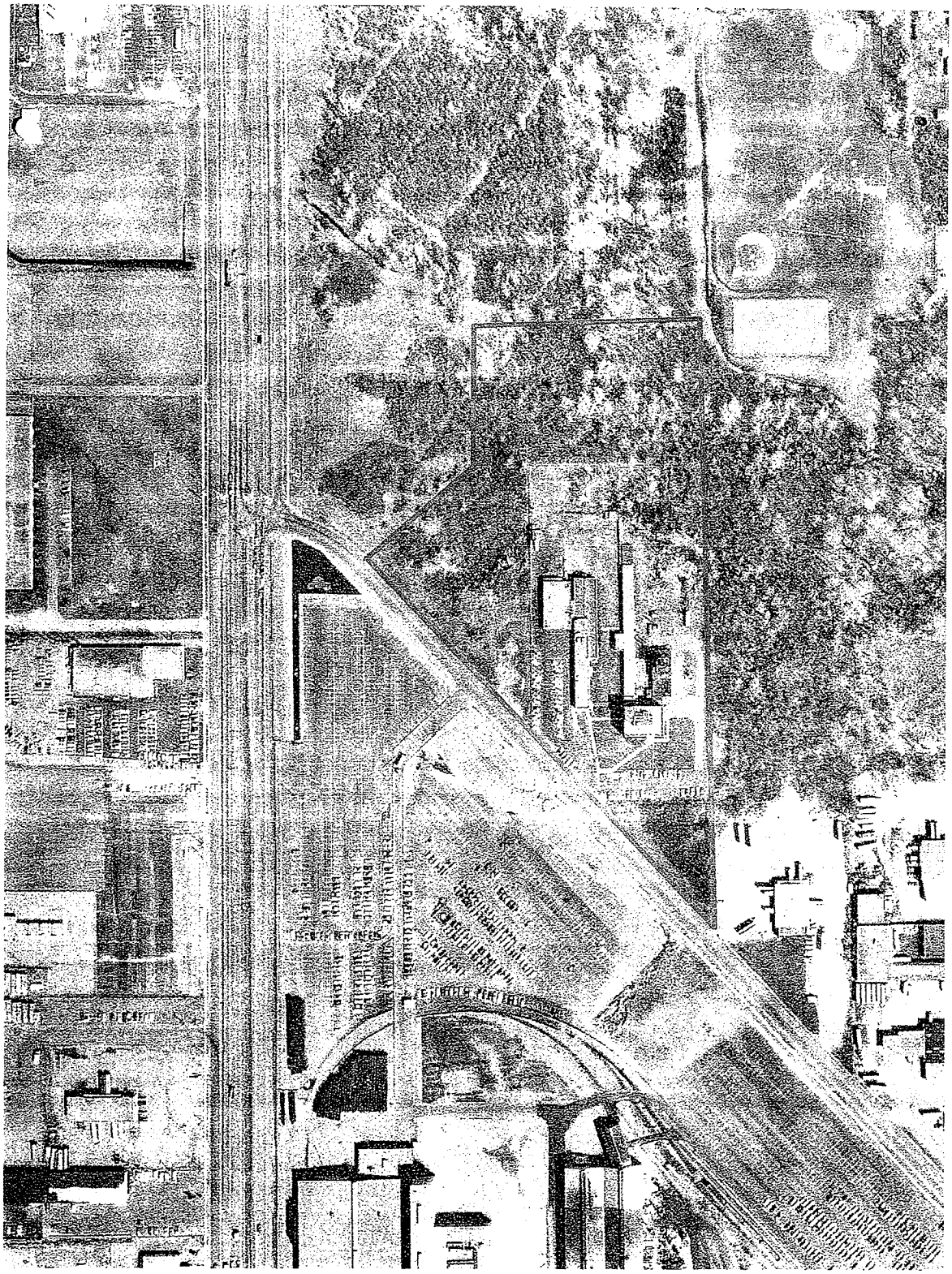
Ref1: SoilBase-2.dwg
Ref2: Base-1.dwg
Ref3:
Ref4:
Ref5:
Ref6:

Time Plotted: Mon Feb 07 13:45 2005
File Name: Rocity\3198\SitePlanFig-2.dwg

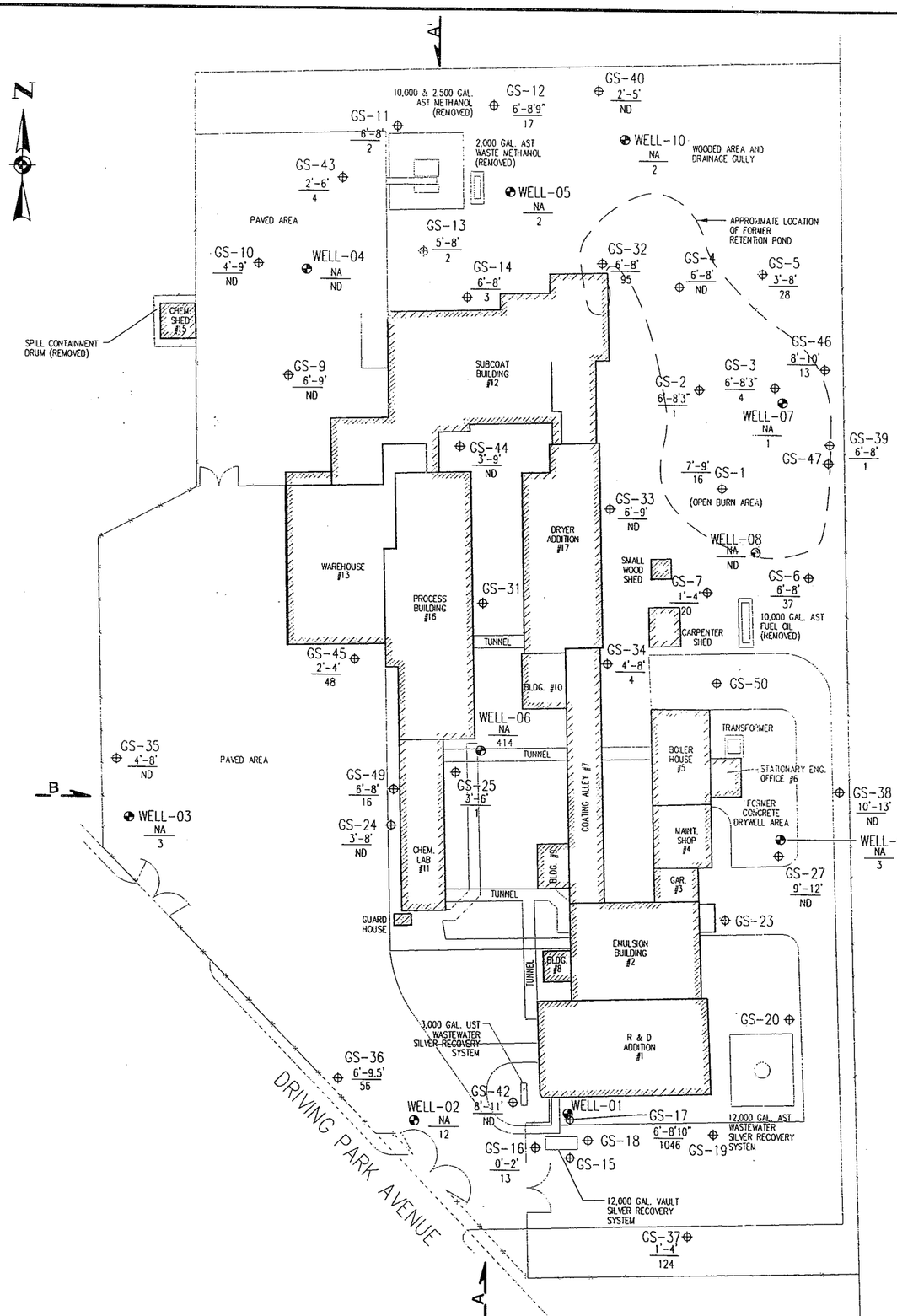
Xerox432AnsiB-2; 11 x 17



DATE 07-22-2003 DRAWN BY JAD SCALE NTS	day DAY ENVIRONMENTAL, INC. ENVIRONMENTAL CONSULTANTS ROCHESTER, NEW YORK 14614-1008	PROJECT TITLE 1000 DRIVING PARK AVENUE ROCHESTER, NY ENVIRONMENTAL RESTORATION PROJECT DRAWING TITLE CITY OF ROCHESTER GIS MAP	PROJECT NO. 3198S-03 FIGURE 3



DATE 07-22-2003 DRAWN BY JAD SCALE NTS	day DAY ENVIRONMENTAL, INC. ENVIRONMENTAL CONSULTANTS ROCHESTER, NEW YORK 14614-1008	PROJECT TITLE 1000 DRIVING PARK AVENUE ROCHESTER, NY ENVIRONMENTAL RESTORATION PROJECT DRAWING TITLE 1975 AERIAL PHOTOGRAPH	PROJECT NO. 3198S-03 FIGURE 4



LEGEND:

GS-5 3'-8" / 28 — Soil Boring Designation with Depth Interval Total VOC And TIC Concentration in Feet over Micrograms per Kilogram

WELL-10 NA / 2 — Groundwater Monitoring Well Designation with Depth interval in Feet over Total VOC and TIC Concentration in Micrograms per Kilogram

NOTES:

1. Figure Produced From An Undated CAD Drawing By BRG Environmental Titled "Site Investigation/Remedial Alternatives Project".
2. Location Of Former Retention Pond Based On A Drawing By Northrup, Kaelber & Kopf, Titled "Site Plan & Details", Dated November 24, 1980 and Issue Dated November 26, 1980.

