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WORK PLAN
For
REMEDIAL INVESTIGATION

For

FORMER CRESCENT PURITAN LAUNDRY (EASTMAN COMMONS)

NYSDEC SITE # C828163
1630 DEWEY AVE AND 161 PALM STREET
ROCHESTER, NEW YORK

Prepared for:

Norstar Development USA, L.P.
200 South Division Street
Buffalo, N.Y. 14204

Prepared by:

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, N.Y. 14227

Revised: September 2011

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
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Joe Martens
Commissioner

September 16, 2011

1630 Dewey Avenue, LLC
Mr. Eduardo Z. Ronquillo
14 East 28th Street
New York, NY 10016

Dear Mr. Ronquillo;

Re: Work Plan For Remedial Investigation
Former Crescent Puritan Laundry - Site #C828163
June 2011
City of Rochester, Monroe County

The New York State Department of Environmental Conservation (NYSDEC) has completed its review of the Work Plan For Remedial Investigation (Work Plan) dated June 2011 and prepared by Panamerican Environmental, Inc for the Former Crescent Puritan Laundry site in the City of Rochester, Monroe County. NYSDEC has determined that the Work Plan, with modifications, substantially addresses the requirements of the Brownfield Cleanup Agreement. The modifications are outlined as follows:

1. **Waste Management- Soil:** All drill cuttings will be drummed. Drill cuttings that do not appear to be impacted based on field screening (PID readings, odor, visual assessment, etc) may be re-used on site under a minimum of 2 feet of clean fill or under paved sections. Soil cuttings that appear to be impacted based on field screening will be sampled and analyzed. If the soil appears to be grossly contaminated, or the results exceed restricted residential soil cleanup objectives, the soil will be disposed of off-site at an approved landfill and in accordance with all Federal, State, and local laws and regulations.
2. **Waste Management- Water:** The statement in section 3.2 of the Field Sampling Plan that well development water will be placed on the ground surface is deleted. Development water, purge water and decontamination water will be drummed and managed off-site in accordance with all Federal, State, and local laws and regulations.
3. **Section 5:** Monitoring well and soil vapor sample locations will be obtained in the format needed for the NYSDEC EQuIS Electronic Data Deliverable (EDD). Monitoring well elevations will also be surveyed to the nearest 0.01-ft.
4. **Section 5.2.1:** Except for MW-RI-05, soil samples will be collected and analyzed for TCL VOCs plus TICs if field screening indicates the potential presence of elevated levels of VOCs. Additional analyses for other contaminants will also be performed, if warranted, based on the field screening. This sampling would also not include fill material that is visually consistent with fill material that was previously sampled and analyzed.
5. **Section 5.2.1:** Groundwater monitoring wells will be installed using the procedure provided in section 3.1 of the Field Sampling Plan.
6. **Section 5.2.1:** The IRM Work Plan specifies one year of quarterly groundwater sampling for wells MW-01, MW-02, MW-03, MW-04 and MW-05; all of which have since been removed or destroyed by IRM and construction activities. Based on Figure 6 of the Work Plan For Remedial Investigation, original wells MW-01, MW-02, and MW-05 will be replaced with new wells MW-RI-05, MW-RI-06, and MW-RI-08, respectively. In order to meet the groundwater monitoring requirements of the IRM Work Plan, replacement wells for MW-03 and MW-04 will also be installed.
7. **Section 5.2.2:** Groundwater samples will be collected 1 to 2 weeks after well development.

8. **Section 5.2.2:** Groundwater elevations in each well will be measured prior to groundwater sample collection. These data will be used to prepare groundwater elevation contour maps which will be included in the Remedial Investigation report.
9. **Section 5.2.2:** Metals samples will not be filtered unless specifically approved by NYSDEC.
10. **Section 5.3:** The soil vapor samples will be analyzed at an ELAP approved laboratory.
11. **Section 8:** In addition to the required paper copies, all final reports will be provided electronically in a format acceptable to NYSDEC. Data will also be submitted to the NYSDEC EQuIS administrator in an acceptable EDD.
12. **Section 8:** The revised schedule is provided in Attachment 1. It is understood that dates for NYSDEC approvals and NYSDEC documents, such as the Proposed Decision Document, are estimates and that the Applicant will be held accountable for meeting the schedule relative to NYSDEC approvals.
13. **Figure 6:** The location of well MW-RI-06 is adjusted as shown in Attachment 2. The final well locations will be determined in the field based on utility locations and other field conditions.
14. **Quality Assurance Quality Control Plan, Table 1:** Trip blank samples (for VOCs) and MS/MSD samples will be collected and analyzed at the frequency specified in section 5.2 of the Quality Assurance Quality Control Plan.
15. **Field Sampling Plan- Section 6.0:** The EQuIS EDD requires all sample identification codes for a site to be unique. The sample identification code format will be modified, as needed, to ensure that sample identification codes are unique. This may include adding a date code to ensure that unique identification codes are used for groundwater samples collected on different dates from the same well.

With the understanding that the above noted modifications are agreed to, the Work Plan is hereby approved. This approval does not extend to the worker safety elements of the Health and Safety Plan as NSYDEC is not responsible for the health and safety of site workers.

Prior to the start of field work please sign the certification page, attach this letter to the hard copies and the electronic copies of the Work Plan, and distribute the Work Plan as follows:

- Frank Sowers (NYSDEC, Avon) - 2 hard copies, 1 electronic copy;
- Justin Deming (NYSDOH, Troy) – 1 electronic copy;
- Jeff Kosmala (Monroe County Health Department) - 1 electronic copy; and
- Maplewood Public Library - 1 hard copy.

The hard copies of the Work Plan should be submitted double-sided. Submit the electronic copies on a CD as a single, searchable pdf file with major sections bookmarked. Additionally, please notify me at least 7 days in advance of the start of field activities.

If you choose not to accept the above modifications, you are required to notify this office within 20 days after receipt of this letter. In this event, I suggest a meeting be scheduled to discuss your concerns prior to the end of this 20-day period.

We look forward to working together to bring this site back into productive use. Please contact me at 585-226-5357 if you have questions or concerns on this matter.

Sincerely,

Frank Sowers

Frank Sowers, P.E.
Environmental Engineer II

Attach:
1-Revised Schedule
2- MW-RI-06 Revised Location

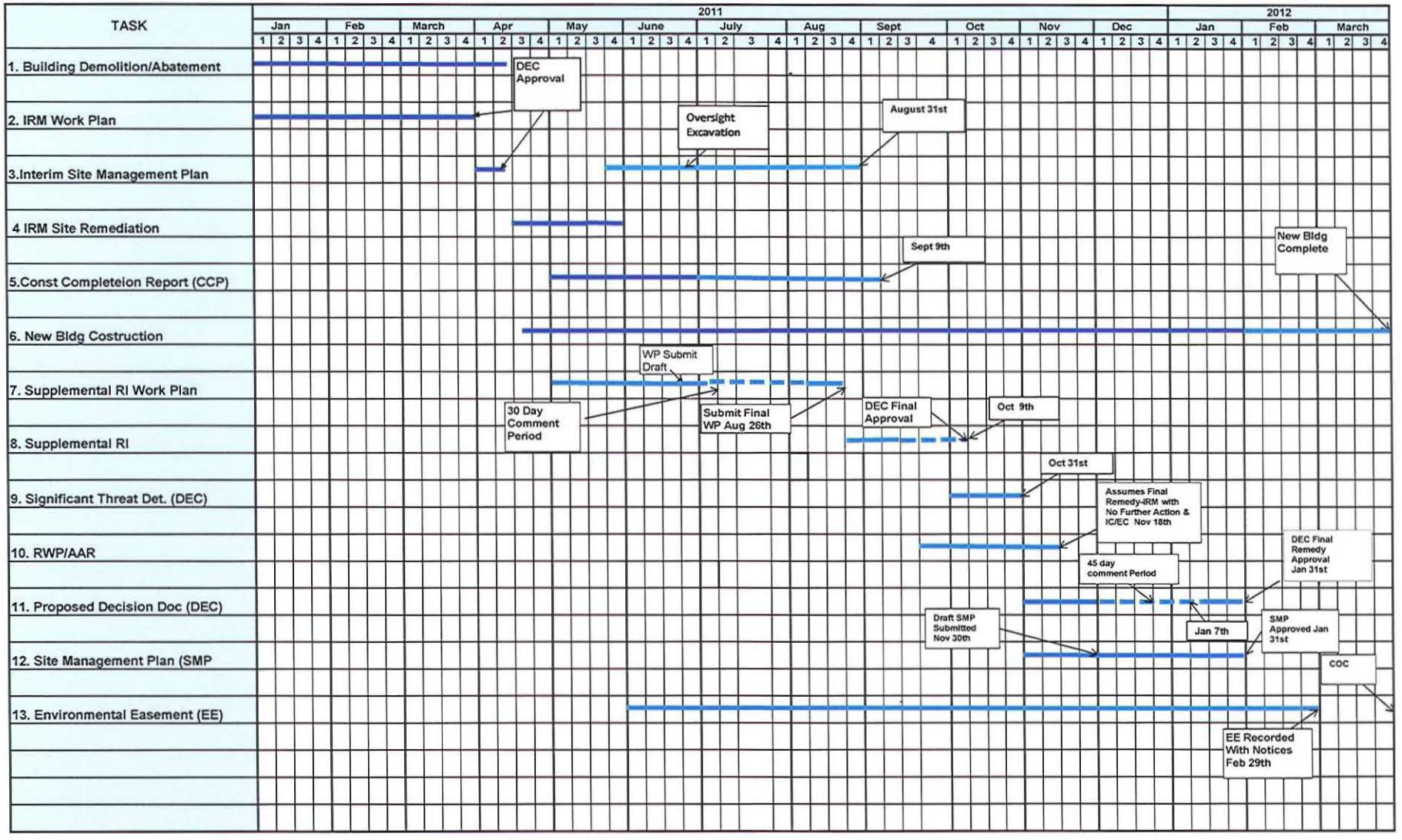
ec:

J. Bradley	J. Deming	B. Putzig
J. Kosmala	L. Harris	J. Berry
P. Gorton	C. Slater	

ATTACHMENT 1

BCP SCHEDULE 8-16-11

1630 Dewey Ave BCP Site # C828163



ATTACHMENT 2

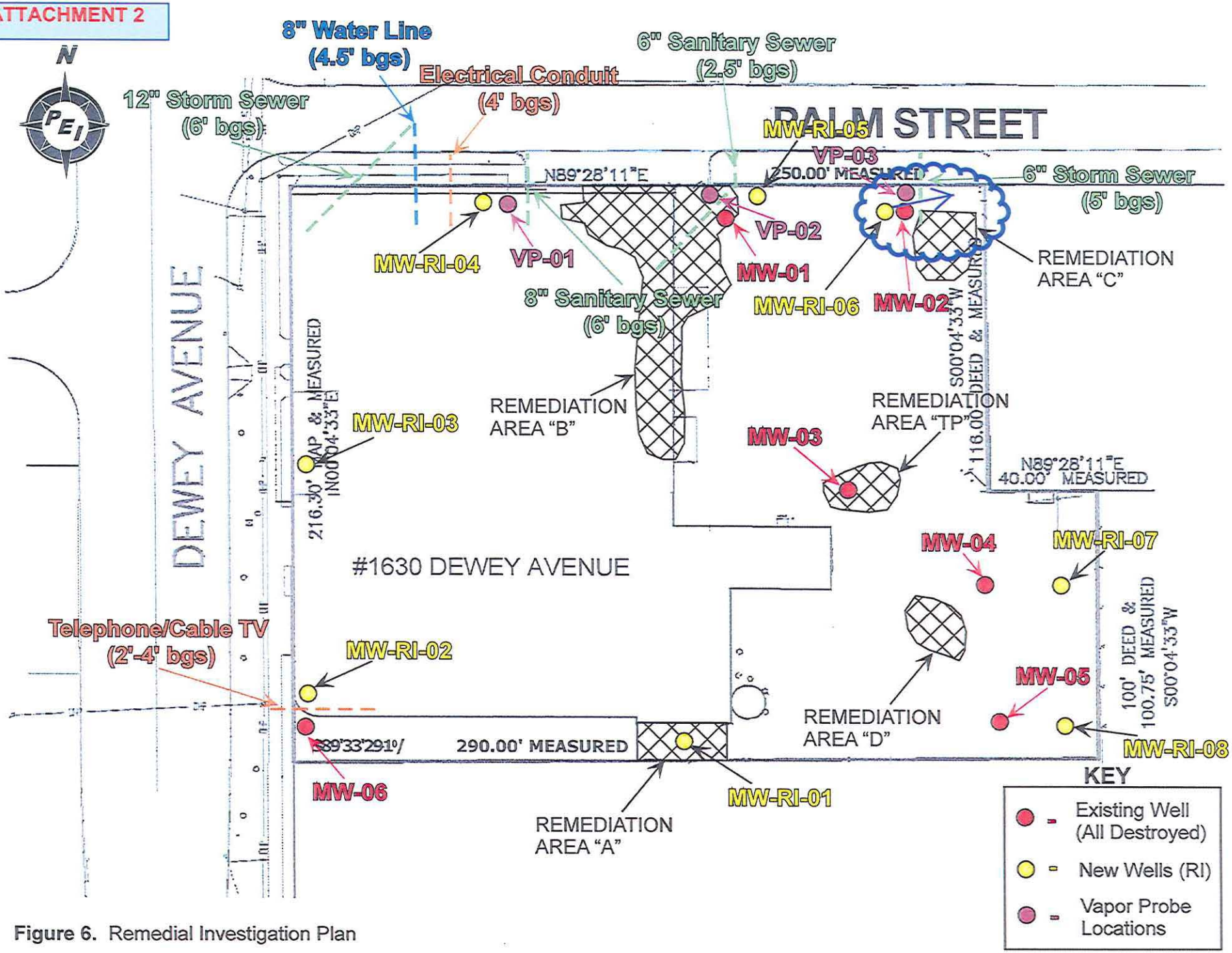


Figure 6. Remedial Investigation Plan

WORK PLAN

For

REMEDIAL INVESTIGATION

FORMER CRESCENT PURITAN LAUNDRY

SITE # C828163
1630 DEWEY AVENUE, 149 AND 161 PALM STREET
ROCHESTER, NEW YORK

Prepared for:

1630 Dewey Avenue, LLC
C/o Norstar Development USA, L.P.
200 South Division Street
Buffalo, New York 14204

Prepared by:

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227

Revised September 2011

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1.0 INTRODUCTION

This document presents details of a work plan designed to support a Remedial Investigation (RI) at the Former Crescent Puritan Laundry site (Site) located at 1630 Dewey Avenue and 149 and 161 Palm Street in the City of Rochester, New York. Presently, 1630 Dewey Avenue, LLC is under contract to purchase these three contiguous properties (1630 Dewey Avenue and 149 and 161 Palm Street) that comprise the Site. 1630 Dewey Avenue, LLC (for this work plan will be designated as "owner") will conduct a remedial investigation and remediate the site under New York's Brownfield Cleanup Program (BCP). The owner plans, upon completion of remediation, to redevelop the site by construction of an 80 unit affordable residential housing complex. Figure 1 shows the location of the Site.

A number of environmental studies/investigations (refer to Section 3) completed at the site to date concluded that there are impacted site soils and groundwater due to UST releases and past uses of the property. Site soils have been impacted with petroleum related compounds and groundwater with low levels of dry cleaning type solvents. An IRM has just been completed that included: the removal of existing USTs; excavation and off-site disposal of impacted soils; and limited groundwater treatment to allow for the redevelopment of the property and to maintain a safe environment for the community. Prior to the IRM the Former Crescent Puritan Laundry building was demolished and all building materials disposed off-site at an NYSDEC approved landfill. The Site Remediation IRM and the building demolition are discussed in Section 4.0.

The demolition/removal of the building, debris and building materials is covered under a separate work plan *(Work Plan For Demolition Of Former Crescent Puritan Laundry (Eastman Commons), 1630 Dewey Avenue, 149 And 161 Palm Street Rochester, New York Prepared for Norstar Development USA, L.P. Prepared by Panamerican Environmental, Inc. Revised September 2010.).*

The remaining sections of the work plan discuss: goals and objectives of the investigation (Section 2.0); the investigation scope of work (Section 5.0); supplemental field investigations that maybe required as a result of the IRM (Section 6.0); a qualitative exposure assessment (Sections 7.0); oversight and reporting requirements (Section 8.0); and, work plan PE certification (Section 9.0). Appendix A provides a site specific Health and Safety Plan (HASP); Appendix B Citizens Participation Plan; Appendix C-Quality Assurance Quality Control Plan; Appendix D-Field Sampling Plan; and, Appendix F-project schedule.

1.1 Site History and Description

The subject site contains three adjacent parcels located in the City of Rochester at the southeast corner of Dewey Avenue and Palm Street (refer to Figure 1). The area is historically mixed residential/commercial. The 1630 Dewey Avenue property contained a vacant approximately 52,000 square foot 2-story brick, former commercial laundry facility that was recently demolished.

The facility operated as a commercial laundry (Crescent Puritan Laundry) since at least the late 1920's to the mid 1970's or early 1980's. Now vacant, the property had various tenants after the laundry closed which included plastic fabrication, printing, tool machining, bathroom and kitchen cabinet sales, and other commercial/retail uses through the early 1980's and 1990's. Some of the tenants included DJ Printing, Monroe Micro film, Samson's Gym (second floor) and Vella Bath & Kitchen. The 149 and 161 Palm Street properties currently form an asphalt covered parking area behind the former laundry facility. These properties were historically used to support the laundry facility and historically contained vehicle garage and petroleum storage operations most likely to service laundry operations.

The adjacent property to the east is an automobile service and repair operation which has operated in this capacity since at least the 1950's. Further east and north is residential and beyond that is Kodak Park, a division of Eastman Kodak. North of the parcels along Palm Street is residential. The adjacent properties north along Dewey Avenue at Palm are commercial/retail including a Sunoco gasoline station. West of the properties across Dewey Avenue are an industrial facility (Steko) and other commercial/retail establishments including a motor cycle shop, auto service center, and a carpet center. The Steko property has a long history as the Clark Steko Corporation which was a large commercial building that may have been associated with paper manufacturing and supply as early as the 1920's. South of the properties across an alleyway (Industrial Alley – former railroad line) is mixed residential and retail/commercial including an insulation, roofing and gutter repair store and advent auto

1.2 Contemplated Use of the Site

The proposed new development on the property will include the acquisition of the 1.34 acre site which consists of 1630 Dewey Avenue, and 149 and 161 Palm Street for the development and construction of an 80 unit affordable residential housing complex. The new facility will include a building of three stories with an approximate 25,000 square foot footprint. The Dewey Avenue complex will provide permanent rental units where residents will execute standard lease agreements. The new building will be sustainable designed to provide mixed use functionality; first floor space on Dewey Avenue to include office space and meeting rooms to preserve the commercial street character. This space can be used as office or commercial depending upon the market need upon completion. The residential units will be located behind the office space creating a "U" shaped building with a courtyard entrance from Palm Street. The Dewey Avenue project called Eastman Commons will include an on-site professional property manager which will provide 24/7 attended reception and a security system for the entire complex.

1.3 Project Organization

The following are the lead personnel on the project team:

Project Manager - Peter J. Gorton, CHCM
Project/Remedial Engineer - John Berry, P.E.

Project Geologist - Justin Ryszkiewicz
Project Health and Safety - Peter J. Gorton, CHCM
Project QA/QC - Frank Schieppati, Ph.D.

Analytical Laboratory – Paradigm Environmental
Drilling/Excavation subcontractors – to be determined

2.0 GOALS AND OBJECTIVES

2.1 Overall RI Objectives

In general, a remedial investigation has the following overall objectives as described in NYCRR Part 375-1.8(e):

- Delineation of the areal and vertical extent of the contamination at, and emanating from all media at the Site and the nature of that contamination;
- Characterization of the surface and subsurface characteristics of the site, including topography, surface drainage, stratigraphy, depth to groundwater, and any aquifers that have been impacted or have the potential to be impacted;
- Identification of the sources of contamination, the migration pathways and actual or potential receptors of contaminants;
- Evaluation of actual and potential threats to public health and the environment; and,
- Production of data of sufficient quality and quantity to support the necessity for, and the proposed extent of, remediation and to support the evaluation of proposed alternatives.

The scope and goals specific to this work plan are summarized below and are based on the results of investigations completed to date and those remaining to satisfy the objectives above. If necessary, the RIWP will be supplemented with additional work plans, as needed, to meet the overall objectives of the RI.

2.2 Specific RI Objectives

Specific objectives of the RI are as follows:

- Install and sample perimeter groundwater samples to assess groundwater impacts from off-site and on-site sources by evaluating groundwater quality entering and leaving the site;
- Install and sample soil vapor probes along the north site perimeter to determine whether actions are needed to address exposures to volatile chemical contamination related to soil vapor intrusion; and,
- Fill any data gaps resulting from previous assessments and the IRM Site Remediation.

The scope of work to complete these objectives is provided in Section 5.0 along with a

discussion of supplemental field investigations that may be required to fill data gaps.

2.3 Contaminates of Concern

Based on the findings related to historic use of the Site and previous investigations, the contaminates of concern (COCs) are petroleum and solvent based VOCs and SVOCs in the groundwater and soils.

3.0 ENVIRONMENTAL CONDITIONS/PAST INVESTIGATIONS

3.1 Past Investigations/Remediation Summary

Asbestos Surveys

The following pre-demolition asbestos surveys were conducted at the existing vacant Crescent Puritan building before it was demolished:

- Asbestos Survey complete by Galson Corporation for the City of Rochester, Department of Environmental Services, dated February 1999.

- Limited Asbestos Containing Materials Survey completed by Bergmann Associates for Norstar Development USA, L.P., dated December 1999.

The limited Bergmann survey was limited to an assessment of building materials that that may not have been included in the earlier Galson survey. Both surveys indicated the presence of asbestos containing materials (ACM) throughout the building.

Asbestos removal and demolition of the building are discussed in section 4.0 Interim Remedial Measures.

Soil and Groundwater Investigations/Assessments

A series of investigations and site assessments have been completed at the property including:

- Phase I and Phase II Environmental Site Assessment completed by Galson Corporation for the City of Rochester Department of Environmental Services in 1999.
- Addendum to The Phase I Environmental Site Assessment: Final Report FOIA Response from NYSDEC completed by Galson in April 1999.
- Modified Phase I Environmental Site Assessment for 149 and 161 Palm Street, Rochester, New York. Completed by Day Environmental, Inc. for the City of Rochester, April 19, 2000
- Phase I/II Environmental Site Assessment for 1630 Dewey Avenue and 149/161 Palm Street. Completed by PEI for Norstar in September 2006.

- Follow-up Phase II ESA 141 and 161 Palm Street, completed by PEI, for Bergmann Associates, March 2010;
- Follow-up Phase II ESA 1630 Dewey Avenue, completed by PEI, for Bergmann Associates, March 2010;
- Supplemental Site Characterization 1630 Dewey Avenue Rochester, New York. Completed by ATC Associates for Norstar in July 2010
- Supplemental Investigation of Historic Fill Material and Soil Sampling to Fill Analytical Data Gaps. Completed by PEI for Norstar, April 2011.
- Interim Site Management Plan (ISMP) Soil Characterization for New Site Development

Based these investigations, petroleum-like contamination was found in site soils in certain areas of the property and dry cleaning solvents were found in groundwater along the northern border of the property. To address the source areas of apparent petroleum release and the relative low levels of dry cleaning solvents in downgradient wells, interim remedial measures (IRMs) have been undertaken. The Site Remediation IRM is discussed in detail in Section 4.0.

NYSDEC Spill Information

New York State Spill Information records include the following:

- 1994 spill report (NYSDEC # 9410948) involving an abandoned drum found on the property. The drum was not found to be leaking, was over-packed and removed and the spill closed by NYSDEC in 1995.
- 2002 response involving the pumping of water from the basement. The fire department was informed that hazardous materials were stored in the basement. None were found and a no further action was filed.
- NY Spills - associated with the 2006 PEI Phase I/II investigation (NYSDEC #0651267) still opened pending closure during re-development.

Based on the findings of the various assessments, a corrective action plan (CAP) was developed and submitted to NYSDEC for the remediation and re-development of the property. The planned remedial actions (IRMs) for the property are presented below.

3.2 Historic Investigations/Analytical results

As noted in section 3.1 there have been a number of site investigation programs completed at the site. PEI investigations since 2006 overlapped or were follow-up investigations to earlier investigations by others. There were only two intrusive investigations at the site prior to 2006 by others. In 1999 Galson conducted a soil gas survey as part of there Phase 1 and 2 ESA. The program consisted of inserting four foot hollow rods at locations around the north, east and south perimeter of the old building in locations of suspect UST possible dry cleaning locations. The sampling of the probes indicated no significant soil gas contamination Report excerpts and analytical results from the Galson program are provided in Appendix F. The second investigation was conducted by Day Environmental in 2000 and included the installation of a number of test pits across open areas of the site

and sampling of suspect soils. PEI conducted follow up investigations described later in this section that included further evaluation of impacted areas determined by Day's program. Report excerpts and analytical results from the Day program are also provided in Appendix F.

An abbreviated investigation was also conducted by ATC concurrent with PEI's 2010 investigations. ATC installed several hand augured borings, within the northern half of the old building, beneath the concrete floors, and installed two temporary groundwater monitoring wells along the building exterior north side property perimeter. No contaminates of concern were detected in any of the interior soil boring samples. The western most exterior well groundwater sample indicated the presents of PCE and this area will be investigated further during this RI program (see Tables (ATC) 1 and 2 for soil and groundwater analytical results). Report excerpts and analytical results from the ATC program are provided in Appendix G.

PEI Investigation Programs

PEI Investigation programs included test pit and/or soil boring installation programs with the conversion of select borings to groundwater monitoring wells. During these programs a number of soil and groundwater samples were collected and analyzed. The following is a description of soil and groundwater sampling and analytical programs previously conducted by PEI. Sampling locations for PEI investigations prior to 2011 are provided on Figure 2. Sampling locations for the most recent supplemental and ISMP investigations are provided on Figure 4.

2006 Phase 2 ESA

A total of fourteen (14) soil borings were installed at various locations across the property to assess general subsurface conditions and in specific locations. The general boring/sample locations are shown on Figure 2. The subsurface assessment concentrated on areas identified in previous investigations as possible locations of historic USTs and where impacted soils were detected.

Soil from each boring was visually described and screened using a total organic vapor analyzer (photoionization detector - PID). Stratification of material in the borings and observations were noted on boring logs which were appended to the report. The soil from Borings BH-01, BH-04, BH-09 and BH-14 exhibited above background readings on the PID. Based on these results and visual observations, a soil sample was obtained from each of the four borings and analyzed for VOCs (EPA method 8260B) and SVOCs (8270C) plus tentatively identified compounds (TICs).

Unvalidated analytical results from the soil sampling program are summarized in Table 1.

2010 Follow-up Phase 2 ESA

This follow-up investigation is described in two separate reports split between the Dewey Ave Parcel and the Palm Street parcel, though the field investigation for both parcels was

conducted at the same time. The combined investigation results are summarized as follows:

Basement Sub-slab Assessment: To evaluate potential impacts under the basement floor from historic operational practices six (6) borings were completed to refusal below the basement slab. The slab was cored and the soil beneath hand augured until refusal or approximately four (4) feet. Soil samples were taken for analysis and real time PID monitoring for volatile organic compounds was taken for the boring space and soil procured from the hand auguring activities. Borings are identified on Figure 2 as DP-SF-01 through 06.

One soil sample was collected for analysis from four of the borings (SF-01, SF-03, SF-05 and SF-06). The samples were analyzed for TCL VOCs and SVOCs plus STARS (petroleum based compounds) and TICs. No elevated parameter concentrations were detected in any of the samples.

Unvalidated analytical results are summarized in Table 1.

Limited Geophysics: The investigation was conducted using an electromagnetic unit (Geonics EM61) at three (3) feet grid line spacing across the surface of the asphalt cement which covered an area in the rear and along the east side of the property; limited to and behind the subject building and adjacent to the building in the grass area. The survey was undertaken to detect ferrous and non-ferrous metals and to map the distribution of buried metal. Anomalies that may be related to buried USTs, metal pipes, or metal fill material were recorded and annotated on a site map provided in the report. The anomalies locations were used as a guideline for the test pitting program that followed (see below).

Test Pit Program: a series of test trenches were advanced to examine metal anomalies identified during the geophysical survey and/or areas near impacted soil found during past investigations. Additional trenches were advanced to better define the aerial extent of soil impact. The test trench program consisted of test trenches; TP-A, B, C, D, E1, E2, E3, and E4 as shown on Figure 2. Test pit TP-A advanced at anomaly A uncovered an 8000 gallon UST and impacted soil (Area A on Figure 2). Test pit TP-B advanced at anomaly B uncovered a 1000 gallon UST and impacted soil (Area B on Figure 2).

One soil sample was collected from both areas (TP-A and TP-B) and analyzed for the same parameters as the basement sub-slab samples noted above. No VOC or SVOC parameter concentrations were detected above Restricted Residential SCO. However, a few petroleum related VOC compounds were detect in both samples at low concentrations, and elevated concentrations of both VOC and SVOC TICs were detected in the TP-B sample. Unvalidated analytical results are provided in Table 1.

The IRM discussed in Section 4 was designed to remove the USTs and impacted soils from both these areas.

Groundwater Monitoring Well program: A total of six (6) groundwater monitoring micro-wells were installed using Geoprobe direct push technology. Boreholes were

advanced to an assumed maximum depth of twenty (20) feet, the top of bedrock, two (2) feet below the top of any confining layers, or five (5) feet below the groundwater surface, whichever was less. Monitoring wells MW-01 and MW-02 were installed at the downgradient perimeter of the site (North end). MW-03 and MW-04 were installed in the middle of the site near suspected impacted soil areas and MW-05 and MW-06 were installed at the up-gradient perimeter of the site (South end).

One groundwater sample was collect from each well and analyzed for the same parameters as the test pit and basement sub-slab samples.

MW-01 and 02 samples indicated the presence of elevated concentrations of Tetrachloroethene and 1,2-Dichloroethane above groundwater standards. The IRM addresses these elevated concentrations in the groundwater at the north (downgradient) of the site with the removal of USTs and impacted soil in the area and treating residual groundwater contamination with Accelerated Bioremediation (refer to Section 4.0).

Unvalidated analytical results are summarized in Table 2.

2011 Supplemental Investigation of Historic Fill Material and Soil Sampling to Fill Analytical Data Gaps

The work plan prepared for the Interim Remedial Measures to remove USTs and impacted soils form identified areas (See Section 4) included a supplemental investigation program. The intent of the supplemental field investigation was to advance several test trenches and collect/analyze soil samples to:

1- Fill in data gaps, particularly soil analytical data gaps, related to historic soil/fill material at locations (SI-01 to SI-04) outside of the IRM impacted soil areas A- D (refer to Figure 4);

2- Analyze select soil samples from within areas A through D (SI-A to SI-D) for parameters not previously tested for in the impacted areas; and,

3 – Assess the potential for impacted soil near TPD-3 (refer to Figure 2) installed during a 2000 investigation program where impacted soils were detected in this early assessment and not detected during later investigations.

The trenching and sampling occurred as the first stage of the Site Remediation IRM (refer to Section 4 for details of the IRM).

Soil samples SI-01 to 04 were analyzed for TCL VOCs + STARS + TICs; TCL SVOCs + STARS + TICs; TAL Metals plus cyanide; PCBs; and Pesticides.

Historic fill sample results (SI-01 to 04) met Part 375 Restricted Residential SCO with the exception of one sample, SI-03A, where four PAH compounds slightly exceeded Restricted Residential SCO as follows:

-Benzo(a)antrracene 1.0 ppm versus 1.0 ppm SCO
-Benzo(a)pyrene 1.1 ppm versus 1.0 ppm SCO
-Benzo(b)fluoranthene 1.1 ppm versus 1.0 ppm SCO
-Chrysene 0.7 ppm versus 0.5 ppm SCO

Most historic fill samples also met Part 375 Unrestricted SCO with the exception of minor exceedences of a few metals and pesticides.

The additional parameters (TAL metals plus cyanide; PCBs and pesticides) tested for in samples collected from the four impacted areas (A-D) did not indicate any exceedences of restricted residential SCO in any of the samples.

All soil sample analytical results are summarized in Table 3. All data in the table has been validated.

2011 Interim Site Management Plan (ISMP) Soil Sampling

Prior to excavating for the new building foundations and site development five soil samples were collected, in accordance with the ISMP, from primarily the west end of the site at various depths at locations were the old building had been removed (refer to Figure 5). The samples serve as background samples for fill material located beneath the old building. All samples were analyzed for the same parameters as those listed for the SI-01 to SI-04 samples.

ISMP fill sample results (ISMP-01 to 05) met Part 375 Restricted Residential SCO with the exception of one sample, ISMP-02, where two PAH compounds slightly exceeded Restricted Residential SCO as follows:

-Benzo(a)antrracene 1.2 ppm versus 1.0 ppm SCO
-Benzo(b)fluoranthene 1.2 ppm versus 1.0 ppm SCO

As per the ISMP additional samples have been collected and analyzed from soil excavated for new building foundations and basement areas. This material has been in most cases stockpiled but some material has been disposed off-site at the Mill Seat Landfill. As of the date of this WP eight soil samples have been collected and analyzed from stockpiled soils. None of the sample analysis exceeded restricted residential SCOs and with the exception very minor exceedences of three pesticide compounds in two of the samples they also did not exceed unrestricted SCOs.

All analytical results for ISMP samples to date are summarized in Table 4. The data for samples 1 through 5 on Table 4 has been validated. Sample 6 through 18 data is presently being validated.

4.0 INTERIM REMEDIAL MEASURES (IRM)

The following remedial action activities have been completed or are currently underway:

- Building demolition with removal of asbestos containing materials and C&D to landfill disposal;
- Source area UST and impacted soil removal with off-site disposal (IRM);
- A groundwater treatment using a hydrogen release type mixture placed in the northern site excavations to enhance natural bio-remediation of any residual petroleum or solvent compounds (IRM); and,
- Clean fill replacement during re-development

The rationale for the proposed remedial action was based on the results of the previous assessments, site needs and future development/use. The main objectives of the proposed remedial action was to implement an IRM to permanently close the USTs in accordance with NYSDEC Petroleum Bulk Storage (PBS) and DER-10 requirements and to remove all grossly contaminated soils (i.e. contamination that is readily detected without laboratory analysis Needed) and all soils from the designated impacted source areas containing contamination in excess of the Restricted Residential Soil Cleanup Objectives set out in of 6 NYCRR Part 375 and CP-51. Confirmatory soil samples were collected from the bottom/sidewall of excavations prior to backfilling.

Five separate petroleum source areas were identified:

- Area A - the area along and adjacent to the south-southeast side of the Dewey Street structure which is the location of an estimated 8,000-gallon fuel oil underground storage tank (UST). Assessment results in this area suggest limited soil impacts;
- Area B - the area along and adjacent to the northeast side of the Dewey Street structure which is the location of an estimated 1,000-gallon gasoline UST. Assessment results in this area indicate impacted soil towards Palm Street;
- Area C – the area of the former USTs identified in a previous investigation. This area appears to have limited soil impacts isolated to the general area;
- Area D – the grass covered area east of the boiler room in the Dewey Street Structure. This area indicated limited petroleum-like soils impacts to that area; and,
- A fifth area, located where Day Environmental's TPD-3 test trench was installed in 2000 and a subsequent test trench (SI-1) installed by PEI in 2011 has been identified as an impacted area (refer to Table 3 analytical results for SI-1)). The area remediated is identified as Remediation Area TP on Figures 4 and 6.

Four additional Smaller USTs were uncovered in Area B (refer to Figure 4) during the IRM which also may have attributed to the low levels solvents detected in the groundwater in the area. The tanks were very old and primarily partial filled with water and petroleum related liquid.

The IRM addresses the source areas of apparent petroleum release and the relative low levels of solvents in downgradient wells. These include the excavation, removal and disposal the two USTs and the impacted soil from the five "source" areas. Residual groundwater contamination was treated with Accelerated Bioremediation by the addition of a hydrogen release type mixture to the soil/water interface in the northern excavations

prior to clean fill replacement. This will reduce any residual levels of petroleum/solvents in groundwater detected in sampling of the original downgradient wells. The original wells were either disturbed or destroyed during the IRM activities and will be replaced under this RI (refer to Section 5.2).

5.0 INVESTIGATION SCOPE OF WORK

5.1 Introduction

As noted in section 2.2 Specific objectives of the RI are as follows:

- Collect perimeter groundwater samples to assess groundwater impacts from off-site and on-site sources by evaluating groundwater quality entering and leaving the site;
- Install and sample soil vapor probes along the north site perimeter to determine whether actions are needed to address exposures to volatile chemical contamination related to soil vapor intrusion; and,
- Fill any data gaps resulting from previous assessments and the IRM Site Remediation.

The recent Supplement investigation and the sampling conducted under the ISMP complete the third objective and fills in the data gaps.

The investigation scope of work for this work plan will concentrate on the first two objectives of groundwater and soil vapor assessment. The scope of work to accomplish each of these objectives is provided in the following sections.

5.2 Groundwater Investigation

As noted earlier the intent of the program is to monitor the quality of the groundwater at the site perimeter particularly where groundwater moves on to the site and where it leaves the site. To this end, the program will entail the installation of new monitoring wells around the site perimeter at new locations and at locations to replace destroyed existing wells.

5.2.1 Monitoring Well Installation

As discussed in section 3.1, a total of 6 monitoring wells were installed in 2010 and are shown on Figure 6. All six of these wells have been sufficiently disturbed or destroyed during the building demolition, IRM work and/or the new construction and are not usable for future sampling.

A total of eight (8) new wells are proposed for the RI identified as MW-RI-01 through 08 on Figure 6. The former locations of the original six (6) monitoring wells are also shown on Figure 6 for reference.

Boreholes for monitoring wells will be advanced to an assumed maximum depth of twenty

(20) feet, to refusal or the top of bedrock, two (2) feet below the top of any confining layers, or five (5) feet below the groundwater surface, whichever is less using Geoprobe direct push technology. Continuous soil sampling will be conducted using the Geoprobe with a two-inch diameter sampler resulting in two (2) to five (5) distinct sample cores, i.e. (0-4 feet, 4-8 feet, 8-12 feet, 8-12 feet, 12-16 feet). A field technician/geologist will log all samples, performed visual observations, and field screening of all core samples for volatile organic compound (VOC) concentrations using a photoionization detector (PID).

A micro-well will be installed in each boring. Each well will consist of a two-inch diameter, schedule 40 PVC casing equipped with a ten-foot screen and solid PVC riser pipe extending to the surface. Screens will be positioned to straddle the groundwater surface and will be extended to the bottom of the boring to ensure assessment potential for contaminants associated with the property.

The data (soil types, rock depth, groundwater depth obtained from installation of the first boring/micro-well) will be used to guide the installation of the remaining borings/micro-wells. Installation of wells will also adhere to the requirements provided in the Field Sampling Plan provided in Appendix D. Boring logs and well completion diagrams will be provided in the RI report.

All field work will adhere to the Health and Safety Plan provided in Appendix A.

5.2.2 Groundwater Sampling

One groundwater sample will be collected from each of the 8 wells. Well development and sampling will be in accordance with the Appendix D Fields Sampling Plan. Groundwater samples will be submitted to Paradigm Environmental Services Laboratory, a New York State approved laboratory and analyzed for:

- TCL VOCs + STARS + TICs;
- TCL SVOCs + STARS + TICs;
- TAL Metals + cyanide;
- PCBs; and
- Pesticides.

All sample analysis will be in accordance with ASP, Cat B requirements and all data will be validated. Metals analysis will be run for both unfiltered and lab filtered. QA/QC requirements for all sample analysis are provided in Appendix C Quality Assurance/Quality Control Plan.

All detected sample concentrations will be included in a table and compared to NYSDEC Groundwater Standards.

5.3 Soil Vapor Assessment

The primary objective of the soil vapor sampling is to evaluate the potential for site-related soil vapor to migrate off-site and to what degree soil vapor may represent an off-site

exposure concern. The NYSDEC will then use soil vapor data, along with the soil and groundwater data, to make a Significant Threat Determination. To achieve this objective three (3) soil vapor probes will be installed along the north perimeter (Palm Street) of the site, biasing the locations towards the following:

- Along the Area B north wall at the site perimeter where impacted soils are still present.
- Where north perimeter groundwater samples will be collected.
- Along preferential migration pathways such as underground utilities lines, especially utility lines that pass near an on-site impacted source area (Area B) or area of impacted groundwater. (Original monitory wells MW-01 & 02)

The three probe locations along with utility line crossing locations at the property perimeter are shown on Figure 6. The types of utility and approximate depths below grade are also shown. It appears that all utility runs exiting or entering the site are above the groundwater table. Based on the soil vapor analytical results an assessment will be made if various utility beddings may carry contaminate vapors off site.

Sampling and probe installation will be conducted in accordance with the NYSDOH guidance for evaluating soil vapor intrusion (NYSDOH Soil Vapor Intrusion Guidance-October 2006). A typical probe that will be installed using Geoprobe technology is shown on Figure 2.2 of the NYSDOH guidance document. Typically, samples will collected from a depth of approximately eight feet, (or at least one foot above the water table, whichever is shallower), tracer gas will be used to ensure that representative samples are collected, and flow rates do not exceed 0.2 liters per minute. The samples will be analyzed using USEPA method TO-15 and any tentatively identified compounds will also be reported. A sufficient volume of sample will be collected so that the sample may be re-run in the event the initial results exceed the laboratory calibration range.

6.0 ADDITIONAL SUPPLEMENTAL FIELD INVESTIGATION

All the data generated during the RI will be evaluated to determine if additional investigation activities are needed.

7.0 QUALITATIVE EXPOSURE ASSESSMENT

A qualitative exposure assessment will be completed in accordance with DER-10 sections 3.3(c) 3 & 4. The assessment will include what impacts site contaminates may have, if any, on all media (ground/surface water, soil, soil vapor, ambient air and biota). Human health and ecological exposure impacts will be assessed as outlined in DER-10 Appendix 3B Qualitative Human Health Exposure Assessment and Appendix 3C Fish and Wildlife Resources Impact Analysis Decision Key. The Appendix 3C Fish and Wildlife resources Impact Analysis (FWRIA) Decision Key is provided in Appendix G. No FWRIA is needed based on the completed decision key process. This determination is based on the following:

- The Site, prior to building demolition, was completely covered with the building

foot print and asphalt parking lot.

- There is no widespread soil contamination or habitat of an endangered, threatened or special concern species present; and
- There are no ecological resources present on or in the vicinity of the site (e.g. an urban site which is not proximate to a surface water body, wetland or other ecologically significant area).

The qualitative human health exposure assessment will evaluate the five elements (DER-10 Appendix 3B) associated with exposure pathways, and describe how each of these elements pertains to the Site. The exposure pathway elements that will be addressed include:

- A description of the contaminant source(s) including the location of the contaminant release to the environment (any waste disposal area or point of discharge) or if the original source is unknown, the contaminated environmental medium (soil, indoor or outdoor air, biota, water) at the point of exposure;
- An explanation of the contaminant release and transport mechanisms to the exposed population;
- Identification of all potential exposure point(s) where actual or potential human contact with a contaminated medium may occur;
- Description(s) of the route(s) of exposure (i.e., ingestion, inhalation, dermal absorption); and
- A characterization of the receptor populations who may be exposed to contaminants at a point of exposure.

As called for in DER-10 for volunteers in the BCP, sufficient field information and sampling data will be provided to identify the presence of contamination, if any, that maybe leaving the site to support qualitative off-site exposure assessments by others.

8.0 OVERSIGHT AND REPORTING

A Remedial Investigation report will be prepared in accordance with the applicable requirements of DER-10 and Part 375. A schedule is provided in Appendix F. We anticipate that upon completion of the 30 day public comment period we would conduct the RI beginning July 30st and complete field activities in approximately 2 weeks,

9.0 WORK PLAN CERTIFICATION

I, John B. Berry, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Remedial Investigation Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

John B Berry, PE

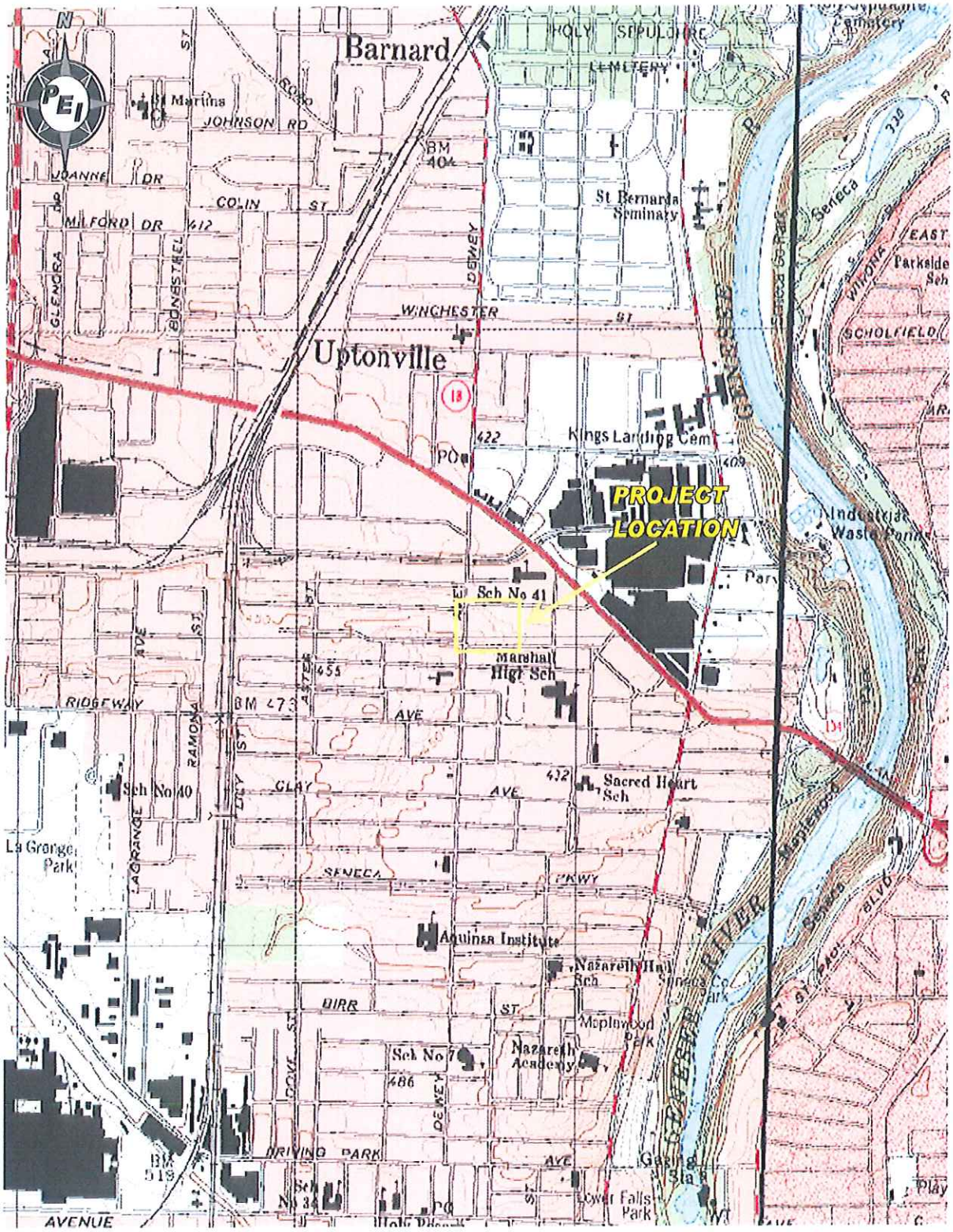
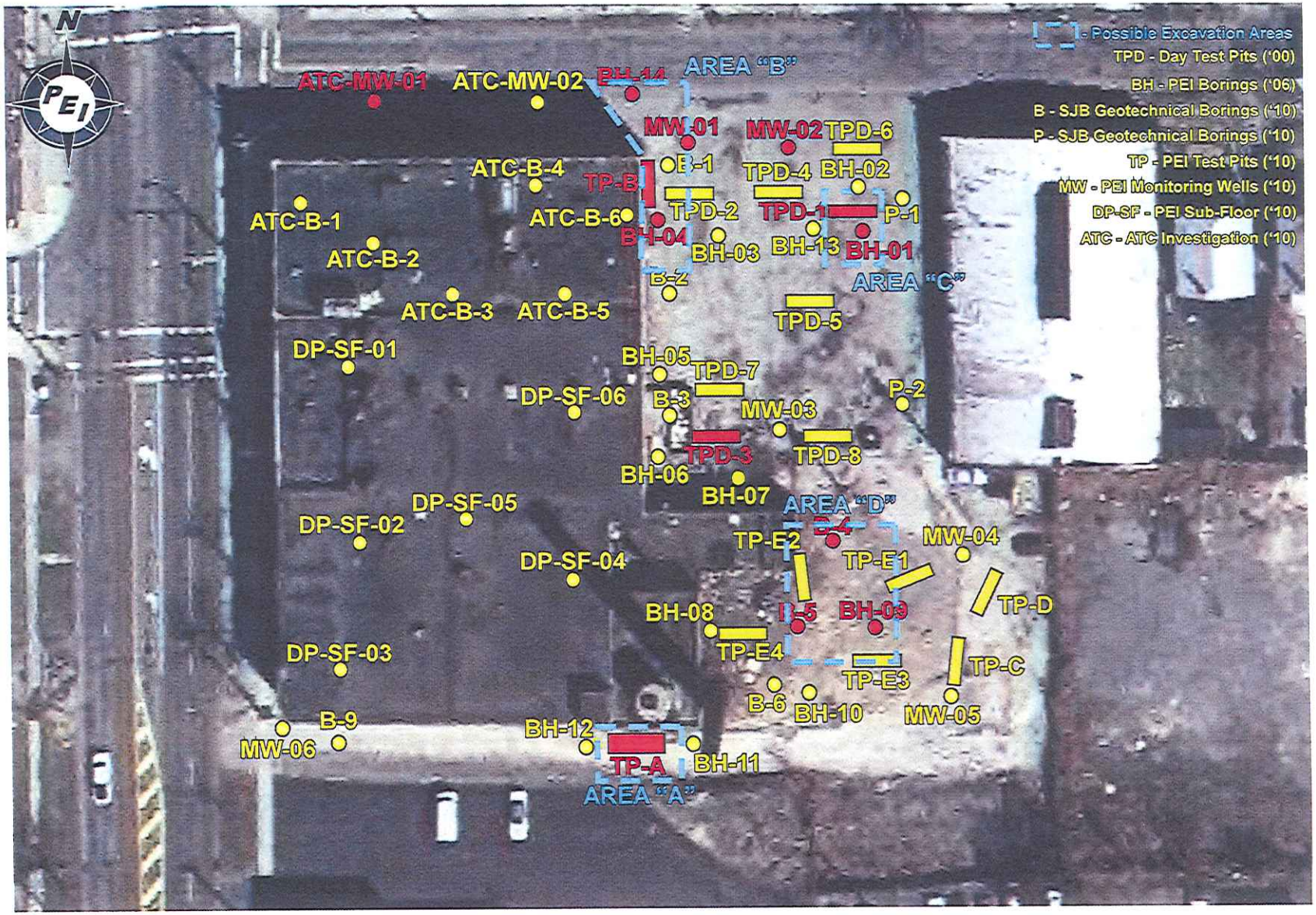


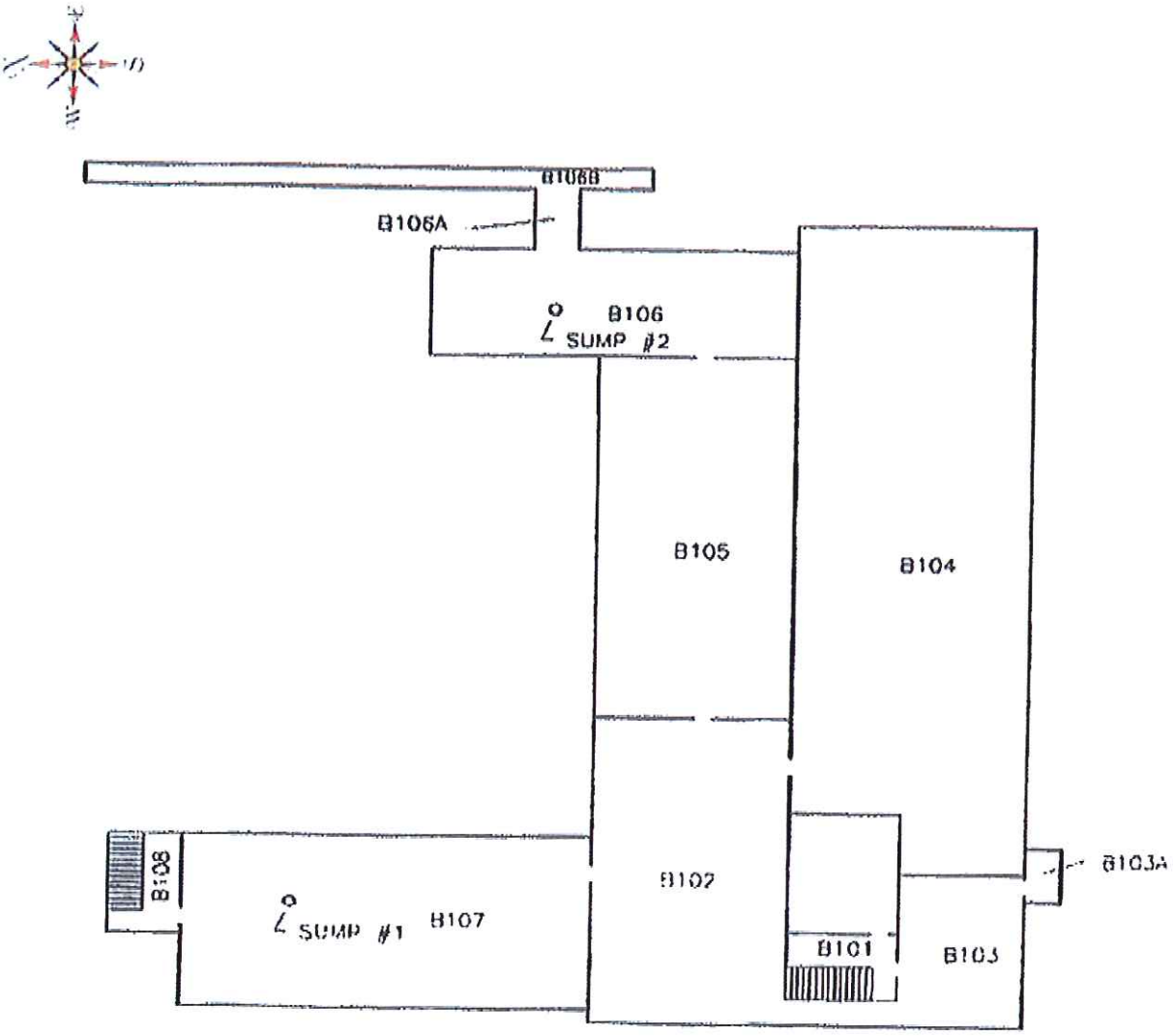
Figure 1. Project areas location in the City of Rochester, Monroe County, New York *(USGS 7.5' Quadrangle, Rochester West, NY).*



- / - Approximate piezomete/trench/boring location with no impact observed

- / - Approximate piezometer/trench/boring location with potential impact observed on PID and/or laboratory analysis

Figure 2. Investigation and Remediation Plan on 2005 Aerial Photograph at 1630 Dewey Avenue, 149/161 Palm Street, (Rochester, New York)