VOC – Volatile Organic Compound

TIC – Tentatively Identified Compound

ND – Not Detected At Concentrations Above Reported Analytical Laboratory Limits

NA – Not Available

B — B' Approximate Location Of Geologic Cross Section

SOIL BORING LOCATION PLAN
1"= 80'

DESIGN TAG	JAD
DATE	06-26-2003
DRAWN BY	LRP
DATE DRAWN	12-08-2003
SCALE	1" = 80'
DATE ISSUED	12-16-2004

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Test Location Plan with Total VOCs in Soil

PROJECT NO.
3198S-03

FIGURE 5

Ref1: SoilBase-1.dwg
Ref2: Base-1.dwg
Ref3:
Ref4:
Ref5:
Ref6:

Xerox432AnsiB-2; 11 x 17

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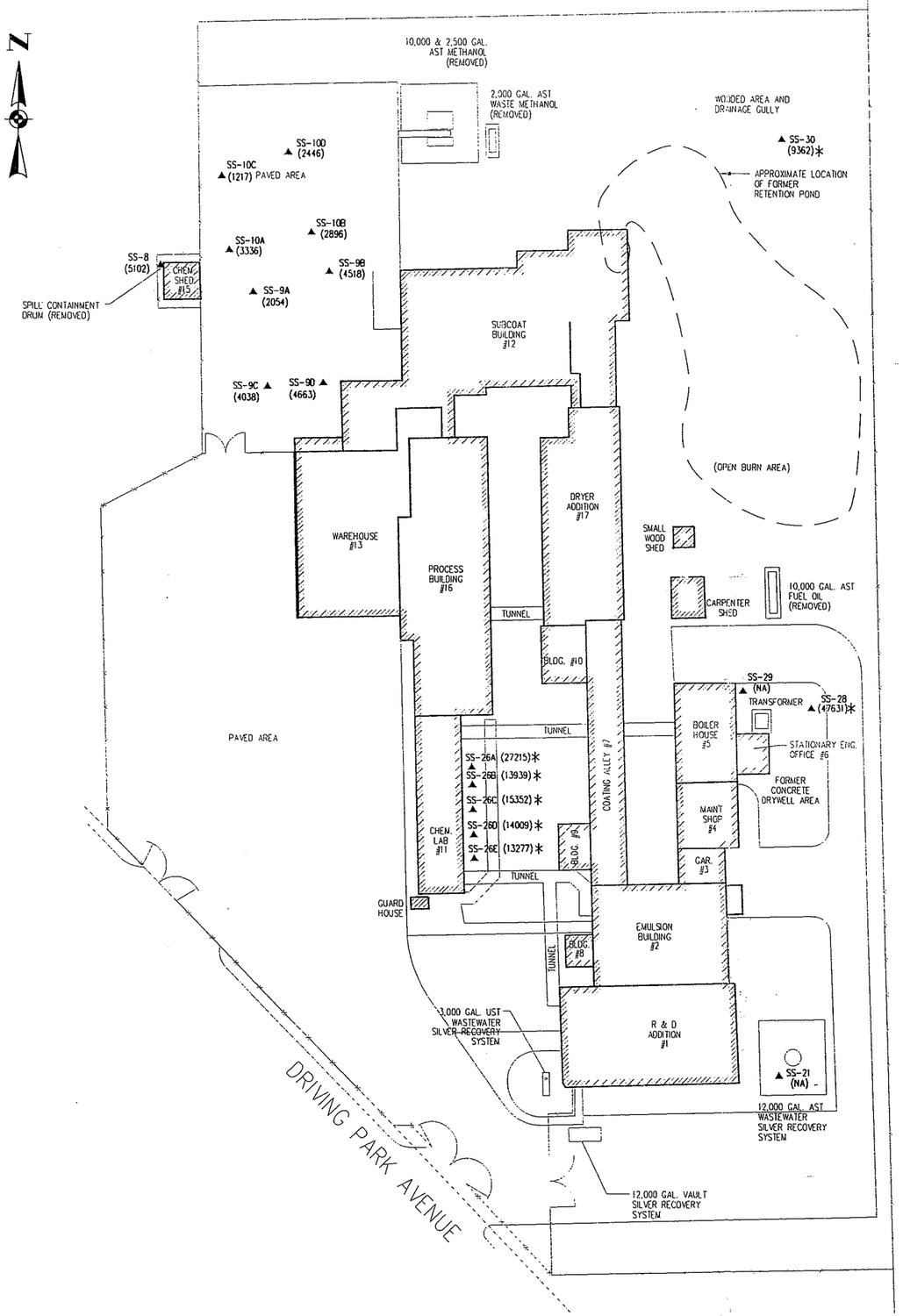

LEGEND:

▲ SS-100 (2446) — Surface Soil Sample Designation with Total SVOC and TIC Concentration in micrograms per kilogram in perenthesis

* Exceeds one or more TAGM 4046 recommended soil cleanup objectives for SVOCs

NOTES:

1. Figure Produced From An Undated CAD Drawing By BRG Environmental Titled "Site Investigation/Remedial Alternatives Project".
2. Location Of Former Retention Pond Based On A Drawing By Northrup Kaelber And Kopf, Titled "Site PLan & Details", Dated November 24, 1980 And Issue Dated November 26, 1980.

SVOC – Semi-Volatile Organic Compound

TIC – Tentatively Identified Compound

NA – Not Available

SITE PLAN
1"= 80'

0 40 80 120

	DATE
DesignTag	07-22-2003
DRAWN BY	DATE DRAWN
LRP	11-20-2003
SCALE	DATE ISSUED
1"= 80'	11-20-2003

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Phase I Surface Soil Sample Locations with Total SVOCs

PROJECT NO.
3198S-03

FIGURE 6

Ref1: SoilBase-2.dwg
Ref2: Base-1.dwg
Ref3:
Ref4:
Ref5:
Ref6:

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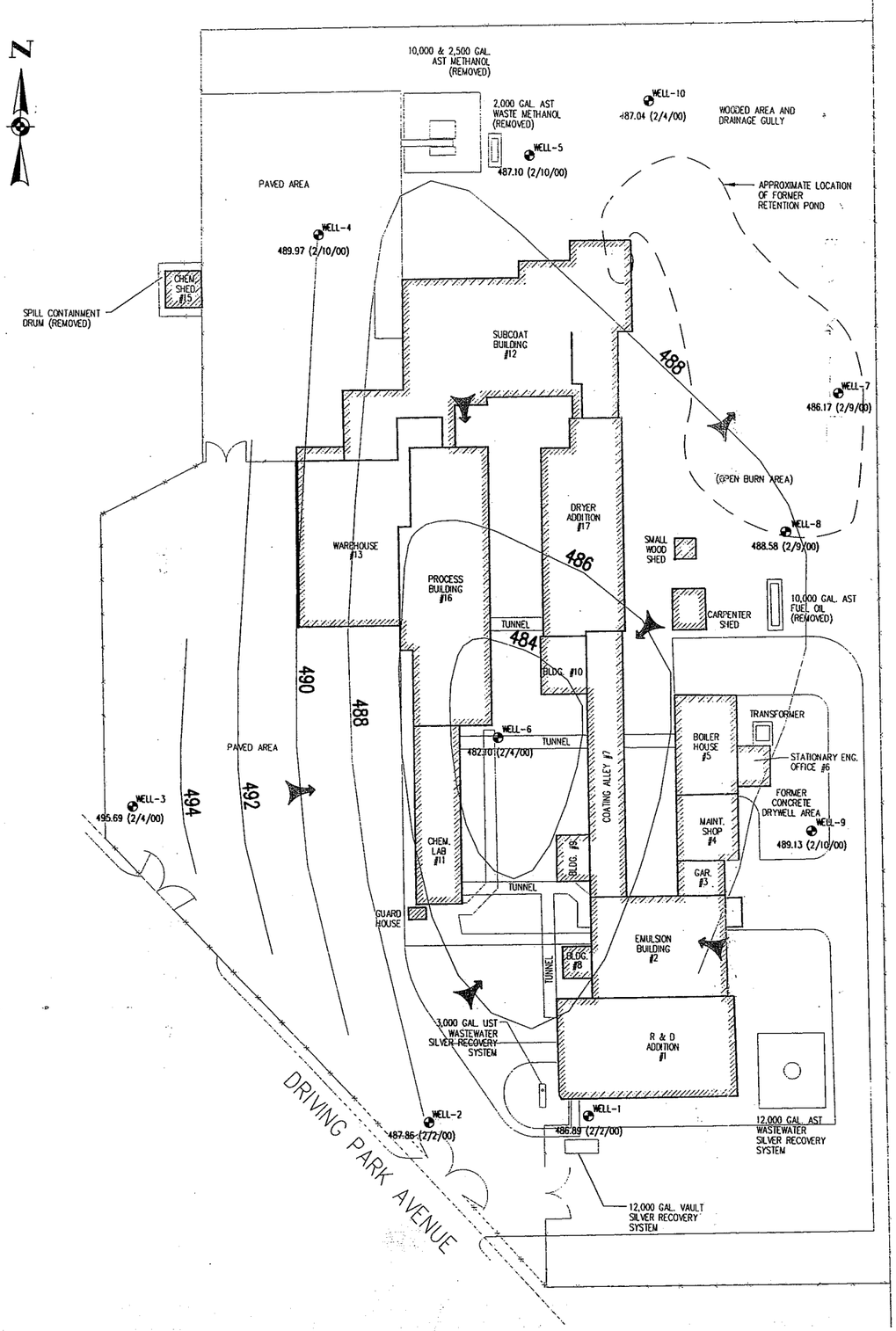

LEGEND:

WELL-8
488.58 (2/9/00)
Monitoring Well Designation with Groundwater Elevation Measured On Date In Parenthesis

488
Potentiometric Contour Line

Apparent Direction Of Groundwater Flow

NOTES:

1. Figure Produced From An Undated CAD Drawing By BRG Environmental Titled "Site Investigation/Remedial Alternatives Project".
2. Location Of Former Retention Pond Based On A Drawing By Northrup Kaelber & Kopf, Titled "Site Plan & Details", Dated November 24, 1980 And Issue Dated November 26, 1980.
3. ~~Vertical Elevations Are~~ City Datum Based On USGS Monument "Mt. Read N.B." Elev.= 503.811 (Feet)
4. Contour Interval = 2 Ft.