BASEMENT PLAN

JM

PEI	BASEMENT SUB-SLAB BORING LOCATIONS BERGMANN - DECEMBER 2009	Date March 2010 Figure 3

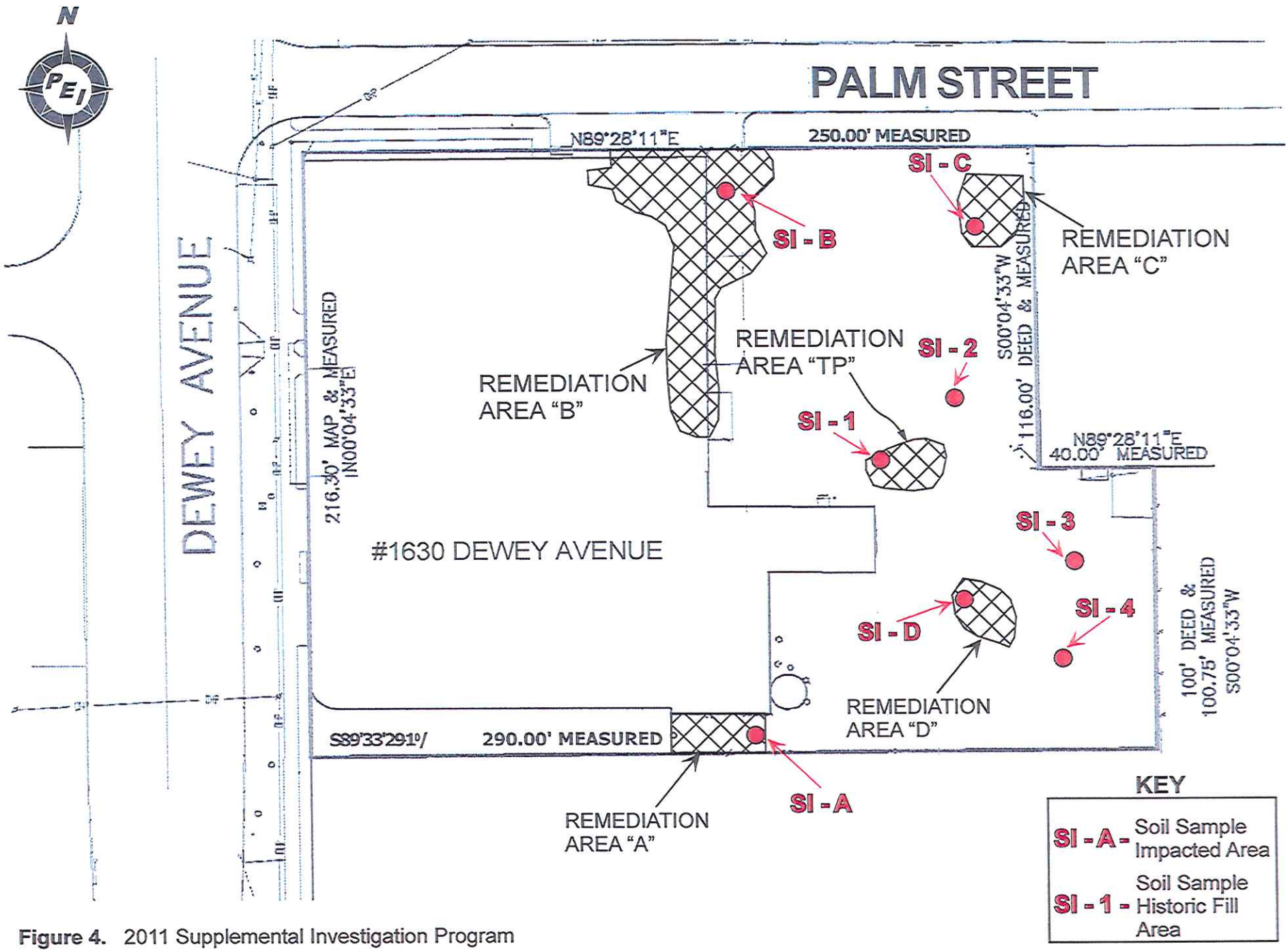


Figure 4. 2011 Supplemental Investigation Program

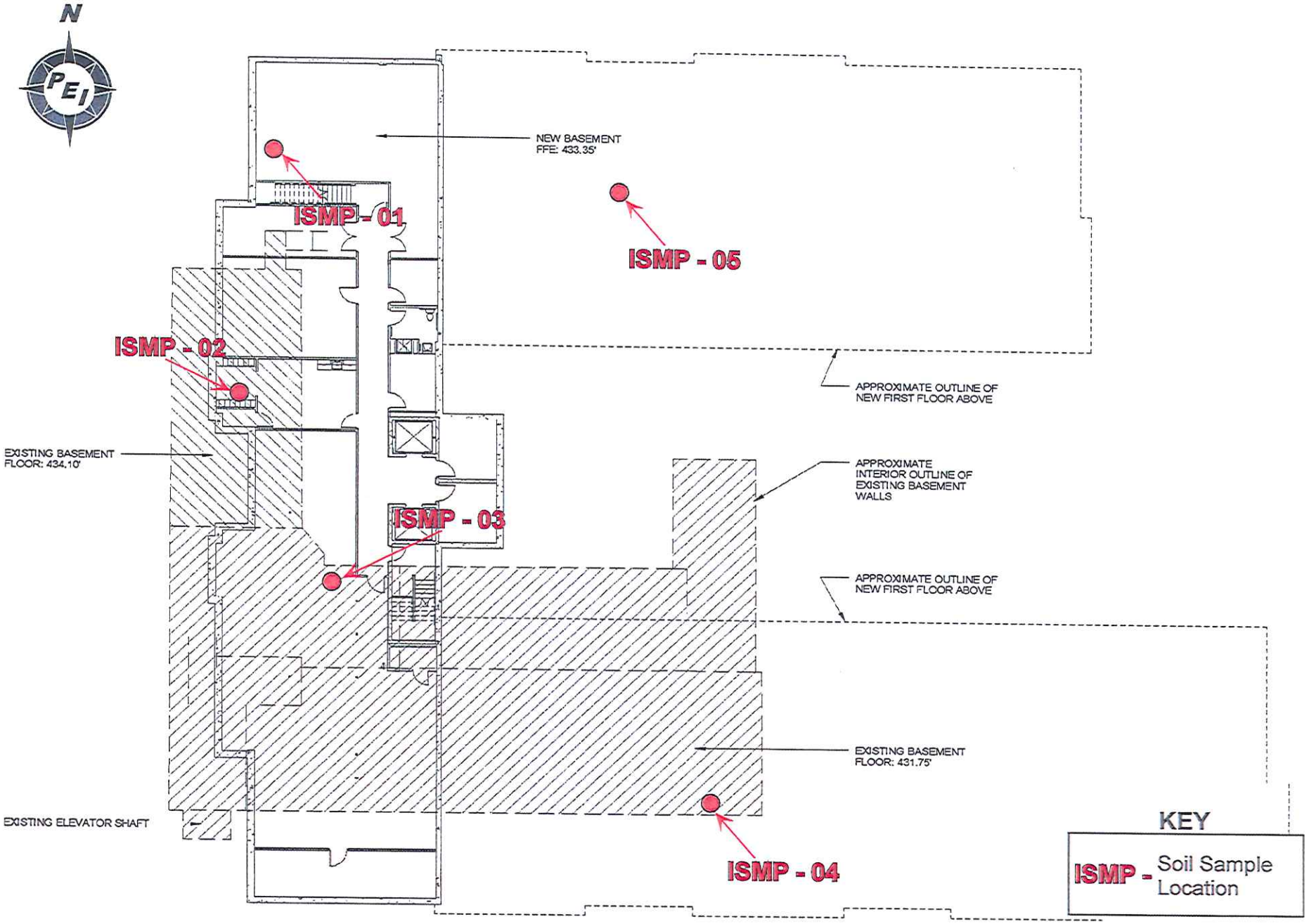


Figure 5. ISMP Sampling Locations

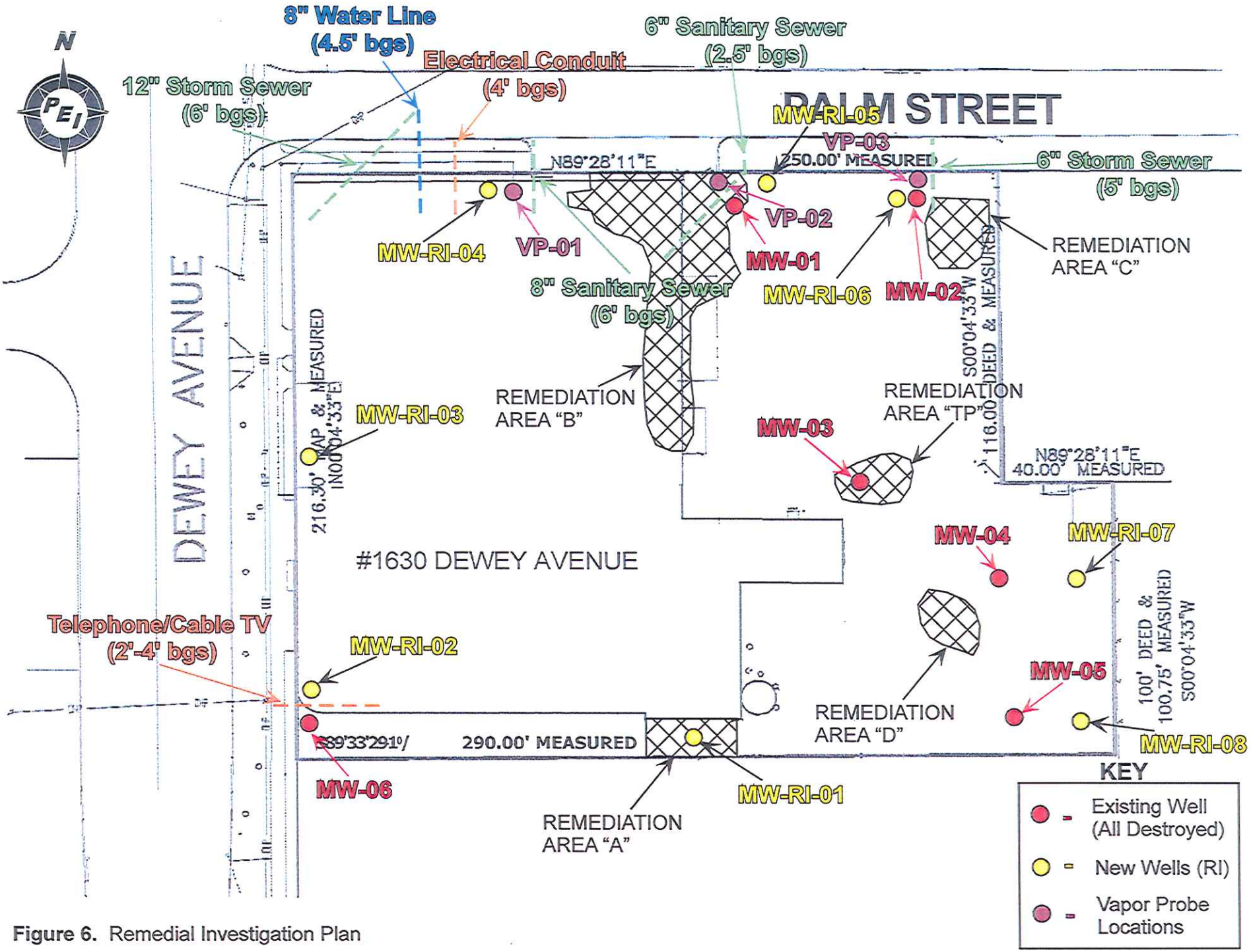


Figure 6. Remedial Investigation Plan

TABLE 1 - Dewey Historic PEI Investigation Soil Sample Analytical Results

PEI Program	Building Sub-Floor Borings (2010)				Test Pits (2010)		Soil Borings (2006 Phase 2 ESA)				NYSDEC	NYSDEC
Sample Number	SF-01	SF-03	SF-05	SF-06	TP-A	TP-B	BH-01	BH-04	BH-09	BH-14		
Sample Date	1/29/2010	1/29/2010	1/29/2010	1/29/2010	2/18/2010	2/18/2010	9/22/2006	9/22/2006	9/22/2006	9/22/2006	PART 375	PART 375
Sample depth (bgs)	2'- 3'	2'- 3'	2'- 3'	2'- 3'	4' +	4'+	5'-6'	4'-6'	6'-7'	7'-8'	Unrestricted	Restrict-Res
Compounds	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	(a) ppm	(b) ppm
SVOCs												
Naphthalene	ND	ND	ND	ND	ND	5.02	ND	ND	ND	ND	12	100
TICs Total	ND	ND	ND	ND	2.83	564.3	8.5	44	34.9	119.9		
Volitile Organics												
Acetone	ND	ND	ND	ND	0.09 (a)	0.09 (a)	ND	ND	ND	ND	0.05	100
m,p-Xylene	ND	ND	ND	ND	ND	3.36 (a)	ND	ND	ND	ND	0.26	100
Sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	0.09	ND	1.67	11	100
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	1	41
n-Propylbenzene	ND	ND	ND	ND	ND	ND	0.1	ND	ND	1.5	3.9	100
Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42	N/A	N/A
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.72	N/A	N/A
1,2,4-trimethylbenzene	ND	ND	ND	ND	0.07	22.4 (a)	ND	ND	ND	6.4 (a)	3.6	52
1,3,5-trimethylbenzene	ND	ND	ND	ND	ND	8.35	ND	ND	ND	2.52	8.4	52
TICs Total	ND	ND	ND	ND	0.07	567.4	ND	ND	ND	ND		

N/A - Not Applicable ND - Non-detect
bgs - below ground surface TICs - Tentitively Identified Compounds
Shading - Results above NYSDEC Cleanup Objectives

Table 2

Analytical Results Summary Table - Groundwater Samples
Dewey/Palm, City of Rochester, New York

Feb 2010 Investigation

Sample Number	DP-MW-01	DP-MW-01-QC	DP-MW-02	DP-MW-03	DP-MW-04	DP-MW-05	DP-MW-06	DP-MW-06-QC	NYSDEC
Compounds Detected									GW Standards
Volatile Organics	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1,2-Dichloroethane	6.34	6.30	U	U	U	U	U	U	5
Tetrachloroethene	34.30	34.20	14.50	U	U	U	U	U	5
Toluene	U	U	2.18	U	U	U	U	U	5
Acetone	U	U	15.00	U	U	U	U	U	50
2-Hexanone	U	U	10.80	5.12	U	U	U	U	N/A
Semi-Volatile organics									
TIC - Unknown Terpineol	N/A	N/A	18.9	13.2	19.3	10.1	N/A	N/A	N/A
TIC - Unknown	N/A	N/A	104	N/A	116	102	66.7	92.5	N/A
TIC - Unknown Phthalate	N/A	N/A	N/A	10.3	N/A	N/A	N/A	10.9	N/A

Key:
U - Not Detected
N/A - Not Applicable
NYSDEC - New York State Department of Environmental Conservation
GW Standards - NYSDEC Groundwater Standards/Criteria - Remediation Guidance and Policy Documentation - TAGM 4046
Shaded areas exceed NYSDEC Groundwater Standards/Criteria values

TABLE 3 - Dewey Supplemental Investigation Soil Sample Analytical Results 1 of 2												
Sample Number	SI-01A	SI-01B	SI-02	SI-03A	SI-03B	SI-04	SI-A	SI-B	SI-C	SI-D	NYSDEC	NYSDEC
Sample Date	4/14/2011	4/14/2011	4/14/2011	4/14/2011	4/14/2011	4/14/2011	4/18/2011	4-14-201	4-14-201	4/19/2011	PART 375	PART 375
Sample depth (bgs)	1'	5'	2'	1.5'	2.5'	2'	10'	7'	5'	5'	Unrestricted	Restrict-Res
Compounds	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	(a) ppm	(b) ppm
Metals												
Aluminum	3450	6140	10000	4730	4940	5610	5960 D	4120	6050	4890	N/A	N/A
Arsenic	2.24	2.24	7,7	7.28	1.75	2.5	2.31 DM	1.8 D,M	2.46	1.49 DM	13	16
Barium	42.8	34.5	149	76.3	42.5	46.6	56 DM	29.3 D,M	40.9	44.9 M	350	400
Beryllium	0.30 J	0.28 J	0.47 J	0.53	0.25 J	0.27 J	0.27 J,M	0.25 D,M,J	0.31 J	0.23 J,M	7.2	72
Cadmium	ND	ND	0.94	1.73	ND	ND	ND	ND	ND	ND	2.5	4.3
Calcium	1280	10100	4500	34600	22500	22200	19700 D	24700	28100	28000	N/A	N/A
Chromium	9.41	11.7	16.2	14.9	8.33	9.05	9.52 DM	9.58 D,M	9.92	8.24 M	30 (1)	110
Cobalt	5.02	6.27	5.7	4.89	5.16	5.42	4.91 M	4.9 M	5.93	4.92 M	N/A	N/A
Copper	5.74	7.26	25.2	33.3	6.04	9.07	11.5 DM	5.88 D,M	8.35	7.69 DM	50	270
Cyanide Total	ND	ND	ND	0.001 J	ND	ND	ND	ND	ND	ND	27	27
Iron	1150	13300	13300	16700	11300	13100	11800	10700	13200	11500	N/A	N/A
Lead	1.89	1.49	197 (a)	179 (a)	1.43	2.43	69.6 DM(a)	2.77 D,M	14.3	2.79 DM	63	400
Magnesium	1530	3740	2310	15000	4830	5100	5360 M	5090 D,M	5820	7810 DM	N/A	N/A
Manganese	321	234	344	185	373	388	280 DM	317 D,M	336	336 DM	1600	2000
Mercury	0.03 J	0.006 J	0.37 J (a)	0.1 J	0.007 J	0.004 J	0.02 D	0.02 D,M,J	0.02 J	ND	0.18	0.81
Nickel	6.72	11.8	14	12	8.85	9.67	8.66 M	8.74 D,M	10.7	8.38 M	30	310
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.9	180
Potassium	604	1030	924	1790	915	967	854	705	1120	893	N/A	N/A
Silver	ND	ND	2.59 (a)	2.4 (a)	ND	ND	ND	ND	ND	ND	2	180
Sodium	266	264	354	ND	ND	ND	ND	ND	215	ND	N/A	N/A
Vanadium	18.6	18.2	22.8	15.1	15.4	17.6	18.4 M	14.4 D,M	18.4	15.9 M	N/A	N/A
Zinc	21.9	27.1	135 (a)	106	22	31.5	62.3 DM	21.2 M	37.1	24.4 DM	109	10000
SVOCs												
2-Methynaphthalene	ND	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	ND	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A	100	100
Anthracene	ND	ND	ND	0.002 J	ND	ND	N/A	N/A	N/A	N/A	100	100
Benzo(a)anthracene	ND	ND	0.4	1 (a)(b)	ND	ND	N/A	N/A	N/A	N/A	1	1
Benzo(a)pyrene	ND	ND	0.4	1.1 (a)(b)	ND	ND	N/A	N/A	N/A	N/A	1	1
Benzo(b)fluoranthene	ND	ND	0.5	1.1 (a)(b)	ND	ND	N/A	N/A	N/A	N/A	1	1
Benzo(g,h,I)perylene	ND	ND	0.2 J	1	ND	ND	N/A	N/A	N/A	N/A	100	100
Benzo(k)fluoranthene	ND	ND	0.4	0.9 (a)	ND	ND	N/A	N/A	N/A	N/A	0.8	3.9
Carbazole	ND	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	ND	ND	0.05	1.2 (a)	ND	ND	N/A	N/A	N/A	N/A	1	3.9
Dibenz(a,h)anthracene	ND	ND	ND	0.3 J	ND	ND	N/A	N/A	N/A	N/A	0.33	0.33
Dibenzofuran	ND	ND	ND	0.2 J	ND	ND	N/A	N/A	N/A	N/A	7	59
Fluoranthene	ND	ND	0.9	1.8	ND	ND	N/A	N/A	N/A	N/A	100	100
Flourene	ND	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A	30	100
Indeno(1,2,3-cd)pyrene	ND	ND	0.3 J	0.7 (a)(b)	ND	ND	N/A	N/A	N/A	N/A	0.5	0.5
Naphthalene	ND	ND	ND	0.4	ND	ND	N/A	N/A	N/A	N/A	12	100
Phenanthrene	ND	ND	0.6	1.2	ND	ND	N/A	N/A	N/A	N/A	100	100
Pyrene	ND	ND	0.7	1.9	ND	ND	N/A	N/A	N/A	N/A	100	100
TICs Total	0.002	384	146	135.5	0.4	0.4	N/A	N/A	N/A	N/A		
PCBs												
Aroclor 1260	ND	ND	ND	ND	ND	ND	0.7	ND	ND	ND	0.1	1

TABLE 3 - Dewey Supplemental Investigation Soil Sample Analytical Results 2 of 2

Sample Number	SI-01A	SI-01B	SI-02	SI-03A	SI-03B	SI-04	SI-A	SI-B	SI-C	SI-D	NYSDEC	NYSDEC
Sample Date	4/14/2011	4/14/2011	4/14/2011	4/14/2011	4/14/2011	4/14/2011	4/18/2011	4-14-201	4-14-201	4/19/2011	PART 375	PART 375
Sample depth (bgs)	1'	5'	2'	1.5'	2.5'	2'	10'	7'	5'	5'	Unrestricted	Restrict-Res
Compounds	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	(a) ppm	(b) ppm
Pesticides												
Aldrin	ND	ND	ND	0.002 J	ND	ND	ND	ND	ND	ND	0.005	0.097
Alpha-BHC	ND	ND	ND	0.007	ND	ND	ND	ND	ND	ND	0.02	0.48
beta-BHC	ND	ND	ND	ND	ND	ND	ND	0.009 JN	ND	ND	0.036	0.36
delta-BHC	ND	ND	ND	0.003 JN	ND	ND	ND	0.003 J	ND	ND	0.04	100
gamma-BHC	ND	ND	ND	ND	ND	ND	ND	0.002 JN	ND	ND	N/A	N/A
4,4'-DDD	ND	ND	0.015 J (a)	0.029 JN(a)	ND	ND	0.01(a)	0.016 JN	ND	ND	0.0033	13
4,4'-DDE	ND	ND	0.006 (a)	0.004 JN(a)	ND	ND	0.01 (a)	0.003 J	ND	ND	0.0033	8.9
4,4'-DDT	ND	ND	0.004 (a)	0.015 JN(a)	ND	ND	0.05 (a)	ND	ND	ND	0.0033	7.9
Dieldrin	ND	ND	0.004 J (a)	0.006 JN(a)	ND	ND	0.003 J	ND	ND	ND	0.005	0.2
Endrin	ND	ND	ND	ND	ND	ND	0.004	ND	ND	ND	0.014	11
Endosulfan Sulfate	ND	ND	ND	0.005 JN	ND	ND	ND	ND	ND	ND	2.4	24
Endrin Aldehyde	ND	ND	ND	0.027 JN	ND	ND	0.004	ND	ND	ND	N/A	N/A
Endrin Ketone	ND	ND	ND	0.012 J	ND	ND	ND	ND	ND	ND	N/A	N/A
Methoxychlor	ND	ND	0.002 JN	0.043 JN	ND	ND	ND	0.002 JN	ND	ND	N/A	N/A
Volitile Organics												
Acetone	ND	0.06 B	0.74 (a)	ND	ND	ND	N/A	N/A	N/A	N/A	0.05	100
Methylene Chloride	ND	0.014	0.012	ND	ND	ND	N/A	N/A	N/A	N/A	0.05	100
2-Butanone	ND	ND	0.16 J	ND	ND	ND	N/A	N/A	N/A	N/A	N/A	N/A
n-Butylbenzene	ND	0.077	ND	ND	ND	ND	N/A	ND	ND	N/A	12	100
sec-Butylbenzene	ND	0.03	ND	ND	ND	ND	N/A	ND	ND	N/A	11	100
Carbon Disulfide	ND	0.004 J	0.008	ND	ND	ND	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,2-Dicichloroethene	ND	ND	0.032	ND	ND	ND	N/A	N/A	N/A	N/A	0.25	100
Toluene	ND	ND	0.01	ND	ND	ND	N/A	N/A	N/A	N/A	0.7	100
Tetrachloroethene	0.007	0.022	ND	ND	ND	ND	N/A	N/A	N/A	N/A	1.3	19
Trichloroethene	ND	0.002 J	0.007	ND	ND	ND	N/A	N/A	N/A	N/A	0.47	21
1,2,4-trimethylbenzene	ND	0.002 J	ND	ND	ND	ND	N/A	N/A	N/A	N/A	3.6	52
1,3,5-trimethylbenzene	ND	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A	8.4	52
m'p-Xylene	ND	ND	0.008	ND	ND	ND	N/A	N/A	N/A	N/A	0.26	100
TICs Total	0.017	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A		

NOTE: Data Validation Completed
N/A - Not Applicable ND - Non-detect
bgs - below ground surface TICs - Tentitively Identified Compounds
Shading - Results above NYSDEC Cleanup Objectives
"E" = Result has been estimated, calibration limit exceeded.
"D" = Duplicate results outside QC limits. May indicate a non-homogenous matrix.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"V" = Sample concentration is >10 times the spike. No meaningful Spike Recovery can be calculated.
"J" = Any hits present between the Quantitation limit and half the Quantitation limit.
"N"=The analysis indicates the presence of an analyte for which there is evidence to make a tentitive ID

TABLE 4 - Dewey ISMP Soil Sample Analytical Results Page 1										
Sample Number	ISMP-1	ISMP-2	ISMP-3	ISMP-4	ISMP-5	ISMP-6	ISMP-7	ISMP-8	NYSDEC	NYSDEC
Sample Date	4/18/2011	4/18/2011	4/18/2011	4/18/2011	4/18/2011	5/27/2011	5/27/2011	5/27/2011	PART 375	PART 375
Sample depth	1'	7'	9'	9'	1'	Stockpile	Stockpile	Stockpile	Unrestricted	Restrict-Res
Compounds	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	(a) ppm	(b) ppm
Metals										
Aluminum	6230	5330	4070	4270	6390	6500	5680	5780	N/A	N/A
Arsenic	2.37	2.48	1.36	2.1	1.89	1.95	2.44	1.93	13	16
Barium	51.7	54.2	33.6	43.4	56.3	47.4	46.7	46.5	350	400
Beryllium	0.3 J	0.28 J	0.2 J	0.22 J	0.3 J	0.32 J	0.31 J	0.28 J	7.2	72
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	2.5	4.3
Calcium	16400	62900	16300	46700	15400	31100	28300	22800	N/A	N/A
Chromium (Total)	9.83	9	7.29	7.06	10.6	11.5	9.35	9.8	30 (1)	110
Cobalt	5.74	4.59	4.51	4.87	5.69	6.56	5.56	5.66	N/A	N/A
Copper	22	10.1	6.84	9.73	7.81	8.18	8.12	7.79	50	270
Cyanide Total	ND	ND	ND	ND	ND	ND	ND	ND	27	27
Iron	13600	11600	10600	11700	13200	13700	12500	12600	N/A	N/A
Lead	18.7	7.98	2.06	1.83	5.43	5.9	4.1	2.94	63	400
Magnesium	4170	5080	3970	6330	4540	6810	6180	5140	N/A	N/A
Manganese	435	332	307	338	408	341	343	322	1600	2000
Mercury	0.04	0.1	ND	ND	0.08	0.01	0.005 J	0.008 J	0.18	0.81
Nickel	35	8.7	7.53	7.33	9.55	12.1	10.2	9.71	30	310
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	3.9	180
Potassium	952	1030	620	911	885	1460	1120	1100	N/A	N/A
Sodium	ND	294	ND	ND	ND	267	243 J	202 J	N/A	N/A
Vanadium	16.9	15.5	14.6	15.5	18.3	21.5	17.9	19.6	N/A	N/A
Zinc	34.4	33.2	20.6	26.4	28.5	32.1	23.5	25.2	109	10000
SVOCs										
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	100	100
Anthracene	0.2 J	0.5	ND	ND	ND	ND	ND	ND	100	100
Benzo(a)anthracene	0.4	1.2 (a)(b)	ND	ND	ND	ND	ND	ND	1	1
Benzo(a)pyrene	0.3 J	0.95	ND	ND	ND	ND	ND	ND	1	1
Benzo(b)fluoranthene	0.3	1.2 (a)(b)	ND	ND	ND	ND	ND	ND	1	1
Benzo(g,h,i)perylene	ND	0.5	ND	ND	ND	ND	ND	ND	100	100
Benzo(k)fluoranthene	0.3 J	0.8	ND	ND	ND	ND	ND	ND	0.8	3.9
Carbazole	ND	0.2 J	ND	ND	ND	ND	ND	ND	N/A	N/A
Chrysene	0.4	1.2 (a)(b)	ND	ND	ND	ND	ND	ND	1	3.9
Dibenz(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	0.33	0.33
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	7	59
Fluoranthene	0.8	2.6	ND	ND	0.3 J	ND	ND	ND	100	100
Flourene	ND	0.2 J	ND	ND	ND	ND	ND	ND	30	100
Indeno(1,2,3-cd)pyrene	ND	0.45	ND	ND	ND	ND	ND	ND	0.5	0.5
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	12	100
Phenanthrene	0.7	2.1	ND	ND	0.2 J	ND	ND	ND	100	100
Pyrene	0.7	2.4	ND	ND	0.3 J	ND	ND	ND	100	100
TICs Total	0.8	12.6	0.2	0.2	1.2	ND	ND	ND		
PCBs										
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	0.1	1
Aroclor 1260	ND	ND	ND	ND	ND	ND	ND	ND	0.1	1
Pesticides										
Aldrin	ND	0.003	ND	ND	ND	ND	ND	ND	0.005	0.097
alpha-BHC	ND	ND	ND	ND	ND	0.002 J	ND	ND	0.02	0.48
Beta-BHC	ND	ND	ND	ND	ND	ND	0.002 J	0.011	0.036	0.36
4,4' DDD	ND	ND	ND	ND	ND	0.004 (a)	ND	ND	0.0033	13
4,4' DDT	ND	ND	ND	ND	ND	0.008 (a)	ND	ND	0.0033	7.9
Dieldrin	ND	0.002 J	ND	ND	ND	ND	ND	ND	0.005	0.2
Endrin Ketone	ND	ND	ND	ND	ND	ND	ND	0.007	NA	NA
Endosulfan Sulfate	ND	0.003 J	ND	ND	ND	ND	ND	ND	2.4	24
Methoxychlor	ND	0.038	ND	ND	ND	ND	ND	0.002 J	N/A	N/A
Volitile Organics										
Methylene Chloride	ND	0.002	0.001	0.007	0.008	ND	ND	ND	0.05	100
Tetrachlorcethene	0.019	ND	ND	ND	ND	ND	ND	ND	1.3	19
TICs Total	ND	ND	ND	ND	ND	ND	ND	ND		

TABLE 4 - Dewey ISMP Soil Sample Analytical Results Page 2										
Sample Number	ISMP-9	ISMP-10	ISMP-11	ISMP-12	ISMP-13	ISMP-14	ISMP-15	ISMP-16	NYSDEC	NYSDEC
Sample Date	5/27/2011	5/27/2011	5/27/2011	5/27/2011	5/27/2011	6/16/2011	6/16/2011	6/16/2011	PART 375	PART 375
Sample depth	Stockpile	Stockpile	Stockpile	Stockpile	Stockpile	Stockpile	Stockpile	Stockpile	Unrestricted	Restrict-Res
Compounds	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	(a) ppm	(b) ppm
Metals										
Aluminum	6790	5310	5920	6920	6500	5790 D	5720	6050	N/A	N/A
Arsenic	2	2.18	2.43	2.1	2.05	1.89 DM	2.3	2.04	13	16
Barium	59.6	50.1	49.4	49.9	53	42.2 DM	47	47.2	350	400
Beryllium	0.26 J	0.26 J	0.09 J	0.33 J	0.31 J	0.32 DMJ	0.31 J	0.3 J	7.2	72
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	2.5	4.3
Calcium	26100	28100	24300	31300	30600	24500 D	26600	14000	N/A	N/A
Chromium (Total)	10.8	9.3	9.94	11.6	10.5	9.01 DM	9.41	8.77	30 (1)	110
Cobalt	6.66	5.72	5.74	6.74	6.34	5.58	5.56	5.22	N/A	N/A
Copper	7.69	6.82	7.82	7.07	7.69	8.78	9.65	8.7	50	270
Cyanide Total	ND	ND	ND	ND	ND	ND	ND	ND	27	27
Iron	13800	12000	13200	14500	13700	12400 D	12500	11700	N/A	N/A
Lead	2.05	2.09	3.31	3.3	3.91	5.41 DM	7.18	3.59	63	400
Magnesium	6900	6720	6030	8240	6360	5510 DM	6670	4290	N/A	N/A
Manganese	330	319	331	345	370	318	333	458	1600	2000
Mercury	ND	0.005 J	0.01	0.008	ND	0.013 D	0.047	0.02	0.18	0.81
Nickel	15	9.92	10.7	12.8	11.6	10.6 DM	10.5	9.53	30	310
Selenium	ND	0.56 J	ND	0.54 JB	ND	ND	ND	ND	3.9	180
Potassium	1490	1100	1020	1600	1350	1130	1180	975	N/A	N/A
Silver	ND	ND	ND	ND	ND	ND	ND	ND	2	180
Sodium	226 J	190 J	201 J	210 J	203 J	255 J	269	178	N/A	N/A
Vanadium	19.2	17.3	18.6	19.2	18.8	17.5 DM	18.3	17.3	N/A	N/A
Zinc	26.9	22.7	25.2	28.6	26.7	24.8 M	28.1	24	109	10000
SVOCs										
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	N/A	N/A
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	100	100
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	100	100
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	ND	0.16 J	1	1
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	1	1
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	1	1
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	ND	ND	100	100
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	0.8	3.9
Carbazole	ND	ND	ND	ND	ND	ND	ND	ND	N/A	N/A
Chrysene	ND	ND	ND	ND	ND	ND	ND	0.162 J	1	3.9
Dibenz(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	0.33	0.33
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	7	59
Fluoranthene	ND	ND	ND	ND	ND	ND	0.156 J	0.378	100	100
Flourene	ND	ND	ND	ND	ND	ND	ND	ND	30	100
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	0.5	0.5
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	12	100
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	0.496	100	100
Pyrene	ND	ND	ND	ND	ND	ND	ND	0.363	100	100
TICs Total	ND	ND	ND	ND	ND	ND	0.223	0.054		
PCBs										
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	0.1	1
Aroclor 1260	ND	ND	ND	ND	ND	ND	ND	ND	0.1	1
Pesticides										
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.097
Beta-BHC	0.003	ND	ND	0.0043 (a)	ND	ND	ND	ND	0.036	0.36
Delta-BHC	ND	0.002 J	ND	0.003 J	0.002 J	ND	ND	ND	0.04	0.36
4,4' DDT	ND	0.002 J	ND	0.002	ND	ND	ND	ND	0.0033	7.9
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.2
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	0.014	11
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	2.4	24
Methoxychlor	0.002 J	ND	0.003 J	ND	0.004	ND	ND	ND	N/A	N/A
Volitile Organics										
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	0.05	100
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	0.26	100
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	1.3	19
TICs Total	ND	ND	ND	ND	ND	ND	ND	ND		

TABLE 4 - Dewey ISMP Soil Sample Analytical Results Page 3

Sample Number	ISMP-17	ISMP-17							NYSDEC	NYSDEC
Sample Date	6/16/2011	6/22/2011							PART 375	PART 375
Sample depth	Stockpile	Stockpile							Unrestricted	Restrict-Res
Compounds	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	(a) ppm	(b) ppm
Metals										
Aluminum	5580	5160							N/A	N/A
Arsenic	1.66	1.83							13	16
Barium	37.7	47.8 M							350	400
Beryllium	0.27 J	0.25 JM							7.2	72
Cadmium	ND	ND							2.5	4.3
Calcium	14200	21600							N/A	N/A
Chromium (Total)	9.14	7.96 M							30 (1)	110
Cobalt	4.97 J	4.32 DMJ							N/A	N/A
Copper	8.22	6.93 M							50	270
Cyanide Total	ND	ND							27	27
Iron	12000	11000							N/A	N/A
Lead	2.68	10.7 DM							63	400
Magnesium	3830	4790 DM							N/A	N/A
Manganese	298	298 M							1600	2000
Mercury	0.008 J	0.035							0.18	0.81
Nickel	8.82	7.88 M							30	310
Selenium	ND	ND							3.9	180
Potassium	960	911							N/A	N/A
Silver	ND	0.64 MJ							2	180
Sodium	217 J	149 J							N/A	N/A
Vanadium	18.8	17.6 DM							N/A	N/A
Zinc	21.8	26.9 M							109	10000
SVOCs										
2-Methynaphthalene	ND	ND							N/A	N/A
Acenaphthene	ND	ND							100	100
Anthracene	ND	ND							100	100
Benzo(a)anthracene	ND	ND							1	1
Benzo(a)pyrene	ND	ND							1	1
Benzo(b)fluoranthene	ND	ND							1	1
Benzo(g,h,i)perylene	ND	ND							100	100
Benzo(k)fluoranthene	ND	ND							0.8	3.9
Carbazole	ND	ND							N/A	N/A
Chrysene	ND	ND							1	3.9
Dibenz(a,h)anthracene	ND	ND							0.33	0.33
Dibenzofuran	ND	ND							7	59
Fluoranthene	ND	ND							100	100
Flourene	ND	ND							30	100
Indeno(1,2,3-cd)pyrene	ND	ND							0.5	0.5
Naphthalene	ND	ND							12	100
Phenanthrene	ND	ND							100	100
Pyrene	ND	ND							100	100
TICs Total	ND	1.1								
PCBs										
Aroclor 1254	ND	ND							0.1	1
Aroclor 1260	ND	ND							0.1	1
Pesticides										
Aldrin	ND	ND							0.005	0.097
Beta-BHC	ND	ND							0.036	0.36
Delta-BHC	ND	0.003 JC							0.04	0.36
4,4' DDE	ND	0.0032							0.0033	8.9
4,4' DDT	ND	0.0029 JC							0.0033	7.9
Dieldrin	ND	ND							0.005	0.2
Endrin	ND	ND							0.014	11
Endosulfan Sulfate	ND	ND							2.4	24
Methoxychlor	ND	ND							N/A	N/A
Volitile Organics										
Methylene Chloride	ND	ND							0.05	100
Acetone	ND	0.1 B							0.05	100
m,p-Xylene	ND	ND							0.26	100
Tetrachloroethene	ND	ND							1.3	19
TICs Total	ND	ND								

Samples ISMP-1 through ISMP-5 have been validated.
N/A - Not Applicable ND - Non-detect
bgs - below ground surface TICs - Tentitively Identified Compounds
Shading - Results above NYSDEC Cleanup Objectives
"E" = Result has been estimated, calibration limit exceeded.
"D" = Duplicate results outside QC limits. May indicate a non-homogenous matrix.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"V" = Sample concentration is >10 times the spike. No meaningful Spike Recovery can be calculated.
"J" = Any hits present between the Quantitation limit and half the Quantitation limit.
(1) - Total Chromium value in table. Part 375 Unrestricted Cr hexavalent = 1 ppm and trivalent = 30 ppm
Cr hexavalent requires separate analyses and is usually a much smaller value than tot Cr.

Table 1
Soil Sample Analytical Results (8260 Analyses)
1630 Dewey Avenue
Rochester, New York

All Results in milligrams per kilogram (mg/kg)

Sample I.D. (Field)	*Sample Location*								NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives (ppm)	NYSDEC Groundwater Soil Cleanup Objectives (mg/kg)[1]	NYSDEC Exposure Pathway-Specific Soil Cleanup Objectives - Residential (Combined) (mg/kg)[1]
	ATC-MW-1 (10-12)	ATC-MW-2 (6-8)	ATC-B-1 (1-2)	ATC-B-2 (1-2)	ATC-B-3 (1-2)	ATC-B-4 (3-4)	ATC-B-5 (2-3)	ATC-B-6 (4-5)			
Sample Interval/Depth	10-12	6-8	1-2	1-2	1-2	3-4	2-3	4-5			
Sample Date	6/24/2010	6/24/2010	6/25/2010	6/25/2010	6/25/2010	6/25/2010	6/25/2010	6/25/2010			
VOC Analyses (Method 8260)											
Acetone [2]	ND (0.0104)	ND (0.0074)	**0.100**	**0.052** [2]	**0.120**	**0.0236**	**0.0309**	**0.0591** [2]	0.2	0.05	6,300
2-Butanone (MEK)	ND (0.0104)	ND (0.0074)	ND (0.0098)	ND (0.012)	**0.0105**	ND (0.008)	ND (0.0076)	ND (0.0098)	NV	0.12	3,900
Carbon Disulfide	ND (0.0052)	ND (0.0037)	ND (0.0049)	ND (0.006)	ND (0.0044)	ND (0.004)	ND (0.0038	**0.0172**	2.7	NV	NV
Carbon Tetrachloride	ND (0.0052)	ND (0.0037)	**0.0095**	ND (0.006)	ND (0.0044)	ND (0.004)	ND (0.0038	ND (0.0049)	0.6	0.76	1.4
Tetrachloroethene	**0.404**	ND (0.0037)	**0.0362**	**0.0158**	ND (0.0044)	ND (0.004)	**0.0046**	**0.0108**	1.4	1.3	5.5
Toluene	ND (0.0052)	ND (0.0037)	ND (0.0049)	ND (0.006)	ND (0.0044)	ND (0.004)	ND (0.0038	**0.0092**	1.5	0.7	940

Notes:

- ND (0.05) = Parameter not detected at the detection limit specified in parentheses.
- NV = No value listed
- [1] NYS Brownfield Cleanup Program Development of Soil Cleanup Objectives, Technical Support Document, NYSDEC and NYS Department of Health, September 2006. "Exposure Pathway-Specific Soil Cleanup Objectives - Residential" standards (Table 5.3.6-1(b)) and Groundwater SCOs (Table 7-1) used for comparison in above table.
- **[2] Please note that Acetone is a common laboratory artifact and is likely a cross contaminant and not representative of the sample.**
- Only compounds detected above the Practical Quantitation Limit (PQL) are shown.
- Shaded values indicate exceedance of a standard.

Table 2
Groundwater Sample Analytical Results (8260 Analyses)
1630 Dewey Avenue
Rochester, New York

All Results in micrograms per liter (ug/L)

Sample I.D. (Field)	***Sample Location***		**NYDEC TAGM 4046 - Table 1: Groundwater Standards/Criteria (ug/L or ppb)**
	ATC-MW-1	ATC-MW-2	
Sample Date	6/24/2010	6/24/2010	
VOC Analyses (Method 8260)			
Acetone	ND (10.0)	**11.0**	**50**
Carbon Disulfide	ND (1.0)	**1.8**	**50**
Tetrachloroethene	**488**	**1.3**	**5**
Trichloroethene	**2.2**	ND (1.0)	**5**

Notes:
- ND (0.05) = Parameter not detected at the detection limit specified in parentheses.
- Only compounds detected above the Practical Quantitation Limit (PQL) are shown.
- Shaded values indicate exceedance of a standard.

APPENDIX A

HEALTH & SAFETY PLAN

APPENDIX A

HEALTH AND SAFETY PLAN

Site Investigations
And
Remedial Oversight

DEMOLITION & SITE REMEDIATION
FORMER CRESCENT PURITAN LAUNDRY
(EASTMAN COMMONS)

SITE # C828163
1630 DEWEY AVENUE, 149 AND 161 PALMSTREET
ROCHESTER, NEW YORK

Prepared for:

Norstar Development USA, L.P.
200 South Division Street
Buffalo, New York 14204

Prepared by:

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227

SEPTEMBER 2010

Peter J. Gorton, MPH, CHCM
PEI Safety Officer

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Section Page

HEALTH AND SAFETY PLAN

1.0 INTRODUCTION

The following health and safety procedures will be followed by PEI personnel and their immediate subcontractors performing the activities described in the Demolition and Site Remediation Work Plans. Please note, however, contractors are required to develop and follow their own plans meeting these requirements minimally or adopt this plan.

1.1 Purpose

Directed at protecting the health and safety of the field personnel during field activities, the following site-specific Health and Safety Plan (HASP) was prepared to provide safe procedures and practices for personnel engaged in conducting the field activities associated with this plan. The plan has been developed using the Occupational Safety and Health Administration (OSHA) 1910 and 1926 regulations and NYSDEC Brownfields DER-10 as guidance. The purpose of this HASP is to establish personnel protection standards and mandatory safety practices and procedures for this task specific effort. This plan assigns responsibilities, establishes standard operating procedures, and provides for contingencies that may arise during the field efforts.

1.2 Applicability

The provisions of the plan are mandatory for all personnel engaged in field activities. All personnel who engage in these activities must be familiar with this plan and comply with its requirements. The plan is based on available information concerning the project area and planned tasks. If more data concerning the project area becomes available which constitute safety concerns, the plan will be modified accordingly. One crew member of each contractor will be designated Field Safety Officer and will be responsible for in-field safety. Any necessary modifications to the plan will be made by the Field Safety Officer after discussion with the PEI Project Manager and Safety Manager. All modifications will be documented in the HASP plan and field book and provided to the Project Manager and the Health and Safety Manager for approval. A copy of this plan will be available for review by all on- site personnel. In addition, a copy of the plan will be provided to all subcontractors prior to their initial entry onto the site.

Before field activities begin, all personnel will be required to read the plan. All personnel must agree to comply with the minimum requirements of the site-specific plan, be responsible for health and safety, and sign the Statement of Compliance for all on-site employees before site work begins.

1.3 Field Activities

The work includes 1) Demolition of the existing structure including the removal of all asbestos containing materials (ACM) from the Former Crescent Puritan Laundry and demolishing of the building including foundations (refer to Demolition Work Plan section 3.0); 2) remediation of site media (soil, groundwater and USTs (refer to Site Remediation Work Plan sections 5.0-7.0) and 3) any additional investigations. PEI will provide oversight services for the asbestos removal/building demolition and the site remediation IRM activities mentioned above to verify that the requirements of the remediation as specified in the work plans have been met.

1.3.1 Building Demolition and Disposal

A contractor has been selected for asbestos removal and building demolition (Frederico Wrecking). Frederico Wrecking (Contractor) is responsible for preparing a company and project specific demolition/disposal plan to be submitted to PEI, Owner and NYSDEC for review. The plan shall include, but not limited to, the following:

- Detailed construction schedule that meets the overall project schedule provided in the bid documents.
- Method of demolition and handling of asbestos containing materials.
- Work zone limits and staging of equipment, material, etc.
- Off-site transport routing and end disposal destinations.
- Traffic control and protection of city streets and property.
- End use verification to meet NYSDEC tracking requirements (Bills of Lading, etc.).
- Other requirements as specified in the construction plans and specifications

The Contractor will prepare separate health and safety plan (HASP) pertaining to the asbestos removal and demolition work for the protection of his workers and the general public.

The plan will include but not limited to:

- OSHA and DOL requirements
- Applicable laws and regulations regarding the handling and treatment of asbestos containing building materials
- Air and particulate monitoring
- Dust control
- Vehicle access to and from the site
- Vehicle decontamination procedures (tire wash, etc.)
- Site access restriction requirements (fencing, gates, watchmen service, etc.).

Asbestos Abatement Plan

As noted above, pre-demolition asbestos surveys have been completed and asbestos containing building materials are present. Those materials will be removed prior to demolition by a qualified asbestos abatement contractor. The contractor will be required to submit a site-specific asbestos abatement work plan that will also address health and safety issues and will include:

- Contractor's Asbestos Handling License;
- Contractor's employees asbestos handling certificates;
- Abatement and staffing schedule;
- Work plan summary of method of asbestos removal methods consistent with Code Rule 56;
- Written description and/or plans for the construction of decontamination enclosure systems (personnel and waste), asbestos work zones/areas, decontamination systems locations, proposed placement locations of negative air equipment, and other engineering controls;

- Security and Contingency Plans;
- Written proof of notifications to local emergency responders and hospital, NYSDOL, USEPA, and the City of Rochester;
- Written respiratory protection program and record keeping requirements;
- Identification of all waste transporters and disposal facilities including all relevant permits.

The Contractor's HASP must be submitted to PEI, the Owner and NYSDEC for review prior to beginning any work.

Asbestos Abatement Air Monitoring

During the asbestos abatement activities, the owner will retain an independent third party firm/laboratory to perform project air monitoring and analysis consistent with Code Rule 56-4 for asbestos abatement.

Air sampling is required on all large abatement projects such as this project. "Background", "Pre-Abatement", "Abatement", and "Post-Abatement" sampling are required for large abatement projects.

Background Sampling is conducted prior to any abatement activity. It is used to determine existing conditions before the start of the project; Pre-Abatement sampling is conducted during the preparation of the work area to determine if any Asbestos Material was disturbed during area preparation; Abatement sampling is conducted while the abatement is being performed to determine whether any airborne asbestos is escaping the contained work area; and Post-Abatement sampling is conducted after the completion of abatement activity to determine that the area abated is safe for re-occupancy. Post-Abatement Sampling is also referred to as Final or Clearance Air Monitoring. NYSDOL Certified Project Monitor is required to perform a final clearance visual inspection consistent with Code Rule 56-9. The project monitor visual inspection for completeness of abatement and completeness of cleanup will be performed consistent with ASTM Standard E-1368 "Standard Practice for Visual Inspection of Asbestos Abatement Projects."

The Firm performing the air monitoring will prepare an air monitoring report at the end of the asbestos abatement that will certify that clearance air monitoring has been completed and accepted.

The Contractor's HASP must be submitted to PEI, the Owner and NYSDEC for review prior to beginning any work.

1.3.2 Site Remediation Activities

A contractor has not as yet been selected for performing the site remediation activities. When selected he will be responsible for preparing a company and project specific site remediation plan to be submitted to PEI, Owner and NYSDEC for review. The contractor's HASP, at a minimum, must

comply with all Federal and State regulations and the requirements of this HASP including, but not to limited to, the following:

- Occupational Safety Health Administration (OSHA) Regulations 29 CFR 1910 120
- OSHA Regulations 29 CFR 1926
- NYSDEC DER-10 (latest version)
- All applicable laws and regulations regarding the handling and treatment of petroleum containing USTs and excavation/handling of impacted soils.
- The contractor's HASP must also comply with the Community Air Monitoring Plan (CAMP) provided in section 9.0 of this HASP.

The contractors HASP shall, at a minimum address, the following subject areas, as deemed necessary by the Contractor's health and safety personnel in accordance with OSHA Part 29 CFR 1910.120 and applicable New York State regulations:

- On-site health and safety organization.
- Hazard analysis of each site task and operation to be performed.
- Provisions for employee training to ensure compliance with 29 CFR 1910.120(e).
  Personal protective equipment (PPE) to be used by employees for each of the site tasks and operations being conducted to eliminate potential exposures, as required by the PPE programs in 1910.120(g)(5).
- Personnel and equipment decontamination procedures in accordance with 1910.120(k), as applicable.
- Standard Operating Safety Procedures, engineering controls and work practices.
- First aid requirements.
- Confined space entry requirements, if applicable, meeting requirements of 29 CFR1910.146.
- Dust control measures that comply with actions levels of the CAMP (section 9.0)
- A spill containment program meeting the requirements of 1910.120(j)
- Heat/cold stress monitoring.
- Record keeping procedures.

The Contractor's HASP must be submitted to PEI, the Owner and NYSDEC for review prior to beginning any work.

1.3.3 Additional Field Investigations

Additional field investigations would be conducted as necessary be PEI which may include soil borings, monitoring well installation, groundwater sampling and soil sampling. Specific health and safety requirements to be adhered to for these tasks are covered in this HASP.

1.4 Personnel Requirements

Key personnel are as follows:

Project Manager and Corporate health and Safety - Peter J. Gorton, MPH, CHCM

Project Engineer - John B. Berry, P.E.
Project Geologists - Justin Ryszkiewicz
Field Inspection/Health and Safety – Russell Lewis
Project QA/QC - Frank Schieppati, Ph.D
Building Demolition and Asbestos Removal Contractor – Frederico Wrecking
Site Remediation Contractor – To be named
Analytical Laboratory - To be named - DEC and ELAP Approved

Site personnel and their duties are outlined below.

The Project Manager will be responsible for all PEI personnel and their subcontractors' on-site duties.

The Project Manager has the primary responsibility for:

1. Assuring that personnel are aware of the provisions of the HASP and are instructed in the work practices necessary to ensure safety for planned procedures and in emergencies;
2. Verifying that the provisions of this plan are implemented;
3. Assuring that appropriate personnel protective equipment (PPE), if necessary, is available for and properly utilized by all personnel;
4. Assuring that personnel are aware of the potential hazards associated with site operations;
5. Supervising the monitoring of safety performances by all personnel to ensure that required work practices are employed; and,
6. Maintaining sign-off forms and safety briefing forms.

Field Health and Safety/oversight Inspector:

1. Monitor safety hazards to determine if potential hazards are present;
2. Determine changes to work efforts or equipment needed to ensure the safety of personnel;
3. Evaluate on-site conditions and recommend to the Project Manager modifications to work plans needed to maintain personnel safety;
4. Determine that appropriate safety equipment is available on-site and monitor its proper use;
5. Monitor field personnel and potential for exposure to physical hazards, such as heat/cold stress, safety rules near heavy equipment and borings;
6. Halt site operations if unsafe conditions occur or if work is not being performed in compliance with this plan:
7. Monitor performance of all personnel to ensure that the required safety procedures are followed. If established safety rules and practices are violated, a report of the incident will be filed and sent to the Project Manager within 48 hours of the incident; and,
8. Conduct safety meetings as necessary.

Field Personnel: The responsibility of each field crew member is to follow the safe work practices of this HASP and be familiar with and comply with the Contractor's HASP and in general to:

1. Be aware of the procedures outlined in this plan;
2. Take reasonable precautions to prevent injury to him/herself and to his/her co-workers;

3. Perform only those tasks that he/she believes can be done safely and
4. Immediately report any accidents or unsafe conditions to the safety personnel and Project Manager;
5. Notify the safety personnel and Project Manager of any special medical problems (i.e., allergies or medical restrictions) and make certain that on-site personnel are aware of any such problems;
6. Think Safety First prior to and while conducting field work; and,
7. Do not eat, drink or smoke in work areas.

Each crew member has the authority to halt work should he deem conditions to be unsafe. Visitors will be required to report to the construction manager or designee and follow the requirements of this plan and the Contractor's HASP.

2.0 SITE DESCRIPTION AND HAZARDS/SAFETY CONCERNS

2.1 Site Background And Description

The subject site contains three adjacent parcels located in the City of Rochester at the southeast corner of Dewey Avenue and Palm Street (refer to Figure 1). The area is historically mixed residential/commercial. The 1630 Dewey Avenue property contains a vacant approximately 52,000 square foot 2-story brick, former commercial laundry facility.

This existing vacant facility operated as a commercial laundry (Crescent Puritan Laundry) since at least the late 1920's to the mid 1970's or early 1980's. Now vacant, the property had various tenants after the laundry closed which included plastic fabrication, printing, tool machining, bathroom and kitchen cabinet sales, and other commercial/retail uses through the early 1980's and 1990's. Some of the tenants included DJ Printing, Monroe Micro film, Samson's Gym (second floor) and Vella Bath & Kitchen. The 149 and 161 Palm Street properties currently form an asphalt covered parking area behind the former laundry facility. These properties were historically used to support the laundry facility and historically contained vehicle garage and petroleum storage operations most likely to service laundry operations.

The adjacent property to the east is an automobile service and repair operation which has operated in this capacity since at least the 1950's. Further east and north is residential and beyond that is Kodak Park, a division of Eastman Kodak. North of the parcels along Palm Street is residential. The adjacent properties north along Dewey Avenue at Palm are commercial/retail including a Sunoco gasoline station. West of the properties across Dewey Avenue are an industrial facility (Steko) and other commercial/retail establishments including a motor cycle shop, auto service center, and a carpet center. The Steko property has a long history as the Clark Steko Corporation which was a large commercial building that may have been associated with paper manufacturing and supply as early as the 1920's. South of the properties across an alleyway (Industrial Alley – former railroad line) is mixed residential and retail/commercial including an insulation, roofing and gutter repair store and advent auto.

A series of investigations and site assessments have been completed at the property including:

- Phase I and Phase II Environmental Site Assessment completed by Galson Corporation for the City of Rochester Department of Environmental Services in 1999.
- Addendum to The Phase I Environmental Site Assessment: Final Report FOIA Response from NYSDEC completed by Galson in April 1999.
- Modified Phase I Environmental Site Assessment for 149 and 161 Palm Street, Rochester, New York. Completed by Day Environmental, Inc. for the City of Rochester, April 19, 2000
- Phase I/II Environmental Site Assessment for 1630 Dewey Avenue and 149/161 Palm Street. Completed by PEI for Norstar in September 2006
- Supplemental Site Characterization 1630 Dewey Avenue Rochester, New York. Completed by ATC Associates for Norstar in July 2010

Based these investigations, petroleum-like contamination was found in site soils in certain areas of the property and dry cleaning solvents were found in groundwater along the northern border of the property. Four separate petroleum source areas were identified:

- Area A - the area along and adjacent to the south-southeast side of the Dewey Street structure which is the location of an estimated 15,000-20,000-gallon fuel oil underground storage tank (UST). Assessment results in this area suggest limited soil impacts.
- Area B - the area along and adjacent to the northeast side of the Dewey Street structure which is the location of an estimated 500-1,000-gallon gasoline UST. Assessment results in this area indicate impacted soil towards Palm Street.
- Area C – the area of the former USTs identified in a previous investigation. This area appears to have limited soil impacts isolated to the general area
- Area D – the grass covered area east of the boiler room in the Dewey Street Structure. This area indicated limited petroleum-like soils impacts to that area

No source area for the low levels of dry cleaning solvents in the groundwater has been identified and may have been removed and/or associated with releases years ago.

To address the four identified source areas of apparent petroleum release and the relative low levels of dry cleaning solvents in downgradient wells, interim remedial measures (IRMs) have been established. These include the excavation, removal and disposal the two USTs and the impacted soil from the four “source” areas. Residual groundwater contamination can then be treated with Accelerated Bioremediation by the addition of a hydrogen release type mixture to the soil/water interface in the northern excavations prior to clean fill replacement. This will reduce any residual levels of petroleum/solvents in the downgradient wells which can be monitored. In addition, the existing structure will be demolished. A new mixed use office/residential complex will be constructed at the property. This new structure will include vapor barrier and passive vapor intrusion system which can be activated to an active system, if necessary.

During the above remediation activities an assessment will be made as to whether on-site contamination has the potential to migrate off-site via groundwater or soil vapor where it could

represent an exposure concern.

Asbestos Containing Materials

The following pre-demolition asbestos surveys have been conducted at the existing vacant Crescent Puritan building:

- Asbestos Survey complete by Galson Corporation for the City of Rochester, Department of Environmental Services, dated February 1999.

- Limited Asbestos Containing Materials Survey completed by Bergmann Associates for Norstar Development USA, L.P., dated December 1999.

The Bergmann survey was limited to an assessment of building materials that that may not have been included in the earlier Galson survey. Both surveys indicated the presence of asbestos containing materials (ACM) throughout the building.

Any universal wastes within the building will be identified and inventoried by the demolition contractor and the owner's representative prior to demolition. Items may include drums/containers, electrical/process equipment, fluorescent light fixtures, etc. Samples will also be collected for analysis of unidentified wastes to determine proper disposal.

2.2 Hazard Evaluation

Specific health and safety concerns particular to the project tasks include working around asbestos containing materials (ACM) and low levels of petroleum in soils and dry cleaning solvents in groundwater from the northern perimeter. Physical hazards include those associated with working near a building that is being demolished and open excavations, as well as working adjacent manual/mechanical operation of field equipment. The asbestos abatement and demolition IRM Contractor and remediation contractor will have separate detailed health and safety procedures/requirements for the removal and disposal of ACM, the demolition of the building, removal of USTs and impacted soil which will meet or exceed requirements in this plan. Their plans will be attached to this plan.