GROUNDWATER ELEVATIONS
1"= 80'

0 40 80 120

DESIGN TAG: JAD
DATE: 07-14-2003
DRAWN BY: LRP
DATE DRAWN: 12-08-2003
SCALE: 1"= 80'
DATE ISSUED: 12-16-2003

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Potentiometric Groundwater Contour map

PROJECT NO.
3198S-03

FIGURE 7

Ref1: RockElevBase-1.dwg
Ref2: Base-1.dwg
Ref3:
Ref4:
Ref5:
Ref6:

Xerox432AnsiB-2; 11 x 17

Time Plotted: Mon Feb 07 13:55 2005
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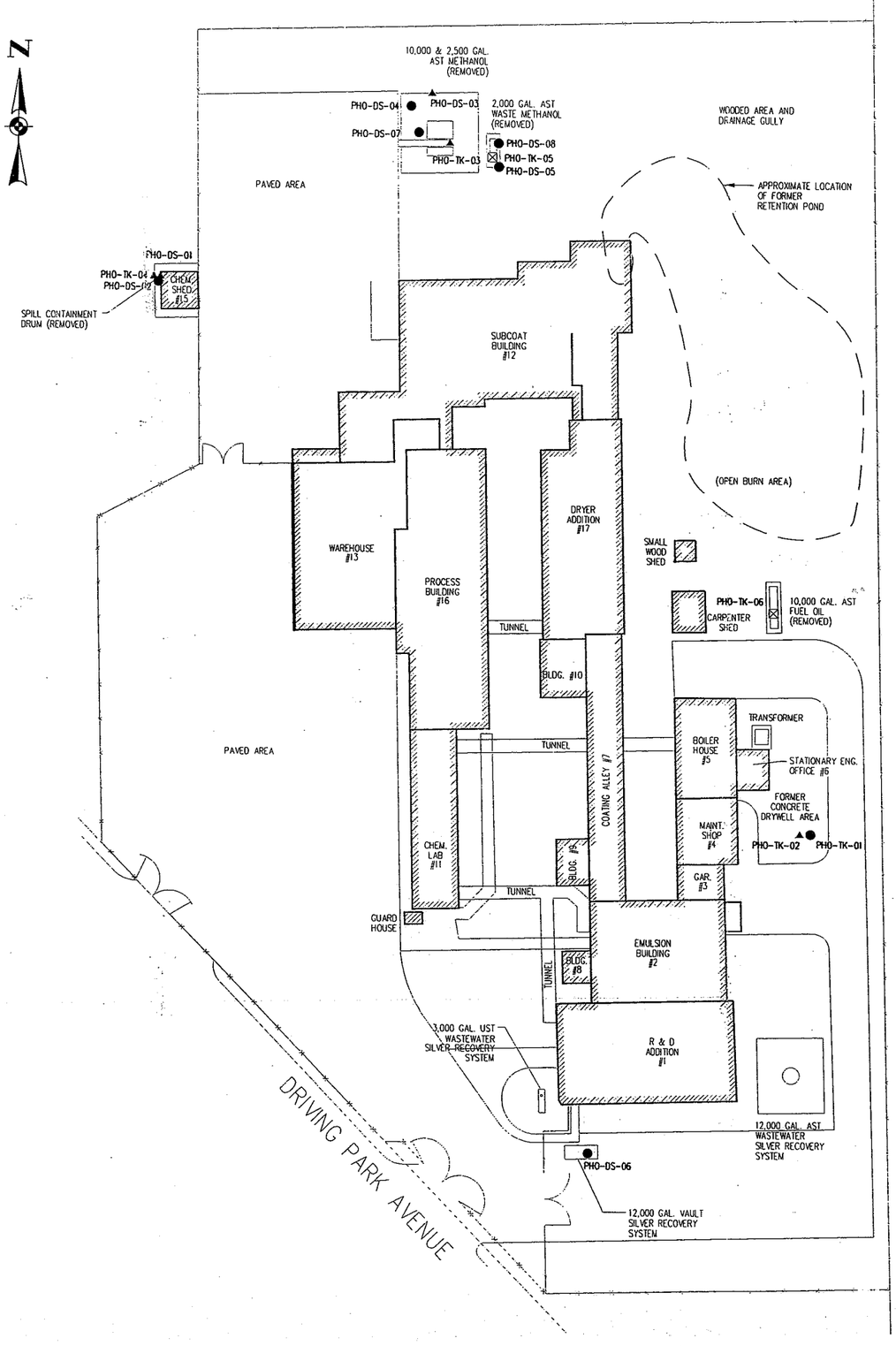

LEGEND:

- ● Aqueous Sample Designation
- ▲ Soil/Solids Sample Designation
- ⊠ Tank Contents (Liquid) TCLP Sample Designation

NOTES:

1. Figure Produced From An undated CAD Drawing By BRG Environmental titled "Site Investigation/Remedial Alternatives Project".
2. Location Of Former Retention Pond Based On A Drawing By Northrup Kaelber & Kopf, Titled "Site Plan & Details", Dated November 24, 1980 And Issue Dated November 26, 1980.

SITE PLAN
1"= 80'

0 40 80 120

DesignTag: JAD | DATE: 07-22-2003
DRAWN BY: LRP | DATE DRAWN: 11-20-2003
SCALE: 1"= 80' | DATE ISSUED: 11-20-2003

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK
ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
IRM Tank Closure And Removal Sample Locations

PROJECT NO.
3198S-03

FIGURE 8

Ref1: SoilBase-2.dwg
Ref2: Base-1.dwg
Ref3:
Ref4:
Ref5:
Ref6:

Xerox432AnsiB-2; 11 x 17

Time Plotted: Mon Feb 07 14:00 2005
File Name: Rocity\3198\Figure-10.dwg

Ref1: RockElevBase-1.dwg
Ref2: Base-1.dwg
Ref3:
Ref4:
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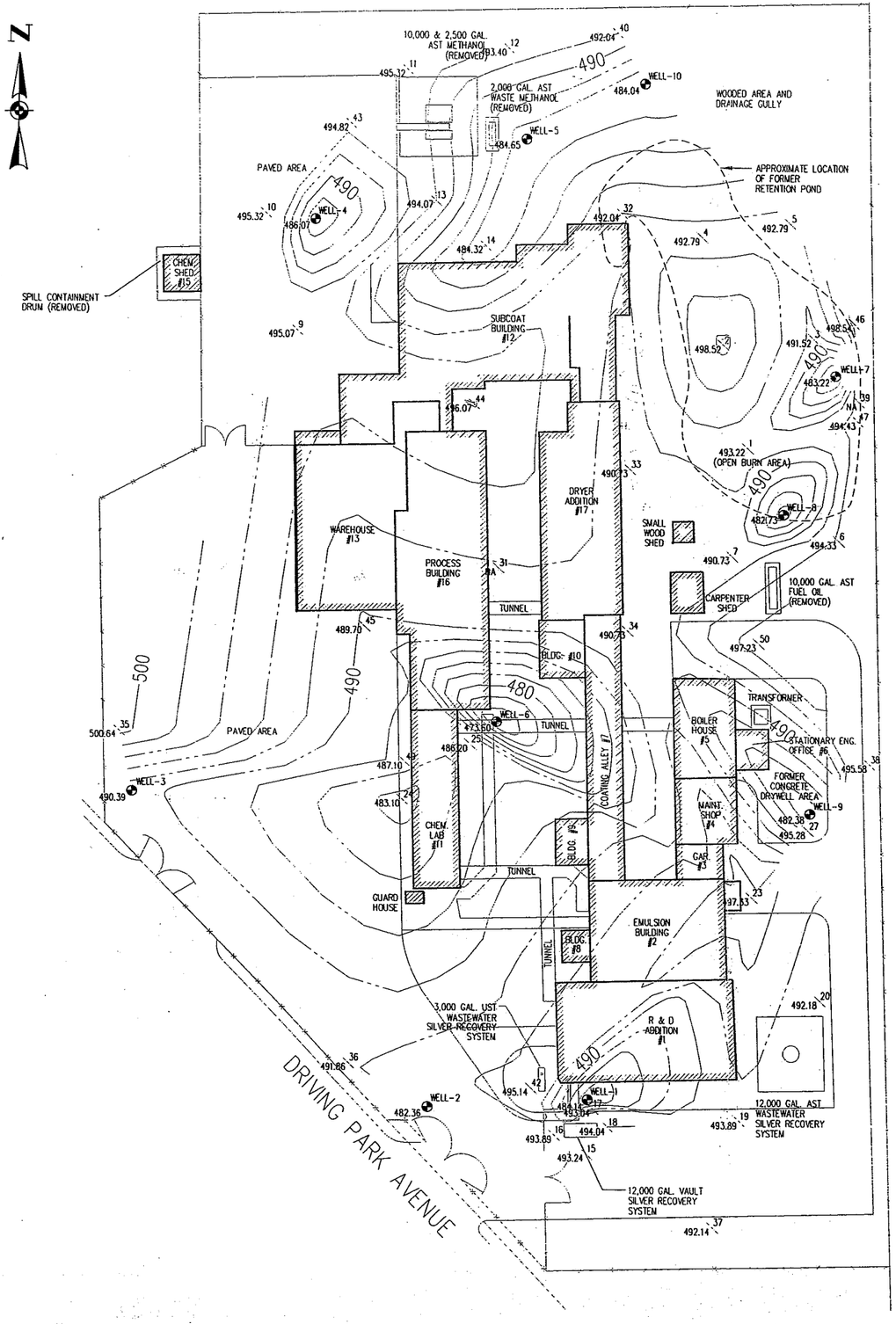


LEGEND:

492.04 TOP OF BEDROCK (FT) — BORING/ WELL LOCATION

NOTES:

1. Figure Produced From An Undated CAD Drawing By BRG Environmental Titled "Site Investigation/Remedial Alternatives Project".
2. Location Of Former Retention Pond Based On A Drawing By Northrup, Kaelber & Kopf, Titled "Site Plan & Details", Dated November 24, 1980 And Issue Dated November 26, 1980.
3. Vertical Elevations Are City Datum Based On USGS Monument "Mt. Read N.B." Elev.= 503.811 (Feet)
4. Contour Interval = 2 Ft.