2.2.1 Chemical Hazards

Chemical hazards detected at the site include dry cleaning solvents (Tetrachloroethylene and 1,2-Dichloroethane) and petroleum related chemical compounds.

Tetrachloroethylene is widely used for dry-cleaning fabrics and metal degreasing operations. The main effects of tetrachloroethylene in humans are neurological, liver, and kidney effects following acute (short-term) and chronic (long-term) inhalation exposure. Adverse reproductive effects, such as spontaneous abortions, have been reported from occupational exposure to tetrachloroethylene; however, no definite conclusions can be made because of the limitations of the studies. Results from epidemiological studies of dry-cleaners occupationally exposed to

tetrachloroethylene suggest increased risks for several types of cancer. Animal studies have reported an increased incidence of liver cancer in mice, via inhalation and gavage (experimentally placing the chemical in the stomach), and kidney and mononuclear cell leukemia in rats. In the mid-1980s, EPA considered the epidemiological and animal evidence on tetrachloroethylene as intermediate between a probable and possible human carcinogen (Group B/C).

Effects resulting from acute, inhalation exposure of humans to tetrachloroethylene vapors include irritation of the upper respiratory tract and eyes, kidney dysfunction, and at lower concentrations, neurological effects, such as reversible mood and behavioral changes, impairment of coordination, dizziness, headache, sleepiness, and unconciousness. Animal studies have reported effects on the liver, kidney, and central nervous system (CNS) from acute inhalation exposure to tetrachloroethylene. Acute animal tests in mice have shown tetrachloroethylene to have low toxicity from inhalation and oral exposure.

The major effects from chronic inhalation exposure to tetrachloroethylene in humans are neurological effects, including sensory symptoms such as headaches, impairments in cognitive and motor neurobehavioral functioning and color vision decrements. Other effects noted in humans include cardiac arrhythmia, liver damage, and possible kidney effects. Animal studies have reported effects on the liver, kidney, and CNS from chronic inhalation exposure to tetrachloroethylene

1,2-Dichloroethane (1,2-DCA). 1,2-DCA is a colorless, heavy and flammable liquid which evaporates quickly at room temperature and has a sweet odor and taste. Its vapor pressure at 25°C is 79.1 mmHg and density is 1.23 g/cm^3 at 20°C. Its melting and boiling point are —35.5°C and 83.5°C, respectively (ATSDR, 2001).

1,2-DCA is classified as a group B2 carcinogen, which means it is a probable human carcinogen through the oral and inhalation routes (Opresko, 1994). The routes of exposure to humans are absorption through the lungs, gastrointestinal system, and skin. It is distributed throughout the body, but concentrates in the adipose tissue and is generally excreted with soluble urinary metabolites. Some health effects caused by exposure to 1,2-DCA are bronchitis, central nervous system depression, dizziness, vomiting, partial paralysis, liver and kidney damage, hemorrhages throughout the body, and death (Opresko, 1994).

1,2-DCA is mainly used in the manufacturing of vinyl chloride and other compounds including PCE, TCE, and 1,1,1-trichloroethane Other uses are as a solvent to degrease metals, as well as a fumigant and lead-scavenging agent in gasoline. It is also used in paints, coatings, adhesives, varnishes, finish removers, soaps, and scouring agents (Opresko, 1994).

Petroleum related compounds. Only a few distinct petroleum related compounds were detected in soil samples from the site at concentrations that slightly exceeded Part 375 soil cleanup requirements. However, a significant concentration of tentatively identified compounds (TICs) were detected which indicates that weathered petroleum compounds exist in the soils from the break down of the original petroleum compounds over time. Petroleum is a mixture of chemicals, but they are all made mainly from hydrogen and carbon, called hydrocarbons. Scientists divide petroleum hydrocarbons into groups that act alike in soil or water. These groups are called

petroleum hydrocarbon fractions. Each fraction contains many individual chemicals.

Some chemicals that may be found in petroleum products include hexane, jet fuels, mineral oils, benzene, toluene, xylenes, naphthalene, and fluorene, as well as other petroleum compounds and gasoline components.

How might someone be exposed to petroleum hydrocarbons?

- Everyone is exposed to petroleum hydrocarbons from many sources.
- Breathing air at gasoline stations, using chemicals at home or work, or using certain pesticides.
- Drinking water contaminated with petroleum hydrocarbons.
- Working in occupations that use petroleum products.
- Living in an area near a spill or leak of petroleum products.
- Touching soil contaminated with petroleum hydrocarbons.

Potential routes of exposure include:

- Skin contact;
- Inhalation of vapors or particles;
- Ingestion; and,
- Entry of contaminants through cuts, abrasions or punctures.

The anticipated levels of personnel protection will include Level D personal protective equipment:

1. Long sleeve shirt and long pants (recommended),
2. Work boots,
3. Hard hats, if work is conducted around heavy equipment or overhead hazards,
4. Safety Glasses
5. Gloves to include work gloves and chemical resistant gloves when sampling potentially contaminated materials.

Modifications may include chemically resistant gloves, boots/booties, and overalls. If monitoring levels indicate levels requiring respiratory protection (sustained PID readings at or above 5 ppm above a daily established background), work will be halted pending discussions with field and office management. If any readings are recorded above background, work will proceed with caution and breathing zone monitoring will be conducted.

2.2.2 Other Physical Hazards

Depending on the time of year, weather conditions or work activity, some of the following potential physical hazards could result from project activities:

1. Noise
2. Heat Stress

3 . Cold Stress
4 . Slips, trips, and falls
5 . Exposure to moving machinery or stored energy, particularly during Lime removal and drilling
6 . Physical eye hazards
7 . Lacerations and skin punctures
8 . Back strain from lifting equipment
9 . Electrical storms and high winds
1 0 . Contact with overhead or underground utilities

Slips, Trips, and Falls. Field personnel shall become familiar with the general terrain and potential physical hazards which would be associated with accidental risk of slips, trips, and/or falls. Special care shall be taken when working near demolition operations or demolition material stockpiles. Workers will observe all pedestrian and vehicle rules and regulations. Extra caution will be observed while working near roadways and while driving in reverse to ensure safety.

Noise. All personnel shall wear hearing protection devices, such as ear muffs or ear plugs, if work conditions warrant. These conditions would include difficulty hearing while speaking to one another at a normal tone within three feet. If normal speech is interfered with due to work noise, the field safety officer will initiate the mandatory use of hearing protection around the backhoe, or other noise-producing equipment or events.

Heat/Cold Stress. Heat stress work modification may be necessary during ambient temperatures of greater than 29° C (85° F) while wearing normal clothing or exceeding 21' C (70° F) while wearing personnel protective clothing. Because heat stress is one of the most common and potentially serious illnesses at work sites, regular monitoring and preventive measures will be utilized should conditions warrant. This may include additional rest periods, supplemental fluids, restricted consumption of drinks containing caffeine or alcohol, use of cooling vests, or modification of work practices.

Most of the work to be conducted during the oversight and monitoring operations is expected to consist of light manual labor and visual observation. Given the nature of the work and probable temperatures, heat stress hazards are not anticipated.

If work is to be conducted during winter conditions, cold stress may be a concern to the health and safety of personnel. Wet clothes combined with cold temperatures can lead to hypothermia. If air temperature is less than 40° F (4° C) and an employee perspires, the employee must change to dry clothes. The following summary of the signs and symptoms of cold stress are provided as a guide for field and safety personnel.

Incipient frostbite is a mild form of cold stress characterized by sudden blanching or whitening of the skin.

Chilblain is an inflammation of the hands and feet caused by exposure to cold moisture. It is characterized by a recurrent localized itching, swelling, and painful inflammation of the fingers, toes, or ears. Such a sequence produces severe spasms, accompanied by pain.

Second-degree frostbite is manifested by skin with a white, waxy appearance and the skin is firm to the touch. Individuals with this condition are generally not aware of its seriousness because the underlying nerves are frozen and unable to transmit signals to warn the body. Immediate first aid and medical treatment are required.

Third-degree frostbite will appear as blue blotchy skin. The tissue is cold, pale, and solid. Immediate medical attention is required.

Hypothermia develops when body temperature falls below a critical level. In extreme cases, cardiac failure and death may occur. Immediate medical attention is warranted when the following symptoms are observed:

1. Involuntary shivering
2. Irrational behavior
3. Slurred speech
4. Sluggishness

Fire and Explosion. These hazards will be minimal for activities associated with this project. All heavy equipment will be equipped with a fire extinguisher.

Trenching and Excavations. There are a variety of potential health and safety hazards associated with excavations. These include:

- Surface encumbrances, such as structures, fencing, stored materials, etc., may interfere with safe excavations;
- Below- and above-ground utilities, such as water and sewer lines, gas lines, power lines, telephones, and optical cable lines, etc.;
- Overhead power lines and other utilities which may be contacted by the excavation equipment;
- Vehicle and heavy equipment traffic around the excavations;
- Falling loads from lifting or digging equipment;
- Water accumulation within excavations;
- Hazardous atmospheres, such as oxygen deficiency, flammable gases or vapors, and toxic gases which may occur in excavations,
- Falling into or driving equipment or vehicles into unprotected or unmarked excavations; and,
- Cave-in of loose rocks and soil/lime at the excavation face.

OSHA requirements for trenching and excavations are contained in 29 CFR, subpart P, 1926:650 thru 1926.652.

Basic minimum excavation requirements should include:

- Personnel entry into excavations should be minimized, whenever possible and no entry will occur in pits below 4 feet in depth.
- Sloping, shoring or some other equivalent means should be utilized, as required. Surface encumbrances such as structures, fencing, piping, stored material etc. which may interfere with safe excavations should be avoided, removed or adequately supported prior to the start of excavations. Support systems should be inspected daily.

- Underground utility locations should be checked and determined and permits as necessary should be in place prior to initiating excavations. Local utility companies will be contacted at least two days in advance, advised of proposed work, and requested to locate underground installations. When excavations approach the estimated location of utilities, the exact location should be determined by careful probing or hand digging and when it is uncovered, proper supports should be provided.
- A minimum safe distance of 15 feet should be maintained when working around overhead high-voltage lines or the line should be de-energized following appropriate lock-out and tag-out procedures by qualified utility personnel.
- Excavations five feet or more deep if entered will require an adequate means of exit, such as a ladder, ramp, or steps and located so as to require no more than 25 feet of lateral travel. Under no circumstances should personnel be raised using heavy equipment.
- Personnel working around heavy equipment, or who may be exposed to public vehicular traffic should wear a traffic warning vest. At night, fluorescent or other reflective material is recommended to be worn.
- Heavy equipment or other vehicles operating next to or approaching the edge of an excavation will require that the operator have a clear view of the edge of the excavation, or that warning systems such as barricades, hand or mechanical signals, or stop logs be used. If possible the surface grade should slope away from the excavation.
- Personnel should be safely located in and around the trench/excavation face and should not work underneath loads handled by lifting or digging equipment.
- Hazardous atmospheres, such as oxygen deficiency (atmospheres containing less than 19.5% oxygen), flammable gases or vapors (airborne concentrations greater than 20% of the lower explosive limit), and toxic gases or vapors (airborne concentrations above the OSHA Permissible Exposure Limit or other exposure limits) may occur in excavations. Monitoring should be conducted for hazardous atmospheres prior to entry and at regular intervals. Ventilation or respiratory protection may be provided to prevent personnel exposures to oxygen deficient or toxic atmospheres. Periodic retesting (at least each shift) of the excavation will be conducted to verify that the atmosphere is acceptable. A log or field book records should be maintained.
- Personnel should not work in excavations that have accumulated water or where water is accumulating unless adequate precautions have been taken. These precautions can include special support or shield systems, water removal systems such as pumps, or safety harnesses and lifelines. Groundwater entering the excavation should be properly directed away and down gradient from the excavation.
- Safety harnesses and lifelines should be worn by personnel entering excavations that qualify as confined spaces.
- Excavations near structures should include support systems such as shoring, bracing, or underpinning to maintain the stability of adjoining buildings, walls, sidewalks, or other structures endangered by the excavation operations.
- Loose rock, excavated or other material, and spoils should be effectively stored and retained at least two and preferably 5 feet or more from the edge of the excavation. Barriers or other effective retaining devices may be used in order to prevent spoils or other materials from falling into the excavation.
- Walkways or bridges with standard guardrails that meet OSHA specifications will be provided

where employees, the public, or equipment are required to cross over excavations.

- Adequate barrier physical protection should be provided and excavations should be barricaded or covered when not in use or left unattended. Excavations should be backfilled as soon as possible when completed.
- Safety personnel should conduct inspections prior to the start of work and as needed throughout the work shift and after occurrence that increases the hazard of collapse (i.e., heavy rain, vibration from heavy equipment, freezing and thawing, etc.).
- Personnel working in excavations should be protected from cave-ins by sloping and/or benching of excavation walls, a shoring system or some other equivalent means in accordance with OSHA regulations. Soil type is important in the determination of the angle of repose for sloping and benching, and the design of shoring systems.

2.2.3 Biological Hazards

Biological hazards can result from encounters with mammals, insects, snakes, spiders, ticks, plants, parasites, and pathogens. Mammals can bite or scratch when cornered or surprised. The bite or scratch can result in local infection with systemic pathogens or parasites. Insect and spider bites can result in severe allergic reactions in sensitive individuals. Exposure to poison ivy, poison oak or poison sumac results in skin rash. Ticks are a vector for a number of serious diseases. Dead animals, organic wastes, and contaminated soil and water can harbor parasites and pathogens. These hazards will be reduced to non-existent if work is conducted during late fall and winter months. The following are highlighted because they represent more likely concerns for the site-specific tasks and location:

Bees, Ants, Wasps and Hornets. Sensitization by the victim to the venom from repeated stings can result in anaphylactic reactions. If a stinger remains in the skin, it should be removed by teasing or scraping, rather than pulling. An ice cube placed over the sting will reduce pain. An analgesic corticosteroid lotion is often useful. People with known hypersensitivity to such stings should consult with their doctor about carrying a kit containing an antihistamine and aqueous epinephrine in a pre-filled syringe when in endemic areas. Nests and hives for bees, wasps, hornets and yellow jackets often occur in the ground, trees and brush. Before any nests or hives are disturbed, an alternate sampling location should be selected. If the sample location cannot be relocated, site personnel who may have allergic reactions shall not work in these areas.

Storm Conditions. When lightening is within 10 miles of the work site, all personnel should evacuate to a safe area.

Sun. When working in the sun, personnel should apply appropriate sun screening lotions (30 sun screen or above), and/or wear long sieve clothing and hats.
Field personnel should refrain from handling any foreign objects such as hypodermic needles, glass, etc.

2.2.4 Activity Hazard Analysis

Table 1 presents a completed activity hazard analysis for the performance of IRM and SI

Table 1. Activity Hazard Analysis

PRINCIPAL STEPS	POTENTIAL SAFETY/ HEALTH HAZARDS	RECOMMENDED CONTROLS
1. IRM-Demolition 2. IRM Site Remediation &SI soil/groundwater investigation	1. Exposure Demolition & asbestos operations and physical hazards 2. Potential exposure to low levels of solvents and petroleum products	Covers all hazards 1. Use of administrative controls (site control and general safety rules), work cloths, dust suppression 2. Use of real-time monitoring and action levels 3. Use Physical Hazards SOPs
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Excavation and other heavy equipment, Backhoe and/or Geoprobe	1. Daily inspection of equipment 2. Continuous safety oversight	1. Safety plan review 2. Routine safety briefings

3.0 MONITORING

The purpose of air monitoring is to monitor for potential airborne contaminants and to verify that protection levels are suitable. Monitoring will be performed for dust/particulates and volatile organic compounds during excavation activities. Daily background and calibration readings will be recorded prior to the start of field activities. All monitoring equipment used during this investigation will be maintained and calibrated and records of calibration and maintenance will be kept in accordance with 29 CFR 1910.120(b)4(11)E. The Community Air Monitoring Program (CAMP) is discussed in Section 9.0.

3.1 Particulate Monitoring

PEI will obtain real-time air monitoring readings from upwind and downwind locations in accordance with DER-10 for community air-monitoring (refer to Section 9.0).

PEI will complete daily field reports that document activities performed equipment and manpower onsite, screening and/or monitoring results, general conditions and weather conditions.

Air Monitoring for Worker Protection

Real time air monitoring will be conducted during building demolition, UST removal and when site soils are disturbed including during, excavation and grading and other activities. A real time personal aerosol monitor (i.e., TSI SidePak AM5 10 Personal Aerosol monitor or equivalent) will be used. This monitor is a laser photometer which measures data as both real-time aerosol mass-

concentration and 8-hour time weighted average (TWA). For this project the monitor will be used to measure real-time concentrations in milligrams per meter cubed (mg/m^3). Action levels are based on potential exposure to calcium carbonate and will be as follows:

- 15 mg/m^3 total dust
- 5 mg/m^3 respirable fraction for nuisance dusts

Dust suppression techniques should be employed prior to exceeding the action levels. However, if these if these levels are exceeded work will be halted and additional dust suppression techniques employed until safe levels are reached.

3.2 Total Volatile Organics Monitoring

Monitoring of volatile organic compounds will be conducted using a photo-ionization detector (PID). If a sustained reading of 5 ppm above background occurs, work will be halted and personnel will evacuate the work area. Levels will be allowed to stabilize and another reading will be taken in the breathing zone. If background levels continue to be exceeded, work will not continue at that location and the project manager will be notified of the situation. Action levels will remain the same.

4.0 SAFE WORKING PRACTICES

4.1 General Practices

The following general safe work practices apply:

- Eating, drinking, chewing gum or tobacco and smoking are prohibited within the work area as part of safe work practices.
- Contact with potentially contaminated substances should be avoided. Puddles, pools, mud, etc. should not be walked through if possible. Kneeling, leaning, or sitting on equipment or on the ground should be avoided whenever possible.
- Upon leaving the work area, hands, face and other exposed skin surfaces should be thoroughly washed.
- Unusual site conditions shall be promptly conveyed to the site manager and safety personnel as well as the project management for resolution.
- A first-aid kit shall be available at the site.
- Field personnel should use all their senses to alert themselves to potentially dangerous situations (i.e., presence of strong, irritating, or nauseating odors).
- Personal hygiene practices such as no eating, drinking or smoking will be followed.
- If severe dusty conditions hazardous to the crew are present, soils will be dampened to mitigate dust. All equipment will be cleaned before leaving the work area.
- Field personnel must attend safety briefings and should be familiar with the physical characteristics of the investigation, including:
  - Accessibility to associates, equipment, and vehicles.
  - Areas of known or suspected contamination.
  - Site access.
  - Routes and procedures to be used during emergencies.
- Personnel will perform all investigation activities with a buddy who is able to:

– Provide his or her partner with assistance.
- Notify management / emergency personnel if emergency help is needed.

- Excavation activities shall be terminated immediately in event of thunder and/or electrical storm.
- The use of alcohol or drugs at the site is strictly prohibited.

5.0 PERSONAL SAFETY EQUIPMENT AND SITE CONTROL

5.1 Personal Safety Equipment

As required by OSHA in 29 CFR 1920.132, this plan constitutes a workplace hazard assessment to select personal protective equipment (PPE) to perform the site investigation.

The PPE to be donned by on-site personnel during this investigation are those associated with the industry standard of level D. Protective clothing and equipment to initiate the project will include:

- Work clothes
- Work boots
- Work gloves as necessary
- Hard hat if work is conducted in areas with overhead danger
- Hearing protection as necessary

Modifications may include chemically resistant gloves, boots/booties, and overalls. If monitoring levels indicate levels requiring respiratory protection (sustained readings at or above action levels above a daily established background), work will be halted pending discussions with field and office management.

5.2 Site Control

Site control will be established near each work zone by the Contractor. The purpose is to control access to the immediate work areas from individuals not associated with the project. Site control limits will be established by the Contractor in his HASP. All work zones will be fenced off with controlled access and appropriately designated as an exclusion area.

5.2.1 Work Zones (For excavations/drilling using heavy equipment or deeper than 3 feet)

Each excavation will be set up in work zones to include an exclusion area and support zone. Exact configuration of each zone is dependent upon location, weather conditions, wind direction and topography. The Contractor's safety manager will establish the control areas daily at each excavation.

An area of 10 feet (as practical) around each excavation will be designated as the exclusion area. This is the area where potential physical hazards are most likely to be encountered by field personnel. The size of the exclusion area may be altered to accommodate site conditions and the drilling/excavation location. If levels of protection higher than level D are used, this plan will be modified to include decontamination procedure. The Site excavation contractor will be required to have eye/face wash equipment/means available on-site.

A support area will be defined for each field activity. Support equipment will be located in this clean area. Normal work clothes are appropriate within this area. The location of this area depends on factors such as accessibility, wind direction (upwind of the operation.), and resources (i.e., roads, shelter, utilities). The location of this zone will be established daily.

Excavation areas will be filled and or secured (fencing) to prevent access from the general public.

6.0 EMERGENCY INFORMATION

In the event of an emergency, the field team members or the site safety manager will employ emergency procedures. A copy of emergency information will be kept in the field vehicle and will be reviewed during the initial site briefing. Copies of emergency telephone numbers and directions to the nearest hospital will be prominently posted in the field vehicle.

6.1 Emergency Medical Treatment and First Aid

A first aid kit large enough to accommodate anticipated emergencies will be kept in the PEI field vehicle. If any injury should require advanced medical assistance, emergency personnel will be notified and the victim will be transported to the hospital. The Contractor will establish his own first aid station and details will be provided in his HASP.

In the event of an injury or illness, work will cease until the field safety and oversight inspector has examined the cause of the incident and taken appropriate corrective action. Any injury or illness, regardless of extent, is to be reported to the project manager.

6.2 Emergency Telephone Numbers and Hospital

Emergency telephone numbers for medical and chemical emergencies will be posted in the field vehicle are listed below:

Ambulance	911
Fire	911
Police - NYS Troopers	911
Poison Control Center	1-800-888-7655
NYSDEC Spills Hotline	1-800-457-7362

PEI Project Manager, Mr. Peter J. Gorton: Work 716 - 821-1650 & Cellular 716-308-8220
PEI H & S & Oversight Inspector, Russ Lewis Cell 716-783-2835
NYSDEC Project Manager, Mr. Gary Bonarski 585-226-5328
NYSDOH Project Manager, Justin Deming (518) 402-7860

Norstar VP Construction, Sam Finlay 716-847-1098 Ext 13
Norstar Sr. project manager, Lori Harris 518-431-1051

Hospital – Rochester General Hospital
1425 Portland Avenue

Rochester, NY 14621

Start out going NORTH on DEWEY AVE (From A on Map) toward STEKO AVE.	0.2 mi
Turn RIGHT onto W RIDGE RD/NY-104 E. Continue to follow NY-104 E.	2.4 mi
Take the ramp toward CARTER ST/PORTLAND AVE.	0.1 mi
Stay STRAIGHT to go onto RT-104.	0.4 mi
Turn RIGHT onto PORTLAND AVE/CR-114.	0.2 mi
1425 PORTLAND AVE is on the RIGHT (B on Map)	

See attached map for route to the Hospital Facility.

Verbal communications between workers or use of a site vehicle horn repeated at intervals of three short beeps shall be used to signal all on-site personnel to immediately evacuate the area and report to the vehicle parking area.

6.3 Emergency Standard Operating Procedures

The following standard operating procedures are to be implemented by on-site personnel in the event of an emergency. The Contractor's field safety manager along with PEI oversight Inspector shall manage response actions.

Upon notification of injury to personnel, the designated emergency signal shall be sounded, if necessary. All personnel are to terminate their work activities and assemble in a safe location. The emergency medical service and hospital emergency room shall be notified of the situation. If the injury is minor, but requires medical attention, the field safety manager shall accompany the victim to the hospital and provide assistance in describing the circumstances of the accident to the attending physician.

Upon notification of an equipment failure or accident, the field safety manager shall determine the effect of the failure or accident on site operations. If the failure or accident affects the safety of personnel or prevents completion of the scheduled operations, all personnel are to leave the area until the situation is evaluated and appropriate actions taken.

Upon notification of a natural disaster, such as tornado, high winds, flood, thunderstorm or earthquake, on-site work activities are to be terminated and all personnel are to evacuate the area.

6.4 Emergency Response Follow-Up Actions

Following activation an Emergency Response, PEI Oversight inspector shall notify the PEI project manager regarding any emergency involving PEI personnel. The Contractor's field safety manager shall submit a written report documenting the incident to PEI and Norstar site representatives

6.5 Medical Treatment for Site Accidents/Incidents

The Contractor's field safety manager shall be informed of any site-related injury, exposure or medical condition resulting from work activities. All personnel are entitled to medical evaluation and treatment in the event of a site accident or incident.

6.6 Site Medical Supplies and Services

The Contractor's field safety manager or a trained first aid crew member shall evaluate all injuries at the site and render emergency first-aid treatment as appropriate. If an injury is minor but requires professional medical evaluation, the field safety manager shall escort the employee to the appropriate emergency room. For major injuries occurring at the site, emergency services shall be requested.

A first-aid kit shall be available, readily accessible and fully stocked. The first-aid kit shall be located within specified vehicles used for on-site operations.

6.7 Universal Precautions

Universal precautions shall be followed on-site at all times. This consists of treating all human blood and certain body fluids as being infected with Human Immune Deficiency Virus (HIV), Hepatitis B virus (HBV), and other blood borne pathogens. Clothing and first-aid materials visibly contaminated with blood or other body fluids will be collected and placed into a biohazard bag. Individuals providing first aid or cleanup of blood- or body-fluid contaminated items should wear latex gloves. If providing CPR, a one-way valve CPR device should be used. Biohazard bags, latex gloves, and CPR devices will be included in the site first-aid kits.

Work areas visibly contaminated with blood or body fluids shall be cleaned using a 1:10 dilution of household bleach. If equipment becomes contaminated with blood or body fluids, and can not be sufficiently cleaned, the equipment shall be placed in a plastic bag and sealed.

Any personnel servicing the equipment shall be made aware of the contamination, so that proper precautions can be taken.

7.0 RECORD KEEPING

The Contractor's field manager and safety manager are responsible for site record keeping. Prior to the start of work, they will review this Plan along with the Contractor's HASP.

A Site Safety Briefing will be completed prior to the initiation of investigation activities. This shall be recorded in the field log book An Accident Report should be completed by the Field Manager in the event that an accident occurs and forwarded to the office administrative manager.

8.0 PERSONNEL TRAINING REQUIREMENTS

8.1 Initial Site Entry Briefing

Prior to initial site entry, the Contractor's field safety manager shall provide all personnel (including site visitors) with site-specific health and safety training. A record of this training shall be maintained. This training shall consist of the following:

- Discussion of the elements contained within this plan
- Discussion of responsibilities and duties of key site personnel
- Discussion of physical, biological and chemical hazards present at the site
  Discussion of work assignments and responsibilities
- Discussion of the correct use and limitations of the required PPE
- Discussion of the emergency procedures to be followed at the site
- Safe work practices to minimize risk
- Communication procedures and equipment
- Emergency notification procedures

8.2 Daily Safety Briefings

The Contractor's field safety manager will determine if a daily safety briefing with all site personnel is needed. The briefing shall discuss the specific tasks scheduled for that day and the following topics:

- Specific work plans
- Physical, chemical or biological hazards anticipated
- Fire or explosion hazards
- PPE required
- Emergency procedures, including emergency escape routes, emergency medical treatment, and medical evacuation from the site
- Weather forecast for the day
- Buddy system
- Communication requirements
- Site control requirements
- Material handling requirements

9.0 COMMUNITY AIR MONITORING PROGRAM (CAMP)

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the upwind and downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities)

from potential airborne contaminant releases as a direct result of investigative and remedial work activities.

The generic CAMP presented in Attachment 4 from *NYSDEC DER-10* titled *Appendix 1A-New York State Department of Health Generic Community Air Monitoring Plan* will be followed and adhered to for the building demolition, IRMs and similar applicable areas.

A program for suppressing fugitive dust and particulate matter monitoring will also be conducted in accordance *NYSDEC DER-10* titled *Appendix 1B Fugitive Dust and Particulate Monitoring* which is also provided in Attachment 4. The fugitive dust suppression and particulate monitoring program will be employed at the site during building demolition, IRM site remediation and other intrusive activities which warrant its use.

Both the CAMP and the fugitive dust suppression and particulate monitoring program will be carried out be PEI the Owner's consultant. Monitoring results of the CAMP will be reported to the New York State Department of Health on a daily basis for review.

10.0 POTENTIAL HAZARDS AND OSHA STANDARDS

A table of Potential Hazards and OSHA Standards for Consideration during the building demolition and IRMs is provided in Attachment 5.

ATTACHMENT 1

Heat Stress management Program & procedures

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PANAMERICAN

PANAMERICAN HEAT STRESS MANAGEMENT PROGRAM

INTRODUCTION

Panamerican employees engage in a variety of activities with potential exposure to excessive ambient temperatures and humidity, with the overall result being Aheat stress@. This procedure establishes the Panamerican Heat Stress Management Program. It establishes responsibilities and basic requirements for personnel who may be required to work in situations where the ambient temperature exceeds 21° C (70° F) while wearing protective equipment (e.g., hazardous waste site investigations) or when the ambient temperature exceeds 29° (85° F) while wearing normal clothing. Because heart stress is one of the most common and potentially serious illnesses at job sites and particularly hazardous waste sites, regular monitoring and other preventive measures are warranted.

There are no regulations addressing heat stress. However, it should be noted that OSHA does recognize heat stress as a potentially serious health hazard and can site employers under the Ageneral duty clause@ of the Occupational Safety Health Act if heat-related illness is occurring or likely to occur.

PROGRAM ADMINISTRATION AND RESPONSIBILITIES

The Heat Stress Management Program is administered by Panamerican Managers and Health and Safety personnel.

These Individuals:

- Oversee the implementation of the Heat Stress Management Program;
- Periodically audit and evaluate program implementation;
- Evaluate this procedure on an ongoing basis to see that it reflects current practice and regulations;
- Assist field crews in their implementation of this procedure.

Project Managers (PM) and Safety Personnel are responsible for:

- Implementing this Procedure in all field operations:
- Providing guidance to staff regarding heat stress management as described in the Procedure; and
- Providing feedback to management regarding program effectiveness.

Staff Members are responsible for:

- Complying with this Procedure as it applies to their activities; and
- Providing feed back to their supervisor regarding program effectiveness.

HEAT STRESS HAZARDS AND RISK FACTORS

Heat Stress is defined as the total net load on the body with contributions from both exposure to external sources, such as sunshine and hot surfaces, and from internal metabolic heat production. A person=s

exposure to the increased ambient temperatures and humidity produces physiological responses referred to as heat stress which are characterized by an increase in the: a) Acore@ or Adeep body temperature@. b) heart rate, c) blood flow to the skin, and d) water and salt loss due to sweating. Conditions of excessive heat stress may occur either when the physical work is too heavy or the environment is too hot in relation to the work being performed. If work is performed under hot environmental conditions, the work load effort must be reviewed and the heat exposure limit maintained at or below the levels to protect the worker from the risk of acute heat illness.

In general, there are four types of physiological disorders associated with heat stress. They include:

- Heat Rash - a skin reaction occurring as a result of obstructed sweat glands, often associated with impermeable clothing.

- Heat Cramps - painful muscle spasms of extremities and abdomen, resulting from inadequate balance of electrolytes which are lost from sweating.

- Heat Exhaustion - a mild form of heat stroke due to depletion of body fluids and electrolytes. Blood vessels dilate despite decreased volume of blood. Symptoms include weakness, dizziness, nausea, rapid pulse, and a small increase in body temperature.

- Heatstroke - a potentially fatal disorder resulting from failure of the body=s thermoregulatory system. The classical description of heatstroke includes (1) a major disruption of central nervous function (unconsciousness of convulsions), (2) a lack of sweating (3) hot, dry, red or mottled skin, and (4) a core temperature in excess of 41^{o}C (105.8^{o} F). Heatstroke is a serious medical condition which calls for emergency medical action.

Seven factors play significant roles in the development of or predisposition to, heat stress disorders. These factors include:

- Acclimatization - Heat acclimatization leads to increased and quicker sweating, cooler skin due to an increase in evaporative cooling and a lower, more stable core body temperature. Maximal sweating rates in unacclimatized persons are lower, but salt concentrations in their perspiration are higher, requiring a higher rate of salt replacement.

- Age - Older individuals are generally more susceptible to heat stress than younger individuals. However, older healthy workers are able to perform well in hot jobs if permitted to proceed at a self-regulated pace.

- Gender - The average woman has a lower aerobic capacity than a similar-sized man. Nevertheless, when working at similar proportions of their maximum aerobic capacity, women perform similarly or only slightly less well than men.

- Body Fat - The lower level of physical fitness, decreased maximum work capacity and decreased cardiovascular capacity frequently associated with obesity predispose individuals to heat disorders.

- Water and Electrolyte Balance - Sustained, effective work performance in heat requires a

replacement of body water and electrolytes lost through sweating. If this water is not replaced by drinking, continued sweating will draw on water reserves from both tissues and body cells leading to dehydration.

- Use of Alcohol and Medication - Not withstanding the potential hazards from impaired coordination and judgment, the ingestion of alcohol before or during work in the heat should not be permitted because it reduces heat tolerance and increases the risk of heat illness, Many drugs, including diuretics and antihypertensives, can interfere with the body=s thermoregulation.

- Physical Fitness - Physical conditioning enhances heat tolerance by increasing the functional capacity of the cardiovasculatory system, and reduces the time required to develop heat acclimatization by about 50% over those not physically fit.

The factors listed above are to be taken into account by all project personnel when planning or executing a project subject to heat stress conditions. The factors should be taken into consideration for:

- the development of the project schedule;
- the ordering of supplies/equipment;
- the support facilities to be made available at the site;
- the execution of work tasks; and
- the after work hours activities.

The following is a summary of signs and symptoms of heat stress:

Heat Rash may result from continuous exposure to heat or humid air .

Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include:

- Muscle Spasms
- Pain in the hands, feet and abdomen.

Heat Exhaustion occurs from increased stress on various body organs, including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include:

- Pale, cool and moist skin
- Heavy sweating
- Dizziness, fainting and nausea

Heat stroke is the most serious form of heat stress. Temperature regulation fails, and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury or death occurs. Competent medical help must be obtained. Signs and symptoms are:

- Red, hot and unusually dry skin
- Lack of or reduced perspiration
- Dizziness and confusion

- Strong, rapid pulse and coma.

HEAT AND STRESS PREVENTION

Preventive measures should be taken to prevent personnel from experiencing heat stress illness. Prevention of heat stress is also important because if an individual has experienced a heat illness incident, he has an increased likelihood of future occurrences. Preventive measures include: favorable work scheduling, acclimatization of workers to hot environments, drinking sufficient quantities of fluids, providing cool, sheltered work and rest areas, and utilizing cooling devices as appropriate of feasible. Heat stress monitoring/work rest regimens are discussed below.

Work Schedules and Activity

If possible, work should be scheduled during the coolest part of the day. Early morning and evening work can be considerably more effective than working midday when the additional time for breaks and heat stress monitoring are taken into account.

Employees should also be encourages to maintain a certain level of activity during the work shift. Prolonged standing in hot environments can lead to heat illness because the blood pools in the lower extremities. Workers should periodically walk about to encourage blood circulation from the feet and legs.

Acclimatization of Workers

A properly designed and applied heat acclimatization program will dramatically increase the ability of workers to work at a hot job and will decrease the risk of heat-related illnesses and unsafe acts. Heat acclimatization can usually be induced in 5 to 7 days of exposure to the hot job. For workers who have had previous experience with the job, the acclimatization regimen should be exposure for 50% on day 1, 60% on day 2, 80% on day 3 and 100% on day 4. For workers new to job the schedule should be 20% on day 1 with a 20% increase in each additional day.
Acclimatization can be induced by sustained elevations of the skin and core body temperatures above levels for the same work in cool environments for an hour or more per day. Acclimatization needs periodic reinforcement such as occurs daily during the work week. Persons may show some loss of acclimatization on the first day of the new shift after being idle for two days or over a weekend. After vacations of two weeks or longer he loss of acclimatization is substantial, several days at work will be needed before heat tolerance is fully restored.

Drinking Sufficient Quantities of Fluids

Under hot conditions where sweat production may reach 6 to 8 liters per day, voluntary replacement of the water lost is usually incomplete. The normal thirst mechanism is not sensitive enough to urge us to drink enough water to prevent dehydration. Individuals are seldom aware of the exact amount of seat they produce of how much water is needed to replace that lost in sweat; 1 liter/hour is not an uncommon rate of water loss. Every effort should be made to encourage individuals to drink water, low-sodium noncarbonated beverages or electrolyte replacement fluids (e.g., Gatorade). Lightly salted water (1 gram/liter of water (0.1%) or one level teaspoon per 15 quarts of water), should be provided to unacclimated workers. The salt should be dissolved completely and the water kept cool. Salt tablets as dietary supplements are not generally recommended.

Workers should drink at least 500 ml (one pint) of water before beginning work. The fluid should be maintained at temperatures of 10° to 15° (50 to 59° F). If possible, small quantities of fluids should be consumed at frequent intervals (e.g., 150 to 250 milliliters (ml), or at least a quarter pint, every 20 minutes) rather than the intake of 750 ml (3 cups) or more once per hour. Individuals vary, but water intake should total 4 to 8 liters (quarts) per day. When heat stress is considered a potential problem, a minimum of 1 liter/hour/person of water are to be maintained onsite. Individual paper or plastic cups will be provided in order to prevent the spread of communicable disease.

Alcohol and diuretics such as caffeine (contained in coffee, tea and soft drinks) can increase dehydration. Therefore employees with potential exposure to heat stress should be discouraged from the consumption of these types of fluids during and after working hours.

Cool, sheltered Work and Rest Areas

Exposure to direct sunlight significantly increases the overall thermal loading of the body, thereby increasing an individuals susceptibility to heat stress illnesses. Whenever possible work should be conducted under suspended tarps, in shady areas or in other sheltered areas in order to reduce thermal loading caused by the sun. Cool sheltered areas should be provided also for rest breaks. A rest area should be situated so that part of it is in the contamination reduction area so that workers can take breaks without being required to undertake a full decontamination procedure. Canopies or tarps and open air tents, are types of cool shelters which can provide shaded rest areas.

Cooling Devices

Auxiliary cooling devices can be successfully used to provide body cooling, especially to workers wearing protective garments at hazardous waste sites. Vortex coolers utilize high velocity air which is directed inside the protective clothing. Vortex coolers have been used successfully in some operations. Cooling vests utilizing Ablue ice@ type packs can provide some cooling to the torso, but add weight for the wearer and can inhibit body movements.

Newer, more sophisticated tube and refrigerant systems woven into undergarments are also available. However, some of these systems ,,may not be effective in situations where the work involves considerable motion, since bending and lifting can crimp the tubes, impending the flow of refrigerant.

Heat Stress Monitoring

Several heat stress monitoring systems have been devised to help manage heat stress in hot work environments. Panamerican performs heat stress monitoring when: 1) employees are wearing normal work clothing in ambient temperatures exceeding 29° C, (85° F) and 2) employees wearing chemical protective clothing (including paper coveralls) working in ambient temperatures exceeding 21° C (70° F). The temperature differential is related to the reduced ability of a person to maintain a core temperature of $\pm$ 37° C (98.6° F) when wearing chemical protective clothing.

It should be noted by personnel that there are no Afast and true@ methods of heat stress monitoring; likewise there are no regulations concerning heat stress monitoring. Individual susceptibility to heat stress is highly variable. Some individuals are highly susceptible to any increase in their internal body temperature while other individuals can work very well with internal body temperatures of 39°C (102.2° F) or higher.

The heat stress monitoring systems should be used by Site Safety Officers as guidelines and not necessarily as hard, fast rules. Individuals working in elevated temperatures should be queried on a regular basis regarding their perceived state of heat stress. If the calculated heat stress index value indicates that work can continue but a person states that they believe they are experiencing heat stress, the work effect should be discontinued and a rest break taken.

Likewise, if the calculated heat stress index value indicates that a rest break should be taken but the workers believe they can work longer, they should be permitted to work longer providing that their heart rates do not exceed 110 beats per minute. If the individual's heart rate rates exceed 110 beats per minute a rest break will be taken. In all cases, individual workers should not be permitted or expected to perform excessive work which could result in heat stress. If a SSO has any concerns that an individual may be pushing himself/herself past the Abreaking point@ the calculated work/rest regimen will be followed.

For strenuous field activities that are part of ongoing site work activities in hot weather, the following procedures shall be used to monitor the body=s physiological response to heat, and to monitor the work cycle of each site worker. There are two phases to this monitoring: the initial work/rest cycle is used to estimate how long the first work shifts of the day should be. Heart rate monitoring of each worker will establish the length of the successive work periods. Both phases are to be used are to be used for heat stress monitoring. Failure to use either one could place workers at risk of heat-related disorders.

Phase 1 - Determination of the Initial Work - Rest Regimen

The determination of the initial work - rest regimen can be performed using either of two methods:

-The Modified Dry Bulb Index; or
-The Wet Bulb Globe Thermometer (WBGT) Index

After the initial work - rest regimen has been determined, environmental conditions must be monitored for changes which would require a modification to the work - rest regimen. This, coupled with the heart rate monitoring, determines the work cycles to be followed on a site.

The Modified Dry Bulb Index accounts for the effects caused by solar, load, air temperature, and chemical protective clothing, under a light work load (walking at approximately 3 mph). A mercury thermometer, shielded from direct sunlight, is used to measure ambient temperature. The percentages of (of time) of sunlight and cloud cover are then estimated to determine a sunshine quality factor (e.g., 100% sunshine - no cloud cover = 1.0; 50% sunshine - 50% cloud cover = 0.5; 0% sunshine - 100% cloud cover = 0.0). When these two sets of values have been obtained, they are inserted into the following equation to calculate the adjusted temperature:

$$T\,(^{o}C, \text{adjusted}) = T\,(^{o}C, \text{actual}) + (7.2 \times \text{sunshine quality factor})$$

-OR-

$$T\,(^{o}F, \text{adjusted}) = T\,(^{o}F, \text{actual}) + (13 \times \text{sunshine quality factor})$$

After the adjusted temperature has been calculated, the length of the first work shift can be determined using the following table:

Initial Break and Physiological Monitoring Cycles

ADJUSTED TEMPERATURE	NORMAL WORK CLOTHES	PROTECTIVE CLOTHING
90^0F (32.2^0 C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5^0-90^0 F (30.8^0-32.2^0 C)	After each 60 minutes of work	After each 30 minutes of work
82.5^0-87.5^0 F (28.1^0-30.8^0 C)	After each 90 minutes of work	After each 60 minutes of work
77.5^0-82.5^0 F (25.3^0-28.1^0 C)	After each 120 minutes of work	After each 90 minutes of work
72.5^0-77.5^0 F (22.5^0-25.3^0 C)	After each 150 minutes of work	After each 120 minutes of work

NOTE: The standard rest period is 15 minutes

WET BULB GLOBE THERMOMETER INDEX

The Wet Bulb Globe Thermometer (WBGT) Index was developed by the U.S. Army in the 1950s to prevent heat stress in army recruits. The WBGT Index accounts for the effects caused by humidity, air movement, evaporation, air temperature and work rate. It does not, however, account for the effects of chemical protective clothing, non-acclimatized workers, age, or other factors which may affect the likelihood of heat stress. Because of this, it is necessary to make adjustments to the index and conduct Heart Rate Monitoring.

WBGT measurements are usually obtained through the use of are-contained electronic devices. Such devices are easy to set up and can provide the user with the capabilities to store data and download to print out a hard copy.

Heat produced by the body and the environmental heat together determine the total heat load. Therefore, after the WBGT Index has been obtained, the anticipated work load category of each job shall be determined and the initial-rest regimen established using the table below.

The work load category may be determined by ranking each job into light, medium and heavy categories on the basis of type of operation. Examples of each category are:

Light work:	sitting or standing to control machines, performing light hand work
Moderate work:	walking about with moderate lifting and pushing; and
Heavy work:	pick and shovel work.

PERMISSIBLE HEAT EXPOSURE			
WORK-REST REGIMEN	WORK LOAD		
	LIGHT	MODERATE	HEAVY
	30.0^0 C/86^0 F	26.7^0 C/80.1^0 F	25^0C/77^0F
75% Work-25% Rest Each Hour	30.6^0 C/87.1^0 F	28^0 C/82.4^0 F	25.9^0 C/78.6^0 F
50% Work-50% Rest Each Hour	31.4^0 C/88.5^0 F	29.4^0 C/85.0^0 F	27.9^0 C/82.2^0 F
25%Work-75 % Rest Each Hour	32.2^0 C/90.0^0 F	31.1^0 C/88.0^0 F	30.0^0 C/86.0^0 F

The table reads as follows:

Light, continuous work is possible at any WBGT reading up to 30^0 C (86^0F) but above that limit work breaks

are needed to recover from the heat; light work at temperatures of between 30.0 and 30.6^{0}C (86 to 87^{0}F) can be conducted, but 15 minute breaks must be taken every hour, etc. It is important to note that this table is applicable primarily to healthy, acclimatized personnel; wearing standard work clothing.

NOTE: An additional 6 to 11^{0}C (42.8 to 51.8^{0}F) must be added to the calculated WBGT temperature for personnel wearing chemical protective clothing prior to determining the initial work - rest regimen from this table. Because the WBGT Index does not take into account unacclimatized workers, or individual susceptibilities, the addition to the WBGT value does not eliminate the requirement for Heart Rate Monitoring after work has begun.

Phase 2 - Heart Rate Monitoring

An increase in the heart rate is a significant indication of stress, whether induced by exposure to heat or through physical labor. Although baseline heart rates can vary significantly between individuals and during the day for an individual, a heart rate of 110 beats per minute or greater is an indication of physiological stress. To prevent heat stress illnesses, the heart rate (HR) should be measured by radial (wrist) or carotid (neck) pulse for 30 seconds as early as possible in the rest period. The HR at the beginning of the rest period should not exceed 110 beats/minute. If the HR is higher, the next work period should be shortened by 33 percent while the length of the rest period stays the same. If the pulse rate still exceeds 110 beats/minute at the beginning of the next rest period, the following work period should be further shortened by 33 percent while the length of the rest period stays the same.

ATTACHMENT 2

Trenching & Excavating H & S Requirements

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Fax: (716) 821-1607

PANAMERICAN

PANAMERICAN TRENCHING AND EXCAVATION HEALTH AND SAFETY REQUIREMENTS

The following will apply to all activities associated with excavations:

REGULATORY AUTHORITY

Excavations will be performed in accordance with OSHA 29 CFR, subpart P, 1926:650-1926.652 and USACOE EM 385-1-1 section 25 requirements as they apply to project activities.

GENERAL

- **At all times the need for personnel to enter excavations will be minimized. Inspections or sample removal will be done from above the excavation, whenever possible.**
- **Personnel will only enter excavations after the requirements of this plan have been met.**
- **Personnel protective equipment including hard hat, safety glasses and steel-toe work boots may be required.**

SURFACE ENCUMBRANCES

Surface encumbrances such as structures, fencing, piping, stored material etc. which may interfere with safe excavations will be avoided, removed or adequately supported prior to the start of excavations. Support systems will be inspected daily.

UNDERGROUND UTILITIES

Underground utility locations will be checked and determined and permits as necessary will be in place prior to initiating excavations. Local utility companies will be contacted at least two days in advance, advised of proposed work, and requested to locate underground installations. When excavations approach the estimated location of utilities, the exact location will be determined by careful probing or hand digging and when it is uncovered, proper supports will be provided.

OVERHEAD OBSTACLES

A minimum safe distance of 20 feet will be maintained when working around overhead high-voltage lines or the line will be de-energized following appropriate lock-out and tag-out procedures by qualified utility personnel.

ENTRY/EXIT ROUTES

Excavations five feet or more deep will require an adequate means of exit, such as a ladder, ramp, or steps and located so as to require no more than 25 feet of lateral travel. Under no circumstances will

personnel be raised.

VEHICLE CONTROL/SAFETY

Personnel working around heavy equipment, or who may be exposed to public vehicular traffic will wear a traffic warning vest consisting of at least 400 square inches of red or orange material. At night, at least 400 square inches of florescent or other reflective material will be worn.

For excavation work on or adjacent to highways or streets, signs, signals, and barricades tat conform to the requirements of the current American National Standards Institute (ANSI) D6.1, Manual on Uniform Traffic Control Devices for Streets and Highways will be used to protect work areas. Signs, signals, and barricades will be adequately lighted at night. Flagmen will be provided when signs, signals and barricades do not provide adequate protection. Flagmen will use signals and procedures contained in the current issue of ANSI D6.1. At night, flagmen will be clearly illuminated so as to be easily seen by approaching traffic.

For mobile equipment operating next to or approaching the edge of an excavation, the operator will have a clear view of the edge of the excavation, or a warning system such as barricades, hand or mechanical signals, or stop logs will be used. If possible the surface grade will slope away from the excavation.

Personnel will be safely located in and around the trench and will not be permitted to work underneath loads handled by lifting or digging equipment. Personnel are required to stand away from vehicles being loaded and unloaded. Operators can remain in the cabs of vehicles being loaded or unloaded provided the vehicles are equipped to provide adequate protection to the operator.

HAZARDOUS ATMOSPHERES

Hazardous atmospheres, such as oxygen deficiency (atmospheres containing less than 19.5% oxygen), flammable gases or vapors (airborne concentrations greater than 20% of the lower explosive limit), and toxic gases or vapors (airborne concentrations above the OSHA Permissible Exposure Limit or other exposure limits) may occur in excavations, especially around landfills and hazardous waste sites.

In locations where oxygen deficiency or hazardous gaseous conditions are possible, the air in the excavation will be tested before personnel are permitted to enter an excavation deeper than 4 feet. When flammable gases are present, adequate ventilation will be provided and sources of ignition will be eliminated. Ventilation or respiratory protection will be provided to prevent personnel exposures to oxygen deficient or toxic atmospheres. Periodic retesting (at least each shift) of the excavation will be conducted to verify that the atmosphere is acceptable. A log or field book records will be maintained of all test results.

WATER ACCUMULATION HAZARDS

Personnel will not work in excavations that have accumulated water or where water is accumulating unless adequate precautions have been taken. These precautions can include special support or shield systems, water removal systems such as pumps, or safety harnesses and lifelines. Water removal systems will be operated and monitored by experienced personnel. Diversion ditches or dikes will be used to prevent surface water from entering the excavation and to provide adequate drainage of the area around the excavation. Adequate precautions, as described above, will be taken for excavating

subject to heavy rains.

STABILITY OF ADJACENT STRUCTURES

Support systems such as shoring, bracing, or underpinning will be provided to maintain the stability of adjoining buildings, walls, or other structures endangered by the excavation operations. Excavations below a foundation or retaining wall that could be reasonably expected to pose a hazard to personnel will not be permitted unless:

- **a support system is provided**
- **The excavation is in stable rock; or**
- **A Registered Professional Engineer has determined that the structure will not be effected by the excavation activity or that the excavation work will pose a hazard to employees. The Professional Engineer is required to demonstrate how the above determination was made on the basis of appropriate calculations.**

Sidewalks will not be undermined unless shored to protect from possible collapse.

PROTECTION FROM LOOSE ROCK, MATERIALS OR SPOILS

In excavations and trenches that personnel may be required to enter, loose rock, excavated or other material, and spoils will be effectively stored and retained at least two feet or more from the edge of the excavation.

As an alternative to the clearance prescribed above, barriers or other effective retaining devices may be used in order to prevent spoils or other materials from falling into the excavation.

Walkways, runways, and sidewalks will be kept clear of excavated material from other obstructions.

Scaling operations may be used to remove loose material and will be performed only by experienced crews under the direct supervision of a competent supervisor. The scalers will be provided with scaler=s lifelines, safety belts, boatswain chair, and other safety equipment necessary for their protection.

FALL PROTECTION

Walkways or bridges with standard guardrails that meet OSHA specifications will be provided where employees, the public, or equipment are required to cross over excavations.

Adequate barrier physical protection will be provided at all remotely located excavations. All excavations will be barricaded or covered.

EMERGENCY RESCUE

In the event of a cave-in, the Emergency Rescue Squad will be immediately notified. The caller should provide his name, location, nature of the accident (an excavation collapse), the dimensions of the excavation, and number of people trapped in the excavation. Personnel are not to enter a collapsed trench to attempt rescue. This may cause a further collapse of the trench. Under no circumstance is heavy equipment to be used to attempt rescue of personnel in a collapsed excavation; injury or decapitation could be the result. All heavy equipment and traffic in the area is to be shut down and

stopped to reduce vibration. Pumps should be started if water ensues.

INSPECTION PROGRAM

Safety personnel will conduct daily inspections of the excavation, the adjacent areas, and protective systems. Inspections will be conducted prior to the start of work and as needed throughout the work shift. Inspections will also be made after every rainstorm or other occurrence that increases the hazard of collapse (i.e., vibration from heavy equipment, freezing and thawing, etc.).

The excavation inspection will include a check for the following:

- **Evidence if situations that could result in possible cave-in (i.e. soil crumbling or sloughing, water saturated soils, freezing and thawing, unusual vibrations such as from heavy equipment, heavy rains, surface run off entering trench, etc.);**
- **Indications of failure of protective systems;**
- **Hazardous atmosphere (oxygen deficiency, flammable and toxic gases and vapors);**
- **Condition and support of exposed underground installations;**
- **Adequate means of egress;**
- **Signs, signals, and barricades for work area protection;**
- **Precautionary measures to control water accumulation;**
- **Stability and support of adjacent structures; and**
- **Adequate protection from loose rock and soil.**

PROTECTIVE SYSTEMS

Personnel working in excavations will be protected from cave-ins by sloping and/or benching of excavation walls, a shoring system or some other equivalent means except when:

- **The excavation is made entirely in stable rock; or**
- **Excavations are less than five feet deep and safety personnel have determined that there is no indication of potential cave-in. Depending on site and soil conditions protective measures may be taken for the excavations less than five feet in depth.**

The most important factor influencing the choice of protective systems is the soil type classification. Once the soil type has been classified, selection of the protective system, the determination of the angle of repose for sloping and benching, and the design of shoring systems will be made. Decisions will be based on careful evaluation of pertinent factors such as depth of cut; possible variation in water content of the material while the excavation is open; anticipated changes in materials from exposure to air, sun, water, or freezing; loading imposed structures equipment, overlying material, or stored material; and vibration from equipment, blasting traffic or other sources.

Soil Classification

Appendix A of the OSHA Excavation Standard describes a methjod to classify soils into four types:

1. Stable Rock - Solid mineral matter that can be excavated with vertical sides.

2. Type A - cohesive soils with an unconfined compressive strength of 1.5 ton per square foot (tsf) or greater. Examples include: clay; silty clay; sandy clay; clayey loam; and cemented soils such as caliche and hardpan. No soil is considered to be Type A if it is fissured, subject to vibration, previously disturbed, or part of a sloped, layered system.

3. Type B - cohesive soils with an unconfined compressive strength of greater than 0.5 tsf but less than 1.5 tsf. Examples include: angular gravel similar to crushed rock; silt; silty loam; and sandy loam; Type B soils also include : previously disturbed soils that are not type C; Type A soils that are fissured or subject to vibration; and dry rock that is not stable.

4. Type C - cohesive soils with an unconfined compressive strength of 0.5 tsf or less. Examples include: gravel; sand; loamy sand; submerged soil or soil from which water is seeping; submerged rock that is not stable.

The engineer, geologist, or safety personnel will conduct at least one visual and at least one manual test as described in the OSHA excavation standard in order to classify soils. Visual tests include looking for : particle size and soil cohesiveness (clumping); cracking in the excavation sides which suggests fissured material; underground installations ans previously disturbed soils; layered soil systems that slope toward the excavation; evidence of surface water and water seeping from the sides of the excavation; and sources of vibration that may affect the excavation stability. Manual tests include: plascticity; dry strength; tumb penetration; drying test; and strength tests using a pocket penetrometer or hand-operated shearvane.

<u>Sloping and Benching</u>

One of the following options for sloping and benching systems described in section 1926.652(b) of the OSHA Excavation Standard will be used in excavations of .5 foot or deeper or at the discretion of the safety personnel:

- **The walls of excavation will be sloped at an angle not steeper than 0ne-and one-half horizontal to one vertical. Sloping configurations will follow the slopes shown for Type C soils in Appendix B of the OSHA Excavation Standard.**

- **Maximum allowable slopes and sloping and benching configurations will be determined according to soil type as described in Appendices A and B of the OSHA Excavation Standard.**

- **Use of other written tabulated data and designs, such as tables and charts, to design sloping and benching systems. A copy of the tabulated data must be approved by a registered Professional Engineer. A copy of the tabulated data must be kept at the job site.**

Personnel are not allowed to work on the faces of sloped or benched excavations above other workers unless the workers at the lower levels are protected from falling material or equipment. Similar protection will be provided for personnel working in excavations below other workers.

<u>Support Systems, Shield Systems, and Other Protective Devices</u>

One of the following options described in OSHA (1926.652 (c)) will be followed.