BEDROCK ELEVATION LOCATION PLAN

1"= 80'

0 40 80 120

DesignTag	JAD
DATE	07-14-2003
DRAWN BY	LRP
DATE DRAWN	10-22-2003
SCALE	1"= 80'
DATE ISSUED	12-16-2003

day

DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

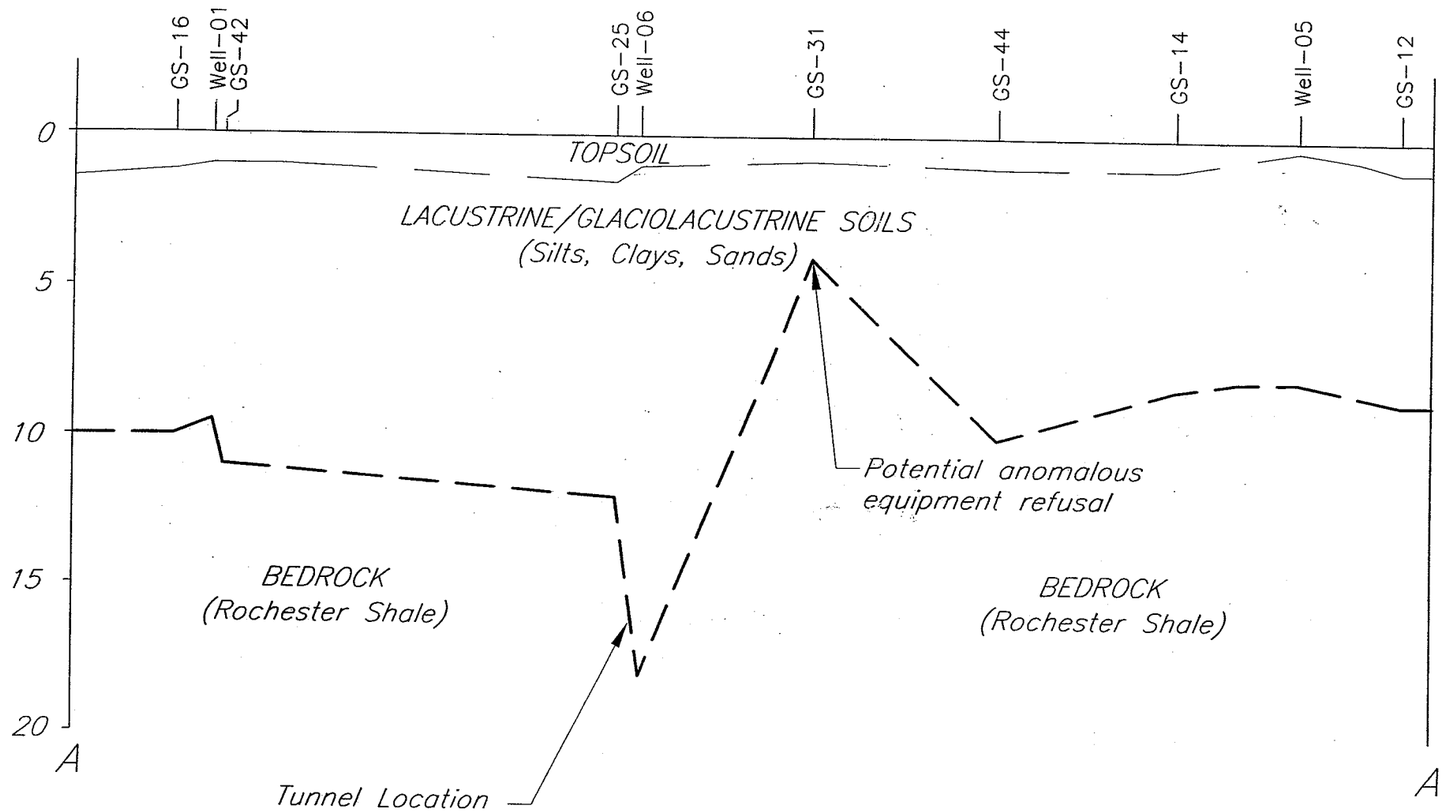
PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Site Plan with Bedrock Elevation

PROJECT NO.
3198S-03

FIGURE 9



NOTE:

Ground elevation inferred to be the same at each test location due to lack of elevation data.

GEOLOGIC CROSS-SECTION A'-A'

1" = 80' Horizontal
1" = 5' Vertical

Ref1: SectionA'_A'
Ref2:
Ref3:
Ref4:
Ref5:
Ref6:

Xerox432AnsiB-2; 11 x 17

Time Plotted: Tues Dec 16 09:57 2003
File Name: Rocity\3198\Figure-12.dwg

DesignTag	JAD
DATE	12-02-2003
DRAWN BY	LRP
DATE DRAWN	12-08-2003
SCALE	As Noted
DATE ISSUED	12-16-2003

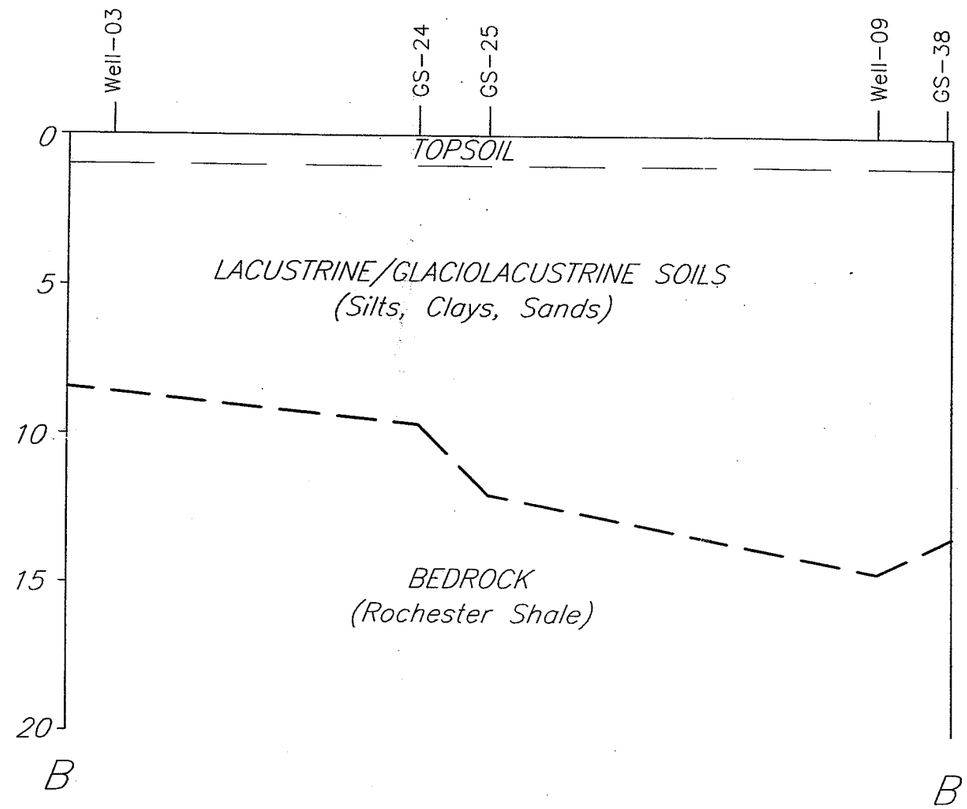
day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK
ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Geologic Cross-Section A'-A'

PROJECT NO.
3198S-03

FIGURE 10



NOTE:
Ground elevation inferred to be the same at each test location due to lack of elevation data.

GEOLOGIC CROSS-SECTION B'-B'

1" = 80' Horizontal
1" = 5' Vertical

DesignTag	JAD
DATE	12-02-2003
DRAWN BY	LRP
DATE DRAWN	12-08-2003
SCALE	1"= 80'
DATE ISSUED	12-16-2003

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Geologic Cross-Section B'-B'

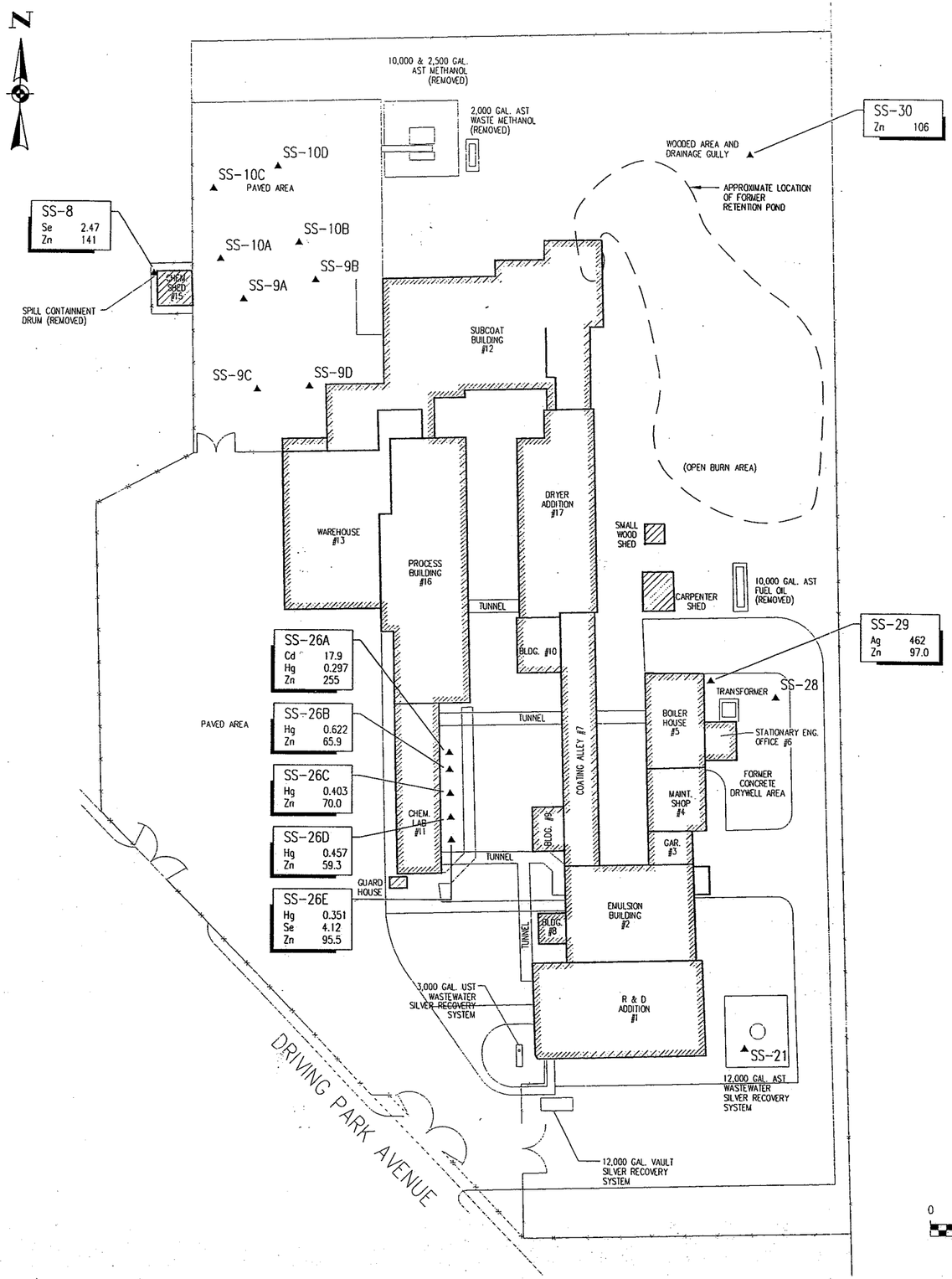
PROJECT NO.
3198S-03

FIGURE 11

Ref1: SectionB'_B'.dwg
Ref2:
Ref3:
Ref4:
Ref5:
Ref6:

Xerox432AnsiB-2; 11 x 17

Time Plotted: Tues Dec 16 09:58 2003
File Name: Rocity\3198\Figure-13.dwg



LEGEND

▲ SS-8
Se 2.47
Zn 141

Surface Soil Sample Designation with Metal Constituent and Concentration in micrograms per kilogram (Note, the samples and associated concentrations shown are two or more times than: the average of other surface soil samples tested as part of the study; the NYSDEC TAGM 4046 Typical Background Range; and/or the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives.

Ag	Silver
Cd	Cadmium
Hg	Mercury
Se	Selenium
ZN	Zinc

NOTES:

1. Figure produce from an undated CAD drawing by: BRG Environmental, entitled "Site Investigation/Remedial Alternatives Project".
2. Location of former retention pond based on a drawing by: Northrup Kaelber & Kopf, entitled "Site Plan & Details", dated November 24, 1980 and issue dated November 26, 1980.

SITE PLAN
1"= 80'

0 40 80 120

DATE 12-2004
Field Verified By JAD
DRAWN BY RJM
DATE DRAWN 12-08-2004
SCALE 1"=80'
DATE ISSUED 12-16-2004

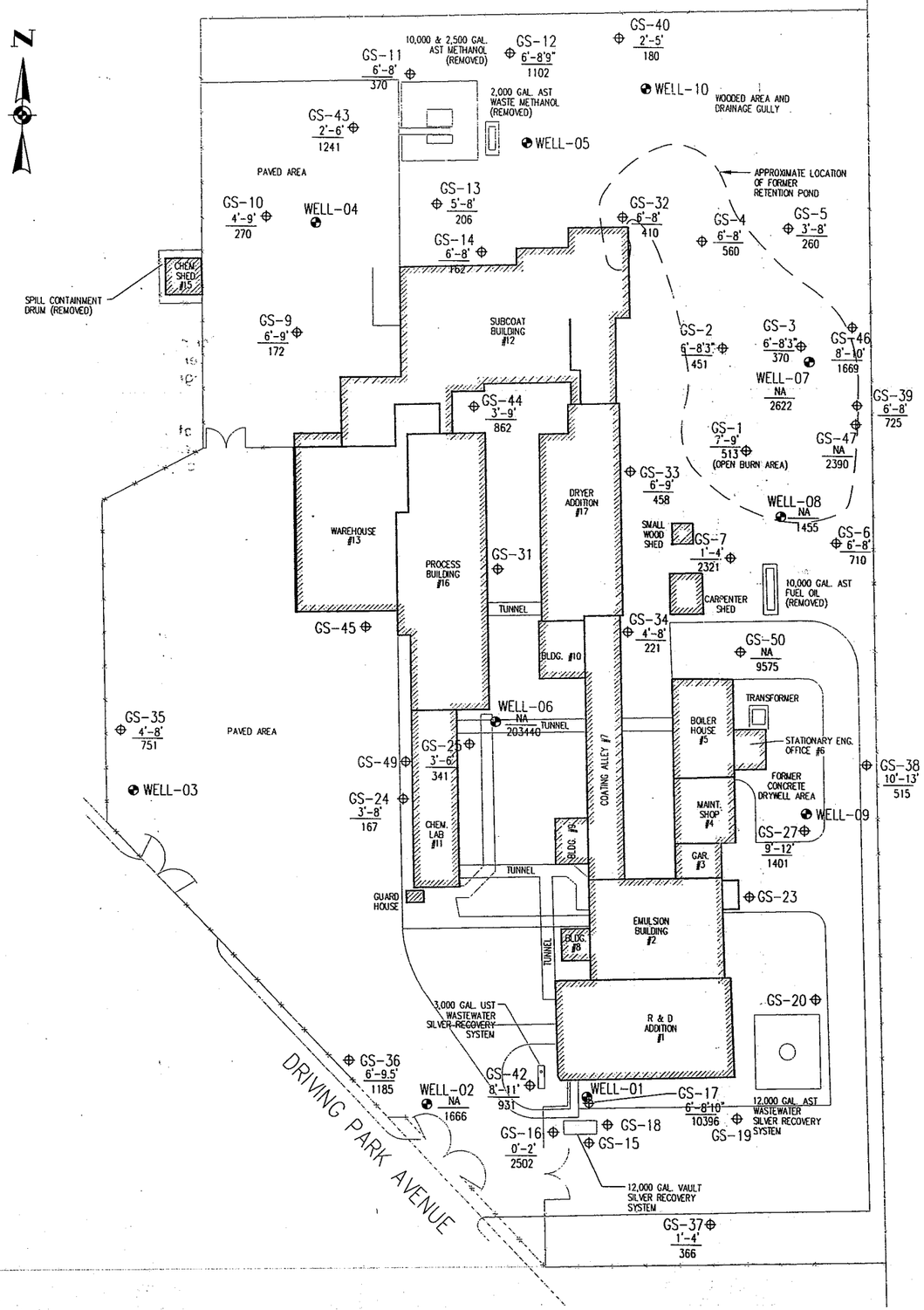
day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10165-1617

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK
ENVIRONMENTAL RESTORATION PROJECT
DRAWING TITLE
Phase I Surface Soil Sample Locations with Elevated Metals

PROJECT NO.
3198S-03

FIGURE 12

Ref1: Base-1.dwg
Ref2:
Ref3:
Ref4:
Ref5:
Ref6:
Xerox432AnsiB-2; 11 x 17
Layout Name: Layout 1
Time Plotted: Mon Feb 07 14:10 2005
File Name: C:\City\3198\SoilBase-5.dwg



LEGEND:

GS-5 3'-8' 260 — Soil Boring Designation with Depth Interval in Feet over Total SVOC And TIC Concentration in Micrograms per Kilogram

WELL-8 NA 1455 — Groundwater Monitoring Well Designation with Depth Intervdl in Feet over Total SVOC and TIC Concentration in Micrograms per Kilogram

NOTES:

1. Figure Produced From An Undated CAD Drawing By BRG Environmental Titled "Site Investigation/Remedial Alternatives Project".
2. Location of Former Retention Pond Based On A Drawing By Northrup, Kaelber & Kopf titled "Site Plan & Details" Dated November 24, 1980 And Issue Dated November 26, 1980.

SVOC – Semi-Volatile Organic Compound

TIC – Tentatively Identified Compound

NA – Not Available

SOIL BORING LOCATION PLAN
1"= 80'

DesignTag	JAD
DATE	07-14-2003
DRAWN BY	LRP
DATE DRAWN	10-22-2003
SCALE	1"= 80'
DATE ISSUED	12-16-2003

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Test Location Plan with Total SVOCs in Soil