- **Timber shoring, designed according to the conditions and requirements of Appendix C of the OSHA Excavation Standard or aluminum hydraulic shoring designed according to manufacturers tabulated data or Appendix D of the OSHA Excavation Standard. In order to use the information in Appendices C or D, the soil type must first be determined using the classification system in Appendix A. For each soil type the size and spacing of the cross braces, uprights, and walls that comprise the shoring system are then selected based on the depth and width of the trench.**

- **Use of the manufacturer=s written tabulated to design support systems, shielded systems, and other protective devices. Any deviation from this tabulated data must be approved by the manufacturer. A copy of the tabulated data as well as any approvals to deviate from the tabulated data must be kept at the job site.**

- **Use of other written tabulated data to design support systems, shield systems, and other protective devices. The tabulated data must be approved by a Registered Professional Engineer. A copy of the tabulated data must be kept at the job site.**

- **Use of a written support system, shield system, and other protective device design that has been approved by a Registered Professional Engineer. A copy of the written design must be kept at the job site.**

<u>Installation and Removal of Support</u>

Cross braces or trench jacks, uprights, and walls will be secured together to prevent sliding, falling or kickouts.

Additional precautions by way of shoring and bracing will be taken to prevent slides or cave-ins when excavations or trenches are made in locations adjacent to backfilled excavations, or where excavations are subjected to vibrations from railroad or highway traffic, the operation of machinery, or any other source.

If it is necessary to place or operate power shovels, derricks, trucks, materials, or other heavy objects on a level above or near any excavation, the side of the excavation will be sheetpiled, shored, and braced as necessary to resist the extra pressure due to such superimposed loads.

Backfilling and removal of trench supports will progress together from the bottom of the trench. Jacks or braces will be released slowly and , in unstable soil, ropes will be used to pull out the jacks or braces from above after employees have cleared the trench.

<u>Shield Systems</u>

Portable trench boxes or sliding trench shields may be used for protection of personnel in lieu of a shoring system or sloping. Where such trench boxes or shields are used, they will be designed, constructed and maintained in a manner which will provide protection equal to or greater than the sheeting or shoring required for the trench. Shields will be installed so as to restrict lateral or other hazardous movement. Personnel are not allowed inside shields when shields are being moved.

EXCAVATION SAFETY LIST

To be completed prior to each work shift, or prior to personnel entering a new trench for the first time, by the Site Safety Officer/Competent Person:

Project_____Location_____

Job Number_____

Competent Person(CP)*_____Date_____

		Yes	No	N/A
1.	**Has the site been cleared for utilities and other underground obstructions?**	____	____	____
2.	**If on public property, has the regional utility locating service been notified?**	____	____	____
3.	**Has the excavation equipment been safety checked by the operator?**	____	____	____
4.	**Are copies of relevant OSHA excavation regulations available on site?**	____	____	____
5.	**Will the excavation be 5 feet or more in depth?**	____	____	____
6.	**If 4 is yes, will personnel enter the excavation at any time?**	____	____	____
7.	**If 4a is yes, have provisions been made for shoring, sloping, or benching the excavation? Describe:** _____ _____ _____	____	____	____
8.	**Has an inspection of the site and excavation been conducted by the SSO?**	____	____	____
9.	**Has the Competent Person conducted visual and manual tests to classify the soil?**	____	____	____

*** According to Federal OSHA, A Competent Person is a person who is capable of identifying existing and predictable hazards in the surroundings; or working conditions which are unsanitary, hazardous, or dangerous to employees; and who has the authority to take prompt corrective measures to eliminate them.**

10.	**G**	**Visual Test _____(type)**			
	G	**Manual Test_____(type)**			
	G	**Soil Classification_____(type)**			
11.		**Are there any conditions that might expose employees to injury from possible moving ground?**	____	_____	____
12.		**Is excavated material being placed at least 2 feet from the edge of the excavation?**	____	____	____
13.		**Is work in the excavation at all times under the immediate supervision of the SSO or other competent person?**	____	____	____
14.		**Is there a stairway, ladder, or ramp securely fastened in place to provide ingress and egress from the excavation?**	____	____	____
15.		**If the excavation is 4 feet or more in depth, are safe means of access (see 8) provided so as to require no more than 25 feet of lateral travel to reach them?**	____	____	____
16.		**If structural ramps are installed that are used for access/egress: were they designed by a qualified engineer?**	____	____	____
17.		**Do the structural ramps have appropriate means to prevent slipping and are the ramps uniform in thickness?**	____	____	____
18.		**Are walkways or bridges provided across the excavation to safe crossing?**	____	____	____
19.		**If excavations are 71/2 or more feet in depth, do the walkways have guardrails and toeboards?**	____	____	____
20.		**Are undermined structures adequately supported to safely carry all anticipated loads and protect workers?**	____	____	____
21.		**Are there adequate means provided to prevent mobile equipment from inadvertently entering the excavation?**	____	____	____
22.		**Is the excavation well marked and barricaded to prevent personnel from falling IN?**	____	____	____
23.		**Are means available to prevent surface water from entering the excavation and to provide**	____	____	____

	adequate drainage of the area adjacent to the trench?			
24.	**Where it is reasonable to expect hazardous atmospheres, including oxygen deficiency, to exist in the excavation, is appropriate atmosphere testing equipment available.**	____	____	____
25.	**Has the testing equipment been calibrated, and the calibrations recorded, today?**	____	____	____
26.	**Are employees trained in proper use of this equipment?**	____	____	____
27.	**Has a harness and lifeline been provided whenever an employee is required to enter a confined footing excavation?**	____	____	____
28.	**Is appropriate personal protective equipment (hardhat, safety boots, eye protection, etc.) available and in use?**	____	____	____

Notes:_____

_____

_____

_____

_____ _____

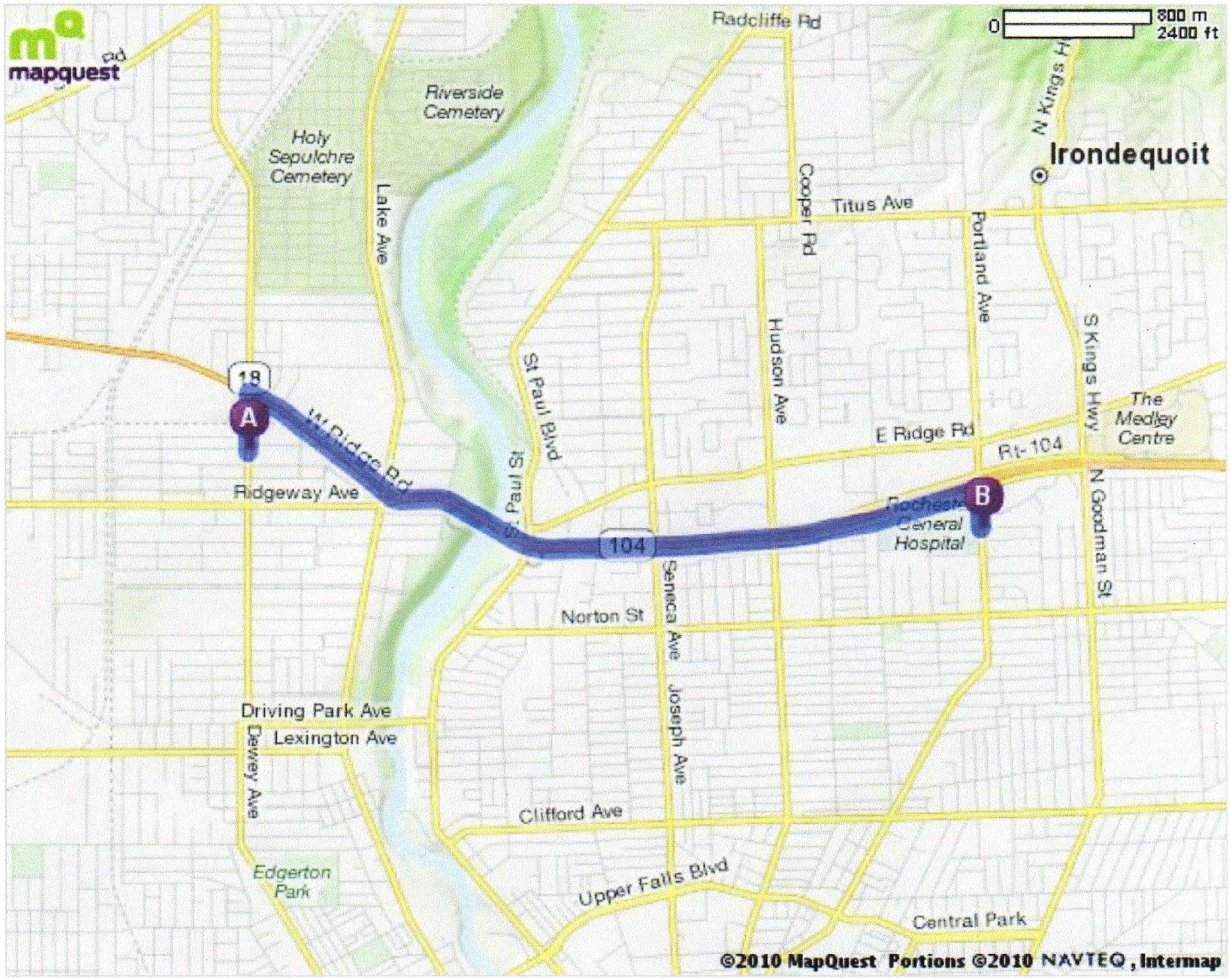
CPs Name (Print) **Signature**

ATTA CHMENT 3

Map to Hospital

Total Travel Estimate : 3.37 miles - about 6 minutes

Route Map Hide



ATTACHMENT 4

NYSDEC DER-10
Appendix 1A & Appendix 1B

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50° C (14 to 122° F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

ATTACHMENT 5

Table of Potential Hazards & OSHA Standards

Potential Hazards and OSHA Standards for Consideration during IRMs

Site Exposure/Control	Potentially Applicable OSHA Standard*	
	1910 General Industry	1926 Construction
Hazard Assessmen & Employee Training	29 CFR 1910.132(d)	29 CFR 1926.21(b)
Chemical Exposure	29 CFR 1910.1000	29 CFR 1926.55
Noise Exposure	29 CFR 1910.95	29 CFR 1926.52
Sanitation	29 CFR 1910.141	29 CFR 1926.51
Wiring Methods (temporary wiring)	29 CFR 1910.305(a)(2) 29 CFR 1910.333	29 CFR 1926.405(a)(2)
Electrical Hazards		29 CFR 1926.416
Emergency Action Planning	29 CFR 1910.38	29 CFR 1926.35
Excavation	covered by 1926	29 CFR 1926 Subpart P
Confined Space Entry	29 CFR 1910.146	29 CFR 1926.21(b)(6)29 CFR 1926.353(b)
Material Handling	29 CFR Subpart N	29 CFR Subpart N29 CFR 1926.600-60229 CFR 1926.604
Building Demolition	covered by 1926	29 CFR 1926 Subpart T
Site ContaminantAbatement	29 CFR 1910.1000-1029 29 CFR 1910.1043-1052	29 CFR 1926.5529 CFR 1926.6229 CFR 1926.1101-1152
Elevated Work Surfaces	29 CFR 1910 Subpart D 29 CFR 1910 Subpart F	29 CFR 1926 Subpart L29 CFR 1926 Subpart M29 CFR 1926.552
Chemical Storage	29 CFR 1910 Subpart H29 CFR 1910.1200	29 CFR 1926.5929 CFR 1926 Subpart F
Personal Protective Equipment	29 CFR 1910 Subpart I	29 CFR 1926 Subpart E
Heavy Equipment Operation	29 CFR 1910.9529 CFR 1910 Subpart N	29 CFR 1926.5229 CFR 1926 Subpart O
Tasks-Long Duration	29 CFR 1910.141-142	29 CFR 1926.51

The Federal General Industry and Construction citations are provided above

APPENDIX B

CITIZEN PARTICIPATION PLAN

New York State Department of Environmental Conservation

Brownfield Cleanup Program

Citizen Participation Plan
For
Former Crescent Puritan Laundry

SITE # C828163

1630 DEWEY AVENUE, 149 AND 161 PALM STREET

CITY OF ROCHESTER

MONROE COUNTY, NEW YORK

SEPTEMBER 2010

Contents

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Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site s investigation and cleanup process.

Applicant: **1630 Dewey Avenue, LLC ("Applicant")**
Site Name: **Former Crescent Purity Laundry ("site")**
Site Address: **1630 Dewey Avenue, 149 and 161 Palm Street**
Site County: **Monroe County**
Site Number: **C828163**

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants that conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at:
http://www.dec.ny.gov/chemical/8450.html.

2. Citizen Participation Activities *Why NYSDEC?*

Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision makers form or adopt final positions.

Involving citizens affected and interest in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment

- Improving public access to, and understanding of, issues and information related to a particular site and that site's investigation and cleanup process
- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process
- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community
- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to which the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.
The site contact list includes, at a minimum:

- chief executive officer and planning board chairperson of each county, city, town and village in

which the site is located;

- residents, owners, and occupants of the site and properties adjacent to the site;
- the public water supplier which services the area in which the site is located;
- any person who has requested to be placed on the site contact list;
- the administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- Location (s) of reports and information.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

CF Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site s investigation and cleanup program. The flowchart in Appendix D shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.

- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site s investigation and cleanup. The site developer has established a website (www.eastmancommons.org/resources/links.php) that describes the planned development activities at the site.

The public is encouraged to contact project staff at any time during the site s investigation and cleanup process with questions, comments, or requests for information.

This CP Plan maybe revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

For more information about TAGs, go online at http://www.dec.ny.gov/regulations/2590.html

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page:

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Citizen Participation Requirements (Activities)	Timing of CP Activity(ies)
Application • Prepare site contact list • Establish document repositories • Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	**Process:** At time of preparation of application to participate in the BCP. When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement: • Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation
Before NYSDEC Approves Remedial • Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	**Investigation (RI) Work Plan:** Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes • Distribute fact sheet to site contact list that describes RI results	**Remedial Investigation:** Before NYSDEC approves RI Report
Before NYSDEC Approves • Distribute fact sheet to site contact list about proposed RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	**Remedial Work Plan (RWP):** Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts • Distribute fact sheet to site contact list that	**Cleanup Action:** Before the start of cleanup action.
After Applicant Completes • Distribute fact sheet to site contact list that announces that cleanup action has been completed and that summarizes the Final Engineering Report • Distribute fact sheet to site contact list announcing issuance of Certificate of Completion (COC)	**Cleanup Action:** At the time NYSDEC approves Final Engineering Report. These two fact sheets are combined if possible if there is not a delay in issuing the COC.

3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern as they relate to the site Additional major issues of public concern may be identified during the site's remedial process.

At this juncture the public has not identified major concerns with the project. In the event major concerns are expressed, future communication addressing those concerns will be issued to stakeholders.

4. Site Information

Site Description

The site contains three adjacent parcels located in the City of Rochester at the southeast corner of Dewey Avenue and Palm Street, encompassing approximately 1.34 acres (refer to Figure 1). The area is historically mixed residential/commercial. The 1630 Dewey Avenue property contains a vacant approximate 52,000 square foot 2 -story brick building (Former Crescent Purity Laundry). The 149 and 161 Palm Street properties currently form an asphalt covered parking area behind the former laundry facility.

Contemplated Use of the Site

The proposed new development will provide for demolition/removal of the existing building and construction of a three story 80- unit affordable residential housing complex. The new 25,000 square foot Dewey Avenue complex will be sustainably designed to provide mixed use functionality and make available permanent rental units where residents will execute standard lease agreements. The first floor space on Dewey Avenue will include office space and meeting rooms to preserve the street's commercial character and address market needs. The residential units will be located behind the office space creating a "U" shaped building with a courtyard entrance from Palm Street. The Dewey Avenue project, called Eastman Commons, will include an on-site professional property manager with 24/7 attended reception and a security system for the entire complex.

History of Site Use

This existing vacant facility operated as a commercial laundry (Crescent Puritan Laundry) since the late 1920's to the mid 1970's or early 1980's. After the laundry closed, the property was occupied by a number of tenants for various functions including plastic fabrication, printing, tool machining, bathroom and kitchen cabinet sales, and other commercial/retail uses through the early 1980's and 1990's. Some of the tenants included DJ Printing, Monroe Micro film, Samson's Gym (second floor) and Vella Bath & Kitchen. The 149 and 161 Palm Street properties currently form an asphalt covered parking area behind the former laundry facility. These properties most likely supported the laundry facility operation and contained a vehicle garage and petroleum storage operation.

The adjacent property to the east is an automobile service and repair operation which has operated in this capacity since the 1950's. Further east and north is residential and beyond that is Kodak Park, a division of Eastman Kodak. North of the parcels along Palm Street is residential. The adjacent properties north along Dewey Avenue at Palm are commercial/retail including a Sunoco gasoline station. West of the site across Dewey Avenue are an industrial facility (Steko) and other commercial/retail establishments, including a motor cycle shop, auto service center, and a carpet center. The Steko property has a long history as the Clark Steko Corporation which was a large commercial building that may have been associated with paper manufacturing and supply as early as the 1920's. South of the site, across an alleyway (Industrial Alley – former railroad line) is mixed residential and retail/commercial including an insulation, roofing and gutter repair store and Advent Automotive.

Given the age of construction, asbestos containing building materials are present in the building. Also, universal wastes may be present on site including drums/containers, electrical/process equipment, fluorescent light fixtures, etc.

Relative to historical operations, the use of chemicals such as dry cleaning solvents and petroleum products (heating oil) would have been common. Records and field investigations indicate solvents and petroleum products were stored at the site in underground storage tanks which may have leaked over time. Soils and groundwater have been impacted due to this leakage.

Environmental History

A series of investigations and site assessments have been completed at the property including:

- Phase I and Phase II Environmental Site Assessment completed by Galson Corporation for the City of Rochester Department of Environmental Services in 1999.
- Addendum to The Phase I Environmental Site Assessment: Final Report FOIA Response from NYSDEC completed by Galson in April 1999.
- Modified Phase I Environmental Site Assessment for 149 and 161 Palm Street, Rochester, New York. Completed by Day Environmental, Inc. for the City of Rochester, April 19, 2000.
- Phase I/II Environmental Site Assessment for 1630 Dewey Avenue and 149/16 1 Palm Street. Completed by PEI for Norstar Development USA, L.P. in September 2006.
- Supplemental Site Characterization 1630 Dewey Avenue Rochester, New York. Completed by ATC Associates for Norstar in July 2010.

Based these investigations, petroleum-like contamination was found in site soils in certain areas of the property and dry cleaning solvents were found in groundwater along the northern border of the property. Four separate petroleum source areas (see Figure 2-Investigation/Remediation Plan Appendix C) were identified as follows:

- Area A - the area along and adjacent to the south-southeast side of the Dewey Avenue structure which is the location of an estimated 15,000-20,000-gallon fuel oil underground storage tank. Assessment results in this area suggest limited soil impacts.
- Area B - the area along and adjacent to the northeast side of the Dewey Avenue structure which is the location of an estimated 500-1,000-gallon gasoline underground storage tank. Assessment results in this area indicate impacted soil towards Palm Street.
- Area C – the area of the former underground storage tank identified in a previous investigation. This area appears to have limited soil impacts isolated to the general area
- Area D – the grass covered area east of the boiler room in the Dewey Avenue Structure. This area indicated limited petroleum-like soils impacts to that area

No source area for low levels of dry cleaning solvents found in groundwater has been identified and may have been associated with releases years ago.

To address the four identified source areas of apparent petroleum release and the low levels of dry cleaning solvents in wells, interim remedial measures (IRM's) are being proposed. These measures include the excavation, removal and disposal of the two underground storage tanks in addition to the impacted soils from the four "source" areas. Residual groundwater contamination can then be treated with accelerated bioremediation by the addition of a hydrogen release type mixture to the soil/water interface in the northern excavations prior to clean fill replacement. This will reduce any residual levels of petroleum/solvents in the down gradient wells which can be monitored. In addition, the existing structure will be demolished. A new mixed use office/residential complex will be constructed at the property. This new structure will include vapor barrier and passive vapor intrusion system which can be activated to an active system, if necessary.

Asbestos Containing Materials

The following pre-demolition asbestos surveys have been conducted at the existing vacant Crescent Puritan building:

- Asbestos Survey complete by Galson Corporation for the City of Rochester, Department of Environmental Services, dated February 1999.
- Limited Asbestos Containing Materials Survey completed by Bergmann Associates for Norstar Development USA, L.P., dated December 1999.

The Bergmann survey was limited to an assessment of building materials that that may not have been included in the earlier Galson survey. Both surveys indicated the presence of asbestos containing materials throughout the building.

Any universal wastes within the building will be identified and inventoried by the demolition contractor and the owner's representative prior to demolition. Items may include drums/containers, electrical/process equipment, fluorescent light fixtures, etc. Samples of unidentified wastes will be collected for analysis to determine proper disposal.

5. Remedial Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a qualitative exposure assessment, a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for restricted purposes.

To achieve this goal, the Applicant will conduct investigation and/or cleanup activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

Investigation

The Applicant has completed a full site investigation before it entered into the BCP. The Applicant has submitted an investigation report for the full site investigation. NYSDEC will determine if the investigation goals and requirements of the BCP have been met or if additional work is needed before a remedy can be selected.

NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a significant threat, it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Remedy Selection

The Applicant has recommended in its investigation reports and application that action needs to be taken to address site contamination. Pending approval of the investigation report by the NYSDEC, the Applicant has proposed a "Work Plan for Interim Remedial Measures (IRM) for Site Remediation" of the Former Crescent Purity Laundry Site. The Work Plan describes the Applicant's anticipated proposed remedy for addressing contamination related to the site.

When the Applicant submits the proposed Remedial (IRM) Work Plan for approval, NYSDEC will announce the availability of the proposed plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments, and revise the draft Remedial (IRM) Work Plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH will oversee the activities. When the Applicant completes cleanup activities, it will prepare a final engineering report that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the final engineering report. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

Site Management

Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management may be conducted by the Applicant under NYSDEC oversight, if contamination will remain in place. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An institutional control is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An engineering control is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy,

such as a system that is pumping and treating groundwater. Site management continues until NYSDEC determines that it is no longer needed.

Appendix A
Project Contacts and Locations of Reports and Information

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Frank Sowers, P. E.
Environmental Engineer 2
Division of Environmental Remediation New York State Department of Environmental Conservation
Region 8
6274 East Avon - Lima Road
Avon, NY 14414
(585) 226-5328

Linda Vera
Citizen Participation Specialist
Division of Public Affairs
New York State Department of Environmental Conservation
Region 8
6274 East Avon - Lima Road
Avon, NY 14414
(585)-226-5326

New York State Department of Health (NYSDOH):

Justin Deming
NYSDOH Bureau of Environmental Exposure Investigation
Flanigan Square, Room 300
547 River Street
Troy, NY 12180-2216
(518) 402-7860
1-800-458-1158 x27860

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

Maplewood Public Library
1111 Dewey Avenue, Rochester, NY
(585) 428-8220
Hours:
Monday-Thursday 1 1:30AM-7:00PM
Friday 11:30AM-5:30PM
Saturday 1 0:00AM-2:00PM

NYSDEC Region 8
Division of Environmental Remediation
6274 East Avon - Lima Road
Avon, NY 14414
(585) 226-5328 (call for appointment)
Hours: Monday-Friday 8:30 AM-4:30 PM

Appendix B .Site Contact List

1. The chief executive officer and planning board/dept. chair of each county, city, town and village in which the property is located.

Monroe County

County Executive – Ms. Maggie Brooks
Monroe County Executive
110 County Office Building
39 W. Main St.
Rochester, NY 14614
Phone: 585 753-1000
Fax: 585 753-1014

Department of Environmental Services
Department of Environmental Services Director – Mr. Michael J. Garland, P.E.
7100 City Place
50 W. Main St.
Rochester, NY 14614
Phone: 585-753-7600

Planning and Development Department
Department of Planning and Development Director – Ms. Judy A. Seil
8100 City Place
50 W. Main St.
Rochester, NY 14614
Phone: 585-753-2000
Fax: 585-753-2028

City of Rochester

Acting Mayor – R. Carlos Carballada
City Hall, Room 307A
30 Church St.
Rochester NY 14614
585 -428-7045

Department of Environmental Services
Department of Environmental Services Commissioner – Mr. Paul Holahan City Hall, Room 300B
30 Church St.
Rochester, NY 14614
585-428-6855

Commissioner's Office, Environmental Quality
Brownfield Remediation and Redevelopment
Port of Rochester Redevelopment – Mr. Mark Gregor 585-428-6855

Neighborhood and Business Development Commissioner – No Listing
City Hall, Room 223B
30 Church St.
Rochester, NY 14614
585-428-8801

Planning and Zoning Director – Mr. Arthur Ientelucci 585-428-7091

2. Residents, owners, and occupants of the property and properties adjacent to the property.
Provided separately to NYSDEC for confidentiality

3. Local news media from which the community typically obtains information.

1) News Paper
Rochester Democrat and Chronicle 55
Exchange Boulevard
Rochester, NY 14614
(585) 232-7100

Send electronically to:
Steve Orr at sorr@DemocratandChronicle.com

2) TV9 R News YNN
Rochester
71 Mt. Hope Ave
Rochester, NY 14620
585-756-2424

3) TV 8 News 201
Humboldt St.