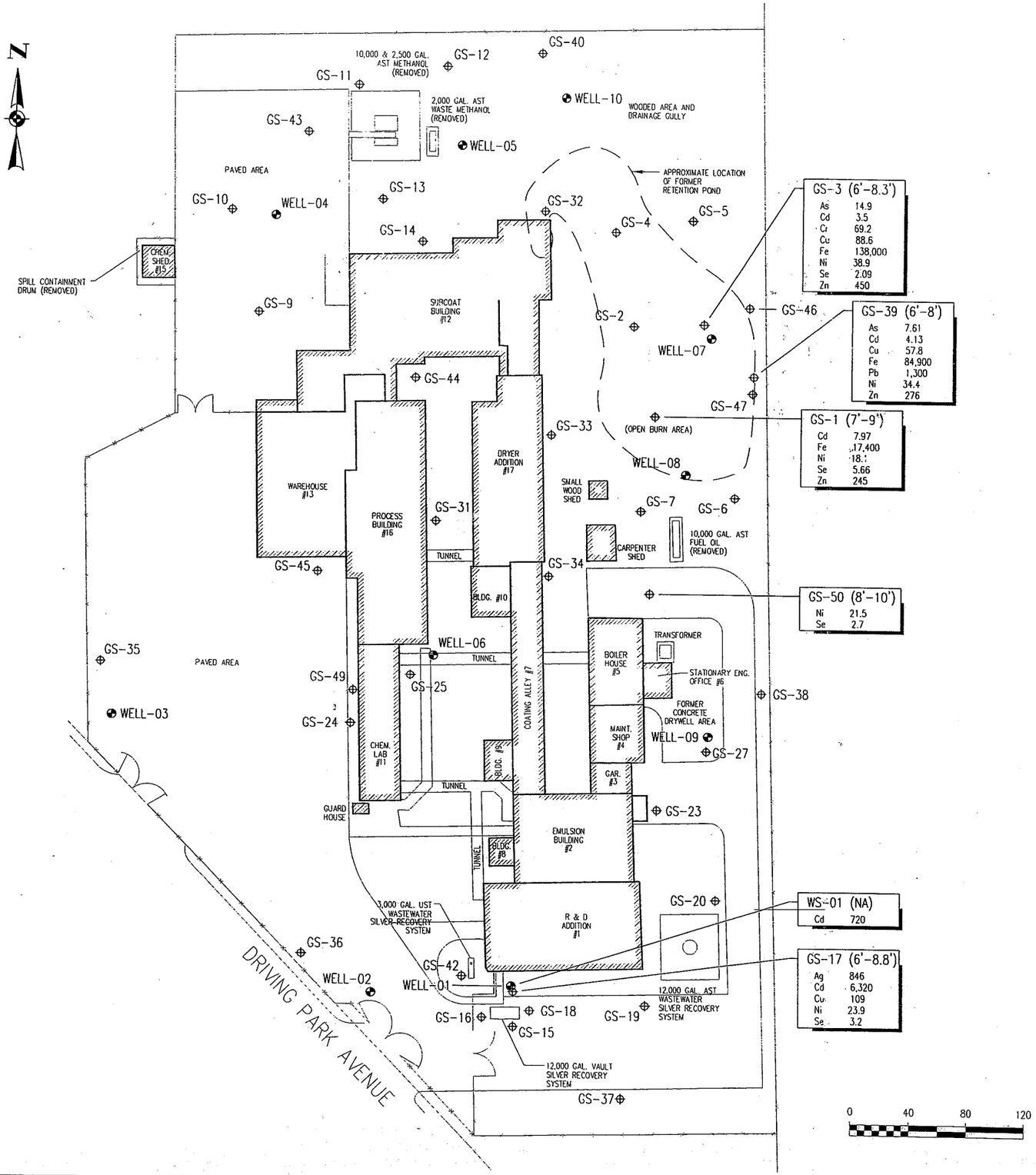
PROJECT NO.
3198S-03

FIGURE 13

Ref1: SoilBase-2.dwg
Ref2: Base-1.dwg
Ref3:
Ref4:
Ref5:
Ref6:

Xerox432AnsiB-2; 11 x 17

Time Plotted: Mon Feb 07 14:10 2005
File Name: Rocity\3198\Figure-2.dwg



LEGEND

⊕ GS-3 (6'-8.3')		Soil Boring Designation with Depth Interval in feet, Metal Constituent and Concentrations in Micrograms per Kilogram (Note, the samples and associated concentrations shown are two or more times than: the average of other soil samples tested as part of the study; the NYSDEC TAGM 4046 Typical Background Ranges and/or the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives.
As	14.9	
Cd	3.5	
Cr	69.2	
Cu	88.6	
Fe	138,000	
Ni	38.9	
Se	2.09	
Zn	450	
Ag		Silver
As		Arsenic
Cd		Cadmium
Cr		Chromium
Cu		Copper
Fe		Iron
Pb		Lead
Ni		Nickel
Se		Selenium
Zn		Zinc
NA		Not Available

Notes:

1. Figure produced from an undated CAD drawing by: BRG Environmental, entitled "Site Investigation/Remedial Alternatives Project".
2. Location of former retention pond based a drawing by: Northrup, Kaelber & Kopf, entitled "Site Plan & Details", dated November 24, 1980 and issue dated November 26, 1980.

SOIL BORING LOCATION PLAN

1"= 80'

FIELD VERIFIED BY	JAD
DATE	12-2004
DRAWN BY	RJM
DATE DRAWN	12-08-2004
SCALE	1"=80'
DATE ISSUED	12-16-2004

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10165-1617

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Test Location Plan with Elevated Metals in Soil

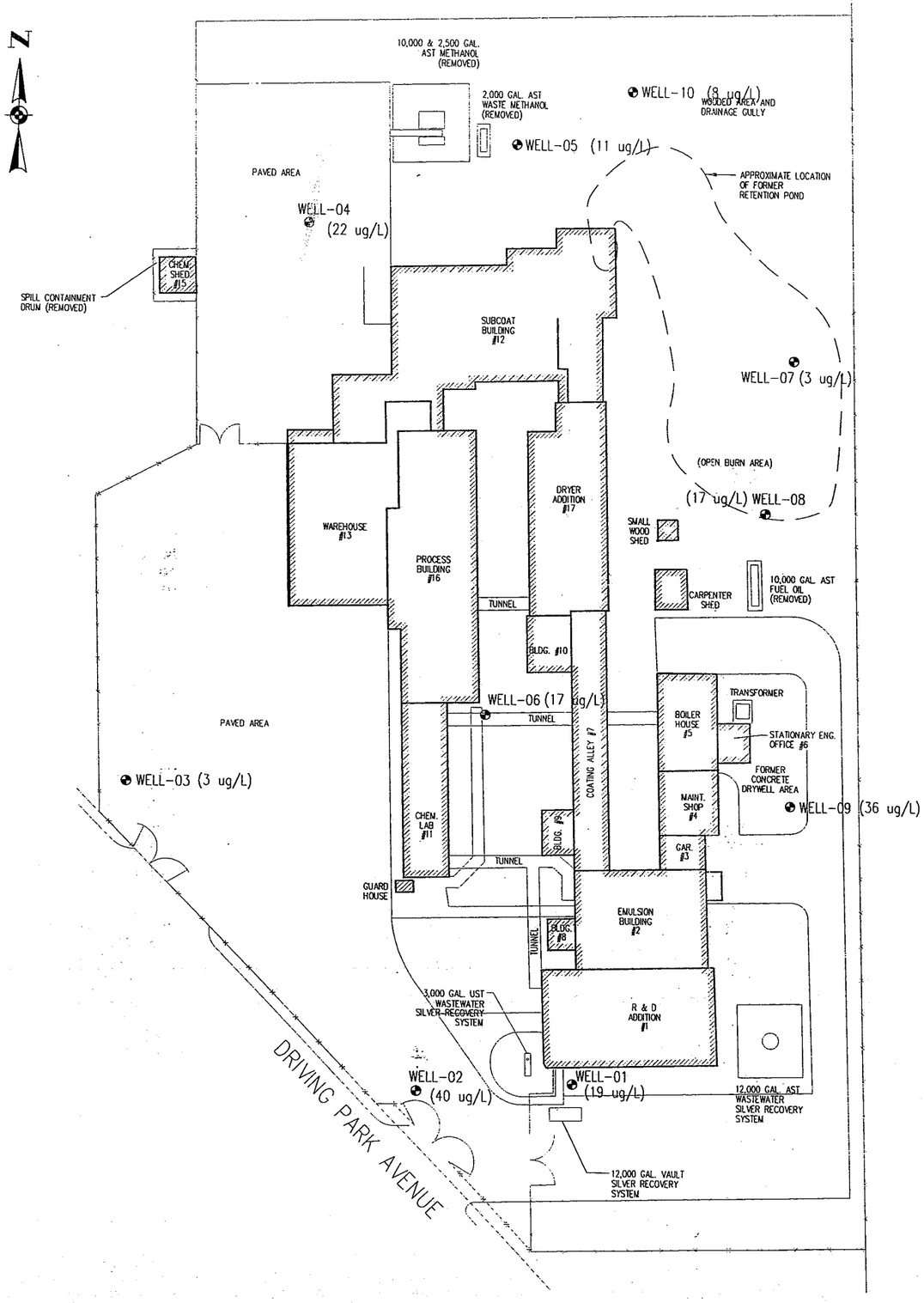
PROJECT NO.
3198S-03

FIGURE 14

Ref1: Base-1.dwg
Ref2:
Ref3:
Ref4:
Ref5:
Ref6:

Xerox432AnsiB-2; 11 x 17
Layout Name: Layout 1

Time Plotted: Mon Feb 07 14:15 2005
File Name: Rocity\3198\SoilBase-4.dwg



LEGEND:

WELL-03 (3 ug/L) Groundwater Monitoring Well Designation with Total VOC and TIC Concentration in Micrograms per Liter

NOTES:

1. Figure Produced From An Undated CAD Drawing By BRG Environmental Titled "Site Investigation/Remedial Alternatives Project".
2. Location Of Former Retention Pond Based On A Drawing By Northrup, Kaelber & Kopf, Titled "Site Plan & Details", Dated November 24, 1980 And Issue Dated November 26, 1980.

VOC – Volatile Organic Compound

TIC – Tentatively Identified Compound

MONITORING WELL LOCATION PLAN
1"= 80'

DesignTag	JAD
DATE	07-14-2003
DRAWN BY	LRP
DATE DRAWN	10-22-2003
SCALE	1"= 80'
DATE ISSUED	12-16-2003

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Monitoring Well Location Plan with Total VOCs in Groundwater

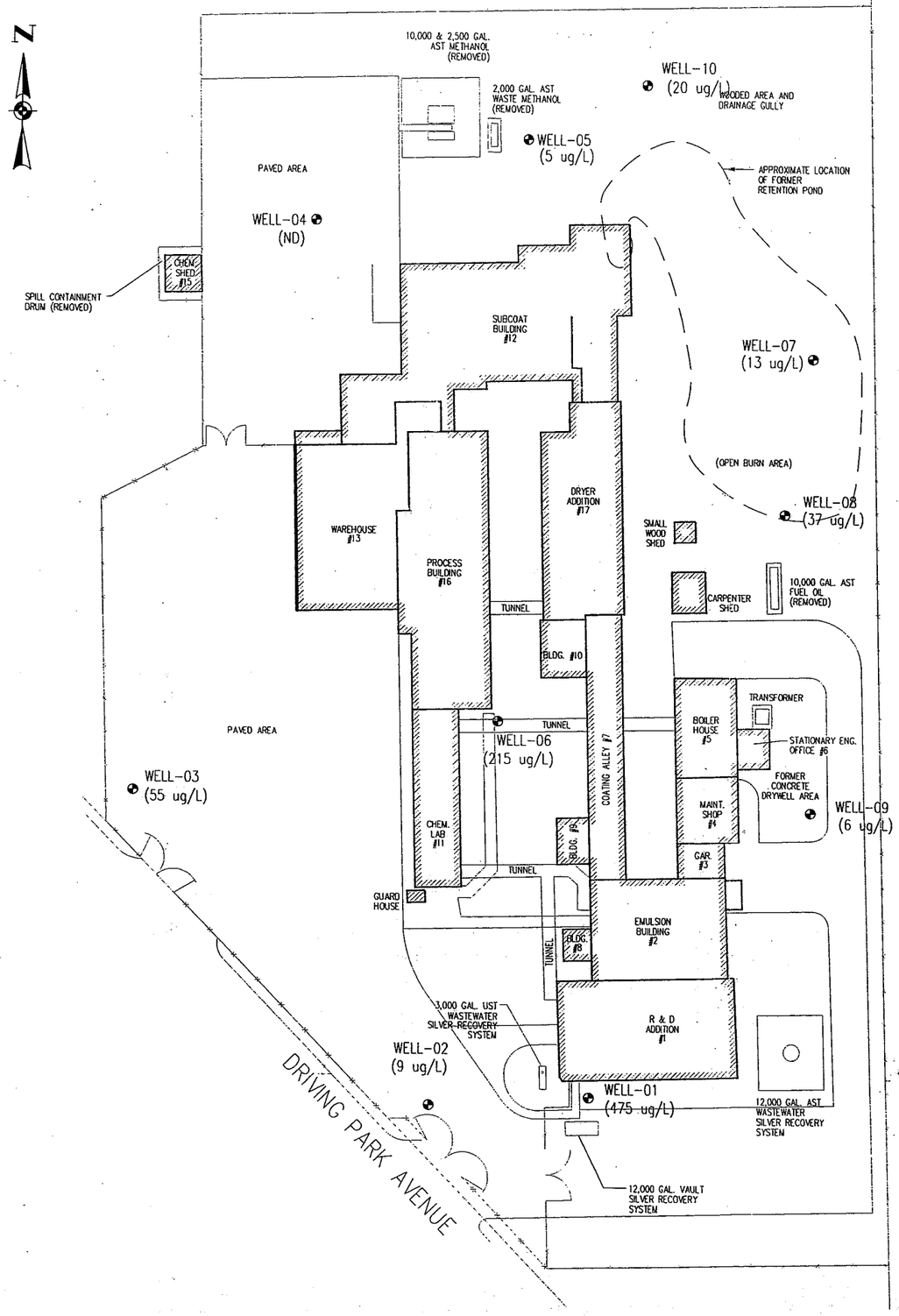
PROJECT NO.
3198S-03

FIGURE 15

Ref1: SoilBase-2.dwg
Ref2: Base-1.dwg
Ref3:
Ref4:
Ref5:
Ref6:

Xerox432AnsiB-2; 11 x 17

Time Plot: Mon Feb 07 14:15 2005
File Name: Rocity\3198\Figure-3.dwg



LEGEND:

WELL-03 (55 ug/L) Groundwater Monitoring Well Designation with Total SVOC and TIC Concentration in Micrograms per Liter

NOTES:

1. Figure Produced From An Undated CAD Drawing By BRG Environmental Titled "Site Investigation/Remedial Alternatives Project".
2. Location Of Former Retention Pond Based On A Drawing By Northrup, Kaelber & Kopf, Titled "Site Plan & Details", Dated November 24, 1980 And Issue Dated November 26, 1980.

SVOC – Semi-Volatile Organic Compound

ND – Not Detected At Concentrations Above Reported Analytical Laboratory Limits

TIC – Tentatively Identified Compound

MONITORING WELL LOCATION PLAN
1"= 80'

0 40 80 120

DesignTag	JAD
DATE	07-14-2003
DRAWN BY	LRP
DATE DRAWN	10-22-2003
SCALE	1"= 80'
DATE ISSUED	12-16-2003

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Monitoring Well Location Plan with Total SVOCs in Groundwater

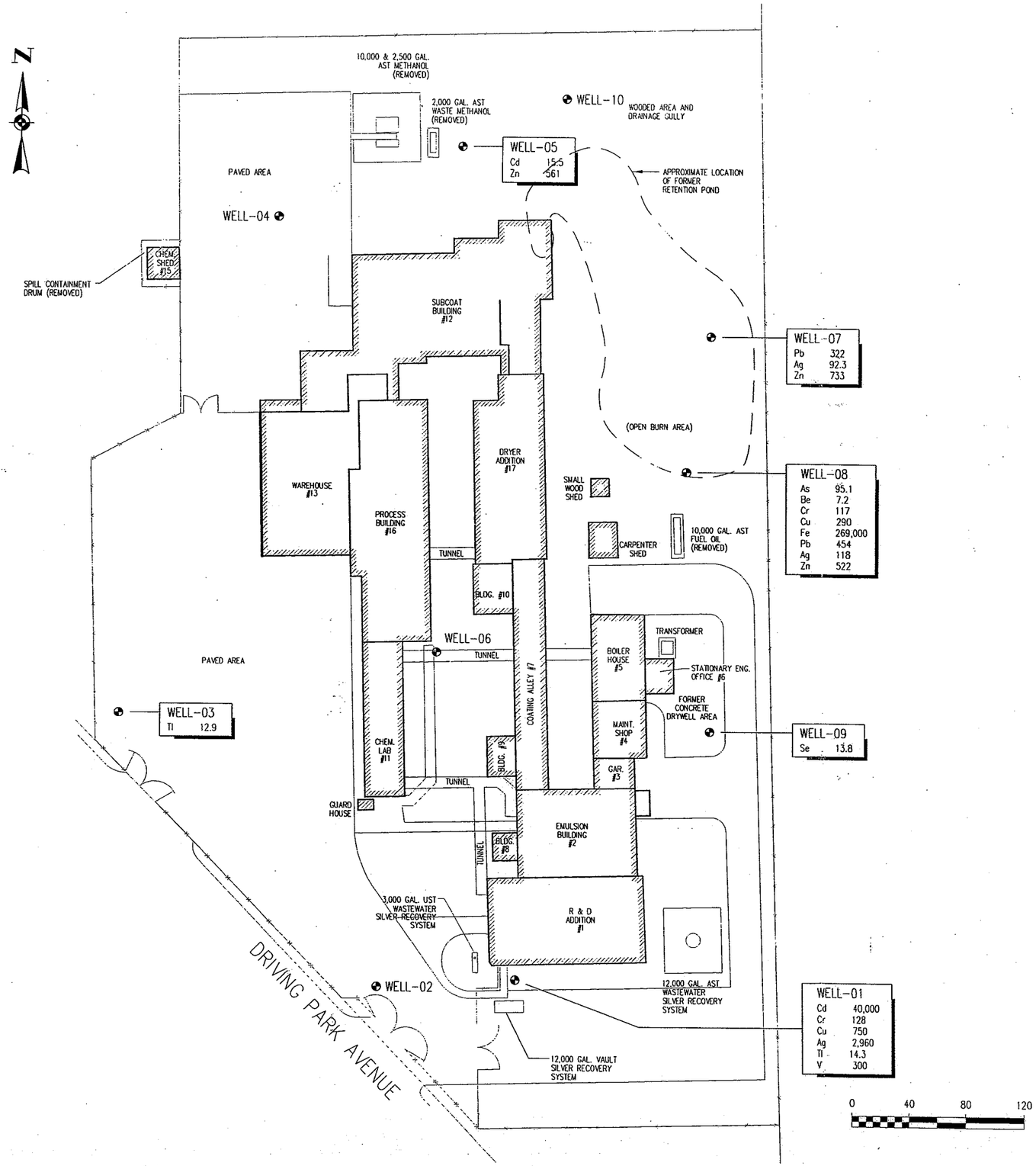
PROJECT NO.
3198S-03

FIGURE 16

Ref1: SoilBase-3.dwg
Ref2: Base-1.dwg
Ref3:
Ref4:
Ref5:
Ref6:

Time Plotted: Mon Feb 07 14:20 2005
File Name: Rocity\3198\Figure-4.dwg

Xerox432AnsiB-2; 11 x 17



LEGEND

WELL-07		Groundwater Monitorig Well Designation listing Metals and Concentrations in micrograms per liter that are two or more times than: the average of other groundwater samples tested as part of the study or the NYSDEC TOGS1.1.1
Pb	322	
Ag	92.3	
Zn	733	

Ag	Silver
As	Arsenic
Be	Beryllium
Cd	Cadmium
Cr	Chromium
Cu	Copper
Fe	Iron
Pb	Lead
Tl	Titanium
V	Vanadium
Zn	Zinc

NOTES:

1. Figure produced froman undated CAD drawing by: BRG Environmental, entitled "Site investigation/Remedial Alternatives Project".
2. Location of former retention pond based on a drawing by: Northrup, Kaelber & Kopf, entitled: "Site Plan & Details", dated November 24, 1980 and issue dated November 26, 1980.

MONITORING WELL LOCATION PLAN
1"= 80'

DATE	12-2004
Field Verified By	JAD
DRAWN BY	RJM
DATE DRAWN	12-08-2004
SCALE	1"=80'
DATE ISSUED	12-28-2004

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10165-1617

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Monitoring Well Location Plan with Elevated Metals in Groundwater

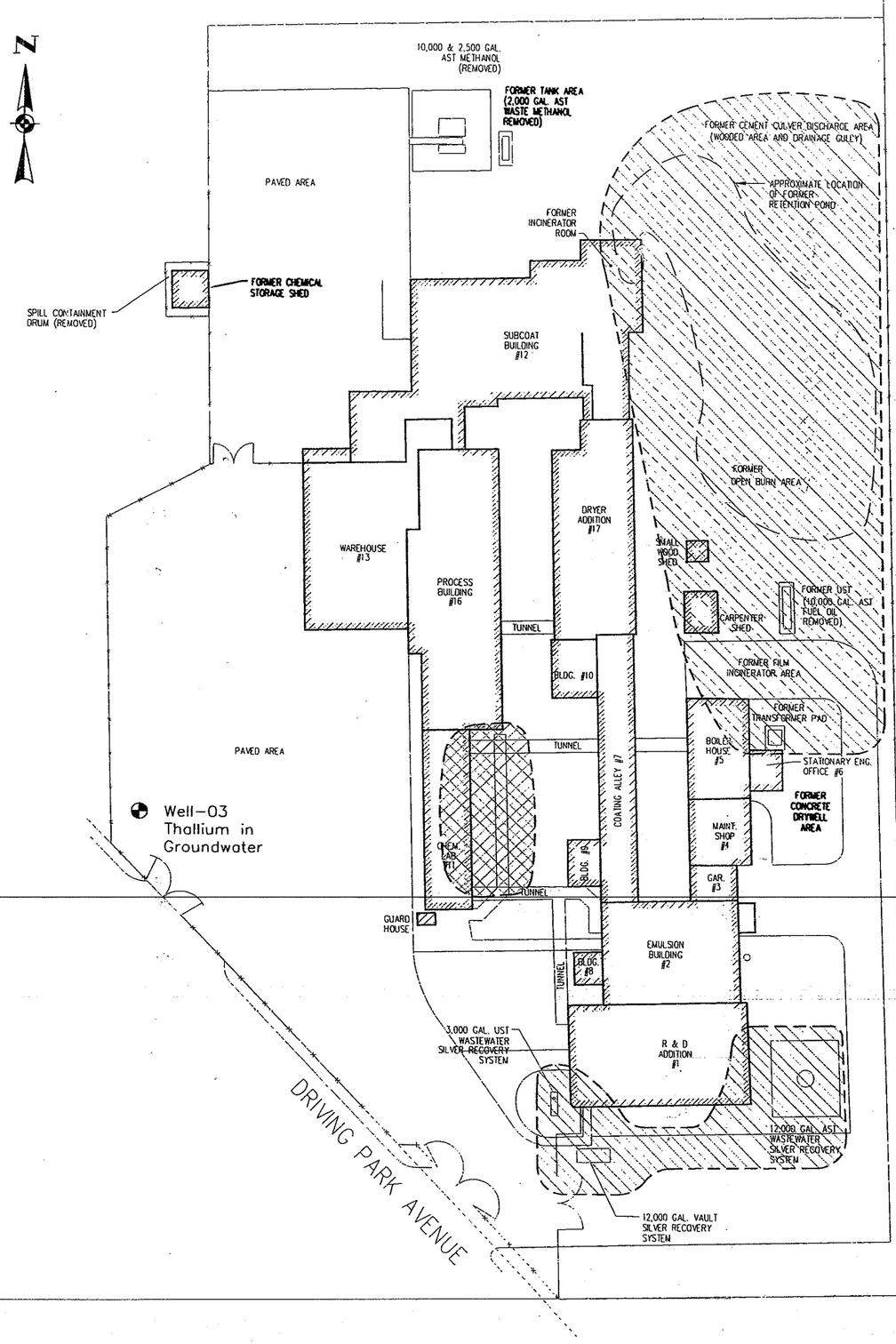
PROJECT NO.
3198S-03

FIGURE 17

Ref1: Bose-1.dwg
Ref2:
Ref3:
Ref4:
Ref5:
Ref6:

Xerox432AnsiB-2: 11 x 17
Layout Name: Layout 1

Time Plotted: Mon Feb 07 14:20 2005
File Name: \Rocity\3198\SoilBase-6.dwg



LEGEND:

- Area of Concern #1: East of Chemical Lab Building #11
- Area of Concern #2: Silver Recovery Area
- Area of Concern #3: Eastern Portion of the Site
- FORMER TANK AREA (2,000 GAL. AST WASTE METHANOL REMOVED) — Area of Concern #4: Miscelloneous Areas (In Bold)
- Well-03 Monitoring Well

NOTES:

1. Figure Produced From An undated CAD Drawing By BRG Environmental titled "Site Investigation/Remedial Alternatives Project".
2. Location Of Former Retention Pond Based On A Drawing By Northrup, Koelber & Kopf, Titled "Site Plan & Details", Dated November 24, 1980 And Issue Dated November 26, 1980.

SITE PLAN
1"= 80'

0 40 80 120

DesignTag	DPN
DATE	12-19-2003
DRAWN BY	LRP
DATE DRAWN	12-19-2003
SCALE	1"= 80'
DATE ISSUED	12-28-2004

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT

DRAWING TITLE
Surface and Subsurface Areas of Concern

PROJECT NO.
3198S-03

FIGURE 18

Ref1:
Ref2: Base-2.dwg
Ref3:
Ref4:
Ref5:
Ref6:

Xerox432AnsiB-2; 11 x 17

Time Plotted: Tue Dec 28 12:20 2004
File Name: Rocity\3198\Figure-16.dwg

SEQR Determination

City of Rochester

Inter-Departmental Correspondence

To:	File
From:	Joseph J. Biondolillo, Division of Environmental Quality
Date:	October 10, 2006, Revised December 15, 2006
Subject:	Photech Imaging Systems, Inc. Cleanup Project: 1996 Title 5 Bond Act SEQR action

The Division of Environmental Quality is in the process of completing a 1996 Bond Act Title 5 remedial design and remedial action on a 12.5-acre parcel of land owned by the City of Rochester. This parcel is known as the former Photech Imaging Systems, Inc. (Photech) site, and is located at 1000 Driving Park Avenue in the City of Rochester. The entire parcel is located in an M-1 Industrial zoned area, and the parcel's use code is listed as Manufacturing (710). The Photech site was formerly used for the manufacture of specialty photographic film and paper.

In 1997 the City acquired the Photech site (Tax Account number 090.630-0001-001.000/0000) through foreclosure. The City conducted environmental investigations on the Photech site and, as a result of these investigations, the New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) in March 2006. The ROD for the Photech site specifies various remedial design investigations and remedial measures.

The NYSDEC has determined that remedial projects funded under Title 5 are subject to the State Environmental Quality Review Act (SEQR). The NYSDEC has requested that a SEQR determination be prepared which addresses the remedial design and remedial actions. The City's SEQR evaluation of the proposed action is as follows:

Chapter 48 (Environmental Review), Section 48-5 (Type II Actions), subpart B.(2) of the City of Rochester Code states that property rehabilitation and maintenance undertaken to achieve compliance with certain chapters of the Municipal Code, including Chapter 90 (Property Code), are Type II Actions under SEQR.II, and as such require no further environmental review or compliance with SEQR.

The Photech site contains 15 buildings totaling approximately 108,000 square feet. The Photech site has not bee used or occupied since March 1996 according to City Building Information System records, and previous investigations by the City have documented that several of the buildings contain damaged and friable asbestos, and some of the building equipment and building materials (e.g., floors, walls, etc.) are contaminated with heavy metals and other contaminants. In addition, most of the buildings are in a damaged and dilapidated condition, and several buildings exhibit significant structural damage due past fires and water infiltration. In October 2006 Herrick-Saylor Engineers, P.C. (Herrick-Saylor) conducted a site visit to observe the condition of the Photech buildings for potential safety and structural conditions. Herrick-Saylor issues a written letter report dated November 13, 2006 which concluded that the overall structural condition of the buildings was poor, and primary and secondary structures appeared damaged, and that ". . . most of these buildings should be considered structurally unsound and therefore unsafe." A copy of the Herrick-Saylor letter report is attached to this memo.

The City's Property Code Chapter 90, Section 90-17 (Vacant Properties) states that certain vacant structures do not possess the protective measures normally provided by legal occupants, making such structures subject to unlawful entry, vandalism and fires, and therefore, these vacant structures present a potential health and safety hazard to the general public, the immediate neighbors and residents and public employees performing municipal duties and services. The City's Property Code Chapter 90, Section 90-17(D) established standards of safety and sanitation, and states that a vacant building is neither safe nor sanitary when the building walls or other structures are in poor structural condition, the building and its contents constitute a fire hazard, violations of the Property Code exist which are danger to health, safety or public welfare, or other conditions exist which endanger the health, safety or welfare of the public. A copy of the Herrick-Saylor letter report dated November 13, 2006 was provided to the City of Rochester Department of Community Development for review in order to make a determination regarding the need for immediate demolition due to structural and safety issues associated with the former Photech buildings. In a Inter-Departmental Correspondence dated December 15, 2006, Mr. Joel Smith of the Department of Community Development issued an Inter-Departmental Correspondence (IDC) dated December 15, 2006 to Joseph Biondolillo, City DEQ, stating that the condition of the Photech buildings causes an immediate danger pursuant to Part 46A-16 C(1) of the Code of the City of Rochester and should demolished as soon as possible.

Abatement, building decontamination and demolition of structures, in part, to meet these code requirements, is a critical part of the Photech cleanup project. These actions are consistent with Section 48-5.B of the City of Rochester Code. The proposed remedial action was reviewed by City legal, environmental, and zoning staff. Based on Chapter 48 of the City of Rochester Code, the proposed Photech cleanup and remediation project is classified as a Type II Action.

G:\ENVQUAL\BIONDOLILLO\Photech\Cleanup\Revised SEQR.wpd