Rochester, NY 14610
585-287-8000

4) TV 10News
191 East Ave.
Rochester, NY 14604
5 85-546-5670

5) TV 13 News
4225 West Henrietta
Rochester, NY 14623
585-321-8787

TV 21 WXXI News
280 State Street
Rochester, NY 14603
585-258-0200

Editor City News
250 North Goodman
Rochester, NY 14607

4. The public water supplier which services the area in which the property is located.

City of Rochester
Robert Morrison, Director
Bureau of Water
10 Felix Street

Rochester, NY 14608
585-428-7500
585 428-5990

Monroe County Water Authority
475 Norris Drive

Rochester, New York
14610- 0999
(585) 442-2000

5. The administrator of any school or day care facility located on or near the property.

School 41- Kodak Park
279 Ridge Road West, Rochester, NY - (585) 254-4472

John Marshall High School
180 Ridgeway Avenue, Rochester, NY - (585) 458-2110

6. Government Officials

Honorable Kirsten E. Gillibrand
United States Senate, Federal Building Room 4195
100 State Street
Rochester, NY 14614

Honorable Charles E. Schumer
United States Senate, Federal Building Room 3040
100 State Street
Rochester, NY 14614

Ms Louis M. Slaughter
United States House of Representatives, 28th District
3120 Federal Building
100 State Street
Rochester, NY 14614

Cheryl Dinolfo, Monroe County Clerk
110 County Office Building
39 West Main St.
Rochester, NY 14614

Jeff Adair, President
Monroe County Legislature, Rm 407
County Office Building
39 West Main St.
Rochester, NY 14614-1476

NYS Senator Jim Alesi
District Office
220 Packetts Landing
Fairport, NY 14450

Joseph Morelle
NYS Senate Assembly132nd Assembly District
1945 East Ridge Road
Rochester, NY 14622

Police Chief James Sheppard
City of Rochester Public Safety Building
185 Exchange St.
Rochester, NY 14614

Ms Muffy Meizenzahl
Monroe County Office of Emergency Preparedness
1190 Scottsville Road, Suite 200
Rochester, NY 14624

7. Agency Contacts

Louise Hartshorn
Monroe County EMC
11 1Westfall Road, PO Box 92832
Rochester, NY 14692

Bartholomew Putzig
NYSDEC
6274 East Avon-Lima Rd.
Avon, NY 14414

Capt. Mike Van Durme
NYSDEC
6274 East Avon-Lima Rd.
Avon, NY 14414-9519

Linda Vera
NYSDEC
6274 East Avon-Lima Rd.
Avon, NY 14414-9519

Larry Ennist
ldennist@gw.dec.state,ny.us

Jeff Kosmala
Monroe County Health Department
PO Box 92832
111 Westfall Road
Rochester, NY 14692-8932

JustinDeming
Jhd01@health.state.ny.us

8. Interested Parties

Center for Environmental Info.
55 St. Paul St.
Rochester, NY 14604-1314

Citizens' Environmental Coalition
Western New York Office
33 Central Avenue, 3rd Floor
Albany, NY 12210

Bob Holmes
Hydro Qual Inc.
1200 Scottsville Road
Building C, Suite 120
Rochester, NY 14624

Appendix C

Figure 1 – Project Areas Location

Figure 2– Investigation and Remediation Plan

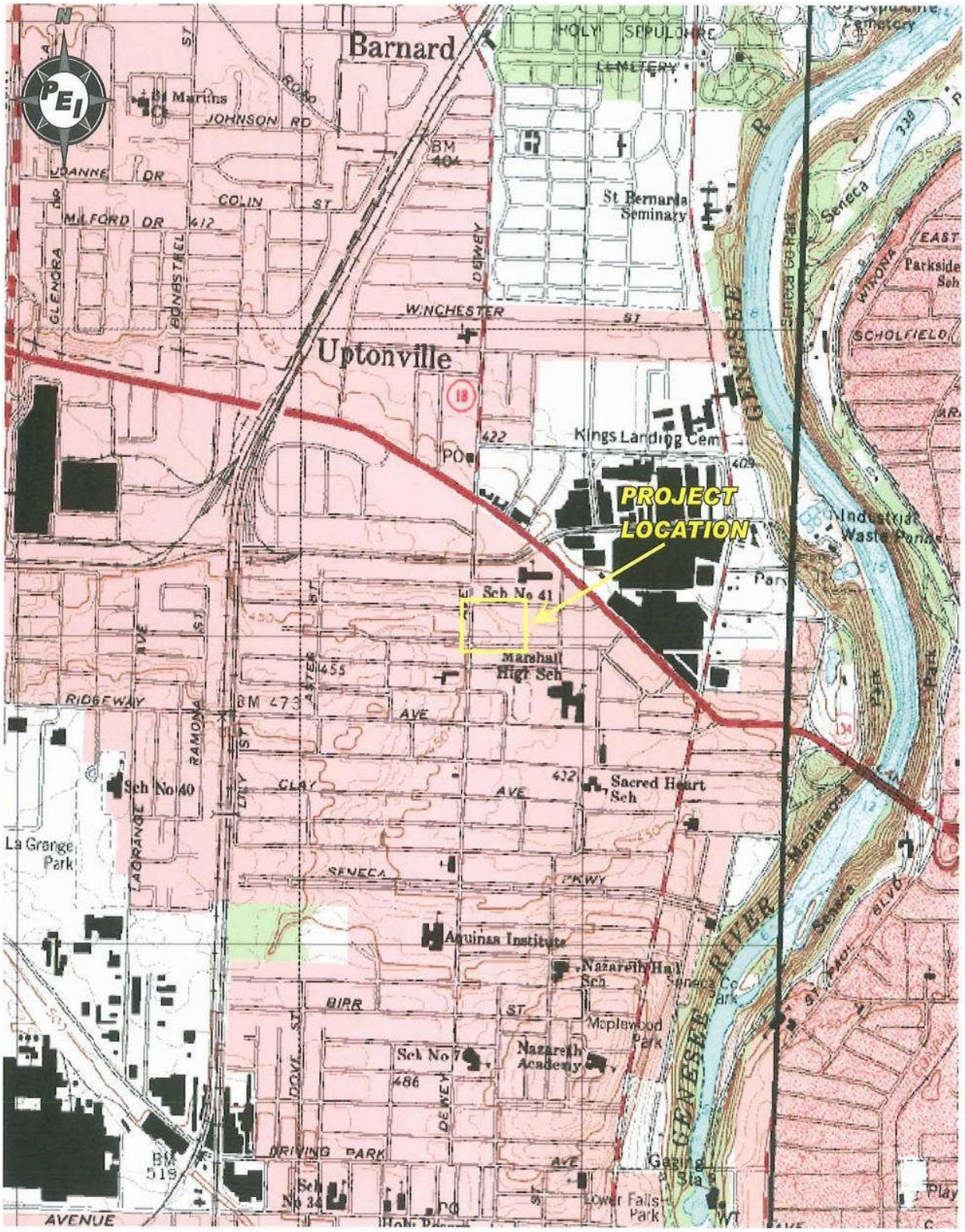
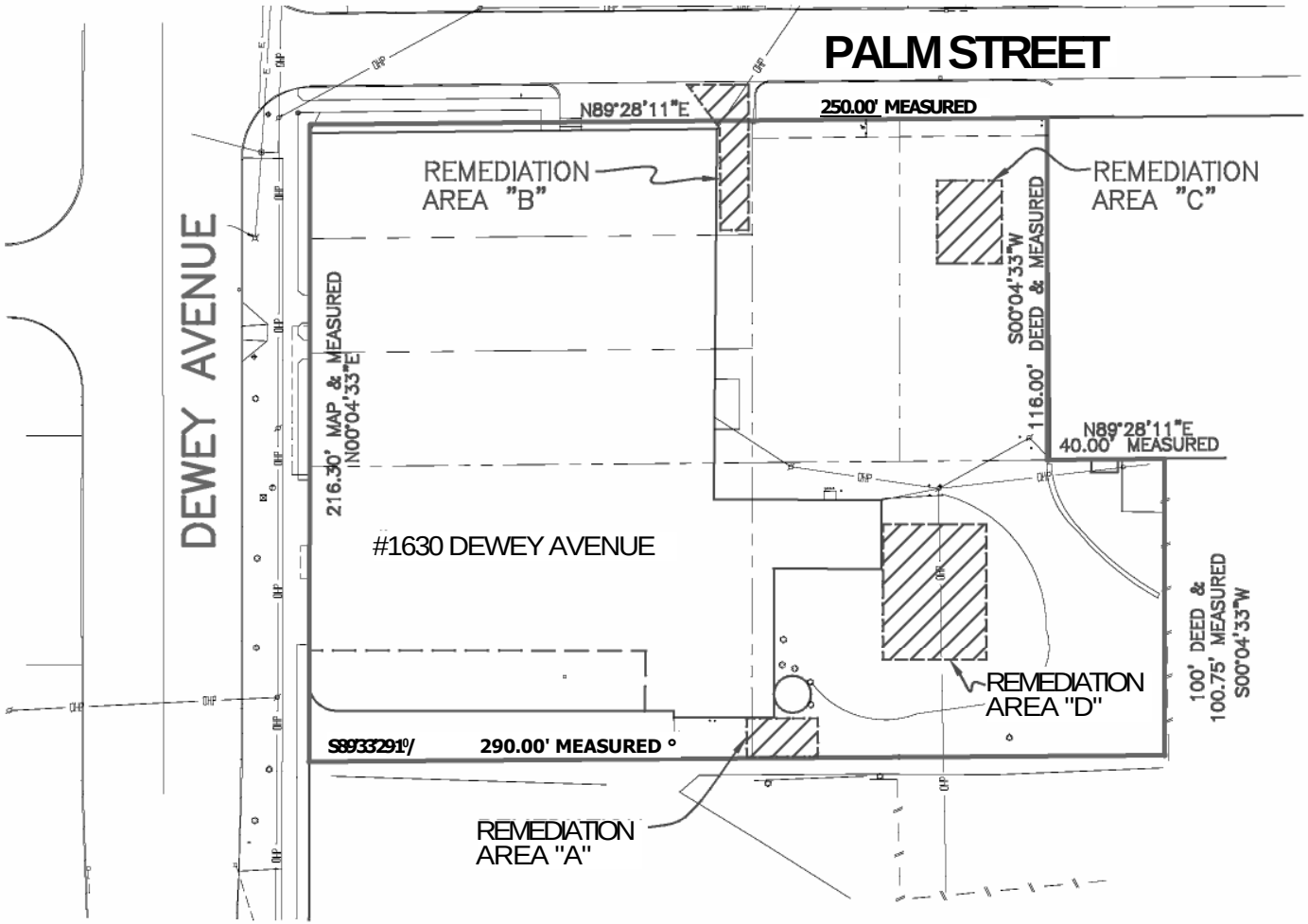


Figure 1. Project areas ocation in the City of Rochester, Monroe County, New York *(USGS 7.5' Quadrangle, Rochester West, NY).*



REVISED 9/7/2010: AMEND TITLE BLOCK

LEGEND

= REMEDIATION AREA

STATE OF NEW YORK
MICHELE A. CLARK
t. No. 050459
Licensed Land Surveyor

MICHELE A. CLARK
NEW YORK STATE PROFESSIONAL
LAND SURVEYOR
LICENSE NUMBER 50459

REMEDIATION AREAS

FORMER CRESCENT LAUNDRY FACILITY
#1630 DEWEY AVENUE
CITY OF ROCHESTER - COUNTY OF MONROE
SIAIE OF NEW YORK

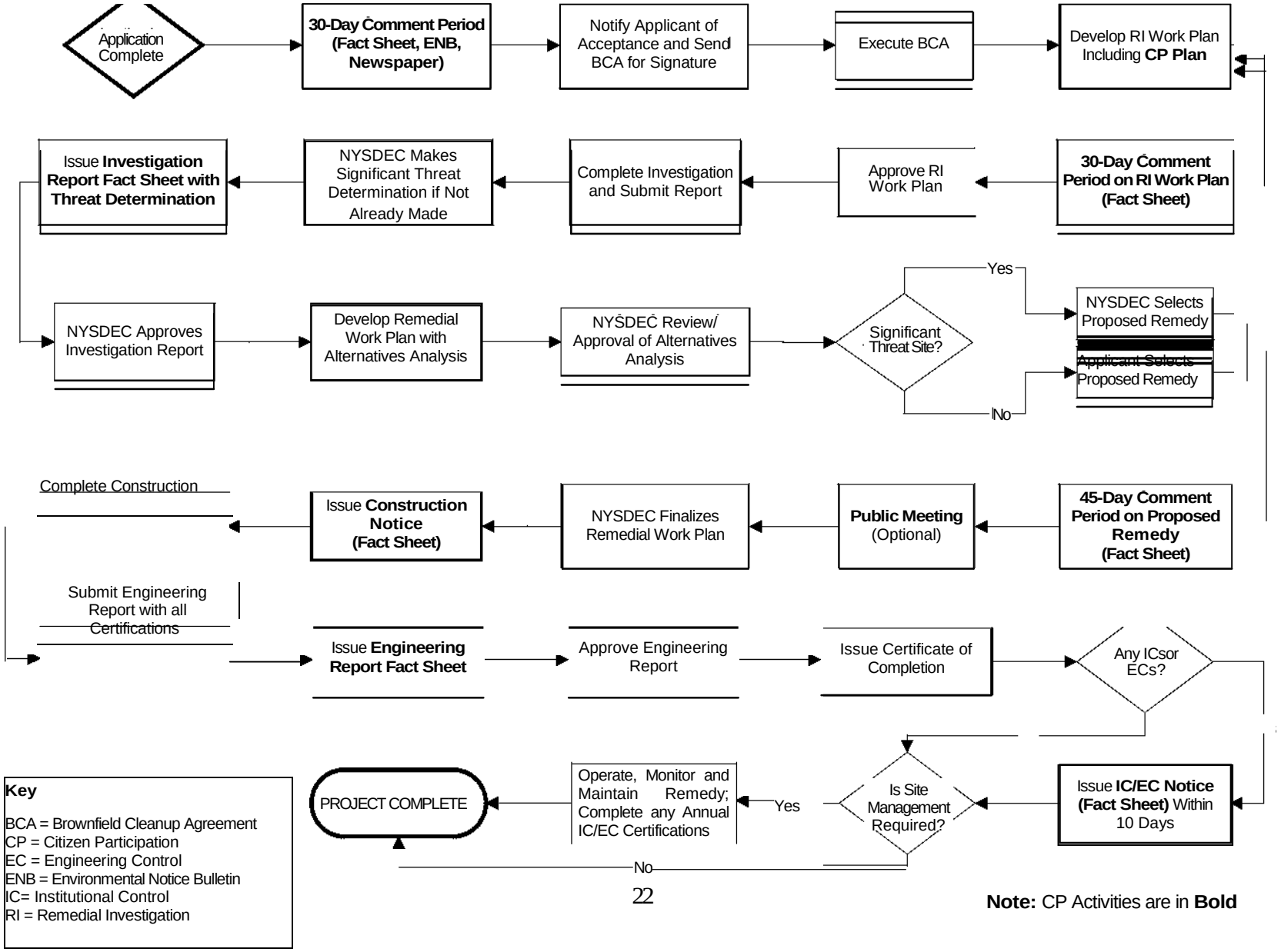
CREEKSIDE BOUNDARY

1746 HIGGINS ROAD
WARSAW, NEW YORK 14569
PHONE/FAX: 585 786 5640 EMAIL: mclark@creeksideboundary.com

SCALE: 1 " = 60 ' DATE: 9/7/2010

DWN BY: MAC

Appendix D– Brownfield Cleanup Program Process



Note: CP Activities are in **Bold**

APPENDIX C

QUALITY ASSURANCE/ QUALITY CONTROL PLAN

Page No.

QUALITY ASSURANCE/QUALITY CONTROL PLAN

1.0 INTRODUCTION

This Quality Assurance/Quality Control Plan is designed to provide an overview of QA/QC procedures. It will give specific methods and QA/QC procedures for chemical testing of environmental samples obtained from the site. In addition, it will ensure the quality of the data produced.

The organizational structure for this project is presented in the Work Plan. It identifies the names of key project personnel. The project manager will be responsible for verifying that QA procedures are followed in the field. This will provide for the valid collection of representative samples. The Project Manger will be in direct contact with the analytical laboratory to monitor laboratory activities so that holding times and other QA/QC requirements are met. The numbers of soil/water samples that may be collected and analytical parameters/methods are provided in Table-1 below.

The Project Field Inspector will be responsible for coordinating the activities of all personnel involved with implementing the project in the field, and will be in daily communication with the Project Manager. This person will verify that all field investigation sampling work is carried out in accordance with the approved project Field Sampling Plan (Appendix D).

In addition to overall project coordination, the Project Manager will be responsible for overseeing both the analytical and field QA/QC activities. The ultimate responsibility for maintaining quality throughout the project rests with the Project Manager.

TABLE-1
ANALYTICAL SUMMARY TABLE – WATER

REMEDIAL INVESTIGATION PROGRAM SAMPLING:

PARAMETER	EPA METHOD	WATER
TCL VOCs	8260B	8
TCL SVOCs	8270C	8
TICs VOC/SVOC		8
TAL Metals + Cyanide	6010/7470/7471	8
PCBs	8082	8
Pesticides	8082	8

Technical Holding Times: 8270C - 7 days till extraction, 40 days till analysis
8260B -14 days till analysis.

The analytical laboratory proposed for use for the analysis of samples will be a certified NYSDOH ELAP laboratory for the appropriate categories. The QA Manager of the laboratory will be responsible for performing project-specific audits and for overseeing the quality control data generated.

2.0 DATA QUALITY OBJECTIVES

2.1 Background

Data quality objectives (DQOs) are qualitative and quantitative statements, which specify the quality of data required supporting the investigation for the site. DQOs focus on the identification of the end use of the data to be collected. The project DQOs will be achieved utilizing the definitive data category, as outlined in *Guidance for the Data Quality Objectives Process*, EPA QA/G-4 (September 1994). All sample analyses will provide definitive data, which are generated using rigorous analytical methods, such as reference methods approved by the United States Environmental Protection Agency (USEPA). The purpose of this investigation is to determine the nature and extent of contamination at the site.

Within the context of the purpose stated above, the project DQOs for data collected during this investigation are:

- To assess the nature/extent of contamination in surface and subsurface soil, and groundwater.
- To maintain the highest possible scientific/professional standards for each procedure.
- To develop enough information to assess if the levels of contaminates identified in the media sampled exceed regulatory guidelines.

2.2 QA Objectives for Chemical Data Measurement

Sample analytical methodology for the media sampled and data deliverables will meet the requirements in NYSDEC Analytical Services Protocol, July 2005 edition. Laboratories will be instructed that completed **Sample Preparation and Analysis Summary forms** are to be submitted with the analytical data packages. The laboratory also will be instructed that matrix interferences must be cleaned up, to the extent practicable. Data usability summary reports (DUSRs) will be generated. In order to achieve the definitive data category described above, the data quality indicators of precision, accuracy, representativeness, comparability, and completeness will be measured during offsite chemical analysis.

2.2.1 Precision

Precision examines the distribution of the reported values about their mean. The distribution of reported values refers to how different the individual reported values are from the average reported value. Precision may be affected by the natural variation of the matrix or contamination within that matrix, as well as by errors made in field and/or laboratory handling procedures. Precision is evaluated using analyses of a laboratory matrix spike/matrix spike duplicate (for organics) and matrix duplicates (for inorganics), which not only exhibit sampling and analytical

precision, but indicate analytical precision through the reproducibility of the analytical results. Relative Percent Difference (RPD) is used to evaluate precision. RPD criteria must meet the method requirements identified in the attached table.

2.2.2 Accuracy

Accuracy measures the analytical bias in a measurement system. Sources of error are the sampling process, field contamination, preservation, handling, sample matrix, sample preparation, and analysis techniques. These data help to assess the potential concentration contribution from various outside sources. The laboratory objective for accuracy is to equal or exceeds the accuracy demonstrated for the applied analytical methods on samples of the same matrix. The percent recovery criterion is used to estimate accuracy based on recovery in the matrix spike/matrix spike duplicate and matrix spike blank samples. The spike and spike duplicate, which will give an indication of matrix effects that may be affecting target compounds is also a good gauge of method efficiency.

2.2.3 Representativeness

Representativeness expresses the degree to which the sample data accurately and precisely represent the characteristics of a population of samples, parameter variations at a sampling point, or environmental conditions. Representativeness is a qualitative parameter, which is most concerned with the proper design of the sampling program or sub-sampling of a given sample. Objectives for representativeness are defined for sampling and analysis tasks and are a function of the investigative objectives. The sampling procedures, as described in the Field Sampling Plan (Appendix D), have been selected with the goal of obtaining representative samples for the media of concern.

2.2.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. A DQO for this program is to produce data with the greatest possible degree of comparability. This goal is achieved through using standard techniques to collect and analyze representative samples and reporting analytical results in appropriate units. Complete field documentation will support the assessment of comparability. Comparability is limited by the other parameters (e.g., precision, accuracy, representative-ness, completeness, comparability), because only when precision and accuracy are known can data sets be compared with confidence. In order for data sets may be comparable, it is imperative that contract-required methods and procedures be explicitly followed.

2.2.5 Completeness

Completeness is defined as a measure of the amount of valid data obtainable from a measurement system compared to the amount that was expected to be obtained under normal conditions. It is important that appropriate QA procedures be maintained to verify that valid data are obtained in order to meet project needs. For the data generated, a goal of 90% is required for completeness (or usability) of the analytical data. If this goal is not met, then NYSDEC and PEI project personnel will determine whether the deviations might cause the data to be rejected.

3.0 SAMPLING LOCATIONS, CUSTODY, HOLDING TIMES, & ANALYSIS

Sampling locations and procedures are discussed in Work Plan. Procedures addressing field and laboratory sample chain-of-custody and holding times are presented in the Appendix D - Field Sampling Plan. All holding times begin with validated time of sample receipt (VTSR) at the laboratory. The laboratory must meet the method required detection limits which are referenced within the methods.

4.0 CALIBRATION PROCEDURES AND FREQUENCY

In order to obtain a high level of precision and accuracy during sample processing procedures, laboratory instruments must be calibrated properly. Several analytical support areas must be considered so the integrity of standards and reagents is upheld prior to instrument calibration. The following sections describe the analytical support areas and laboratory instrument calibration procedures.

4.1 Analytical Support Areas

Prior to generating quality data, several analytical support areas must be considered; these are detailed in the following paragraphs.

Standard/Reagent Preparation - Primary reference standards and secondary standard solutions shall be obtained from National Institute of Standards and Technology (NIST), or other reliable commercial sources to verify the highest purity possible. The preparation and maintenance of standards and reagents will be accomplished according to the methods referenced. All standards and standard solutions are to be formally documented (i.e., in a logbook) and should identify the supplier, lot number, purity/concentration, receipt/preparation date, preparers name, method of preparation, expiration date, and any other pertinent information. All standard solutions shall be validated prior to use. Care shall be exercised in the proper storage and handling of standard solutions (e.g., separating volatile standards from nonvolatile standards). The laboratory shall continually monitor the quality of the standards and reagents through well documented procedures.

Balances - The analytical balances shall be calibrated and maintained in accordance with manufacturer specifications. Calibration is conducted with two Class AS" weights that bracket the expected balance use range. The laboratory shall check the accuracy of the balances daily and they must be properly documented in permanently bound logbooks.

Refrigerators/Freezers - The temperature of the refrigerators and freezers within the laboratory shall be monitored and recorded daily. This will verify that the quality of the standards and reagents is not compromised and the integrity of the analytical samples is upheld. Appropriate acceptance ranges (2 to 6°C for refrigerators) shall be clearly posted on each unit in service.

Water Supply System - The laboratory must maintain a sufficient water supply for all project needs. The grade of the water must be of the highest quality (analyte-free) in order to eliminate

false-positives from the analytical results. Ultraviolet cartridges or carbon absorption treatments are recommended for organic analyses and ion-exchange treatment is recommended for inorganic tests. Appropriate documentation of the quality of the water supply system(s) will be performed on a regular basis.

4.2 Laboratory Instruments

Calibration of instruments is required to verify that the analytical system is operating properly and at the sensitivity necessary to meet established quantitation limits. Each instrument for organic and inorganic analyses shall be calibrated with standards appropriate to the type of instrument and linear range established within the analytical method(s). Calibration of laboratory instruments will be performed according to specified methods.

In addition to the requirements stated within the analytical methods, the contract laboratory will be required to analyze an additional low level standard at or near the detection limits. In general, standards will be used that bracket the expected concentration of the samples. This will require the use of different concentration levels, which are used to demonstrate the instrument's linear range of calibration.

Calibration of an instrument must be performed prior to the analysis of any samples and then at periodic intervals (continuing calibration) during the sample analysis to verify that the instrument is still calibrated. If the contract laboratory cannot meet the method required calibration requirements, corrective action shall be taken as discussed in Section 7.0. All corrective action procedures taken by the contract laboratory are to be documented, summarized within the case narrative, and submitted with the analytical results.

5.0 INTERNAL QUALITY CONTROL CHECKS

Internal QC checks are used to determine if analytical operations at the laboratory are in control, as well as determining the effect sample matrix may have on data being generated. Two types of internal checks are performed and are described as batch QC and matrix-specific QC procedures. The type and frequency of specific QC samples performed by the contract laboratory will be according to the specified analytical method and project specific requirements. Acceptable criteria and/or target ranges for these QC samples are presented within the referenced analytical methods.

QC results which vary from acceptable ranges shall result in the implementation of appropriate corrective measures, potential application of qualifiers, and/or an assessment of the impact these corrective measures have on the established data quality objectives. Quality control samples including any project-specific QC will be analyzed are discussed below.

5.1 Batch QC

Method Blanks - A method blank is defined as laboratory-distilled or deionized water that is carried through the entire analytical procedure. The method blank is used to determine the level

of laboratory background contamination. Method blanks are analyzed at a frequency of one per analytical batch.

Matrix Spike Blank Samples - A matrix spike blank (MSB) sample is an aliquot of water spiked (fortified) with all the elements being analyzed for calculation of precision and accuracy to verify that the analysis that is being performed is in control. A MSB will be performed for each matrix and organic parameter only.

5.2 Matrix-Specific QC

Matrix Spike Samples - An aliquot of a matrix is spiked with known concentrations of specific compounds as stipulated by the methodology. The matrix spike (MS) and matrix spike duplicate (MSD) are subjected to the entire analytical procedure in order to assess both accuracy and precision of the method for the matrix by measuring the percent recovery and relative percent difference of the two spiked samples. The samples are used to assess matrix interference effects on the method, as well as to evaluate instrument performance. MS/MSDs are analyzed at a frequency of one each per 20 samples per matrix.

Matrix Duplicates - The matrix duplicate (MD) is two representative aliquots of the same sample which are prepared and analyzed identically. Collection of duplicate samples provides for the evaluation of precision both in the field and at the laboratory by comparing the analytical results of two samples taken from the same location. Obtaining duplicate samples from a soil matrix requires homogenization (except for volatile organic compounds) of the sample aliquot prior to filling sample containers, in order to best achieve representative samples. Every effort will be made to obtain replicate samples; however, due to interferences, lack of homogeneity, and the nature of the soil samples, the analytical results are not always reproducible.

Rinsate (Equipment) Blanks - A rinsate blank is a sample of laboratory demonstrated analyte-free water passed through and over the cleaned sampling equipment. A rinsate blank is used to indicate potential contamination from ambient air and from sample instruments used to collect and transfer samples. This water must originate from one common source within the laboratory and must be the same water used by the laboratory performing the analysis. The rinsate blank should be collected, transported, and analyzed in the same manner as the samples acquired that day. Rinsate blanks for nonaqueous matrices should be performed at a rate of 10 percent of the total number of samples collected throughout the sampling event. Rinse blanks will not be performed on samples (i.e., groundwater) where dedicated disposable equipment is used.

Trip Blanks - Trip blanks are not required for nonaqueous matrices. Trip blanks are required for aqueous sampling events. They consist of a set of sample bottles filled at the laboratory with laboratory demonstrated analyte free water. These samples then accompany the bottles that are prepared at the lab into the field and back to the laboratory, along with the collected samples for analysis. These bottles are never opened in the field. Trip blanks must return to the lab with the same set of bottles they accompanied to the field. Trip blanks will be analyzed for volatile organic parameters. Trip blanks must be included at a rate of one per volatile sample shipment.

6.0 CALCULATION OF DATA QUALITY INDICATORS

6.1 Precision

Precision is evaluated using analyses of a field duplicate and/or a laboratory MS/MSD which not only exhibit sampling and analytical precision, but indicate analytical precision through the reproducibility of the analytical results. RPD is used to evaluate precision by the following formula:

$$RPD = \frac{(X_1 - X_2)}{[(X_1 + X_2)/2]} \times 100\%$$

where:

X_1 = Measured value of sample or matrix spike
X_2 = Measured value of duplicate or matrix spike duplicate

Precision will be determined through the use of MS/MSD (for organics) and matrix duplicates (for inorganics) analyses.

6.2 Accuracy

Accuracy is defined as the degree of difference between the measured or calculated value and the true value. The closer the numerical value of the measurement comes to the true value or actual concentration, the more accurate the measurement is. Analytical accuracy is expressed as the percent recovery of a compound or element that has been added to the environmental sample at known concentrations before analysis. Analytical accuracy may be assessed through the use of known and unknown QC samples and spiked samples. It is presented as percent recovery. Accuracy will be determined from matrix spike, matrix spike duplicate, and matrix spike blank samples, as well as from surrogate compounds added to organic fractions (i.e., volatiles, semivolatiles, PCB), and is calculated as follows:

$$Accuracy\ (\%R) = \frac{(X_s - X_u)}{K} \times 100\%$$

where:

X_s - Measured value of the spike sample
X_u - Measured value of the unspiked sample
K - Known amount of spike in the sample

6.3 Completeness

Completeness is calculated on a per matrix basis for the project and is calculated as follows:

$$Completeness\ (\%C) = \frac{(X_v - X_n)}{N} \times 100\%$$

where:

X_v - Number of valid measurements

X_n - Number of invalid measurements
N - Number of valid measurements expected to be obtained

7.0 CORRECTIVE ACTIONS

Laboratory corrective actions shall be implemented to resolve problems and restore proper functioning to the analytical system when errors, deficiencies, or out-of-control situations exist at the laboratory. Full documentation of the corrective action procedure needed to resolve the problem shall be filed in the project records, and the information summarized in the case narrative. A discussion of the corrective actions to be taken is presented in the following sections.

7.1 Incoming Samples

Problems noted during sample receipt shall be documented by the laboratory. The PEI Project Manager shall be contacted immediately for problem resolution. All corrective actions shall be documented thoroughly.

7.2 Sample Holding Times

If any sample extraction and/or analyses exceed method holding time requirements, the PEI Project Manager shall be notified immediately for problem resolution. All corrective actions shall be documented thoroughly.

7.3 Instrument Calibration

Sample analysis shall not be allowed until all initial calibrations meet the appropriate requirements. All laboratory instrumentation must be calibrated in accordance with method requirements. If any initial/continuing calibration standards exceed method QC limits, recalibration must be performed and, if necessary, reanalysis of all samples affected back to the previous acceptable calibration check.

7.4 Reporting Limits

The laboratory must meet the method required detection limits listed in NYSDEC ASP, 10/95 criteria. If difficulties arise in achieving these limits due to a particular sample matrix, the laboratory must notify PEI project personnel for problem resolution. In order to achieve those detection limits, the laboratory must utilize all appropriate cleanup procedures in an attempt to retain the project required detection limits. When any sample requires a secondary dilution due to high levels of target analytes, the laboratory must document all initial analyses and secondary dilution results. Secondary dilution will be permitted only to bring target analytes within the linear range of calibration. If samples are analyzed at a secondary dilution with no target analytes detected, the PEI Project Manager will be immediately notified so that appropriate corrective actions can be initiated.

7.5 Method QC

All QC method-specified QC samples, shall meet the method requirements referenced in the analytical methods. Failure of method-required QC will result in the review and possible qualification of all affected data. If the laboratory cannot find any errors, the affected sample(s) shall be reanalyzed and/or re-extracted/redigested, then reanalyzed within method-required holding times to verify the presence or absence of matrix effects. If matrix effect is confirmed, the corresponding data shall be flagged accordingly using the flagging symbols and criteria. If matrix effect is not confirmed, then the entire batch of samples may have to be reanalyzed and/or re-extracted/redigested, then reanalyzed at no cost to the PEI. PEI shall be notified as soon as possible to discuss possible corrective actions should unusually difficult sample matrices be encountered.

7.6 Calculation Errors

All analytical results must be reviewed systematically for accuracy prior to submittal. If upon data review calculation and/or reporting errors exist, the laboratory will be required to reissue the analytical data report with the corrective actions appropriately documented in the case narrative.

8.0 DATA REDUCTION, VALIDATION, AND USABILITY

8.1 Data Reduction

Laboratory analytical data are first generated in raw form at the instrument. These data may be either in a graphic or printed tabular format. Specific data generation procedures and calculations are found in each of the referenced methods. Analytical results must be reported consistently. Identification of all analytes must be accomplished with an authentic standard of the analyte traceable to NIST or USEPA sources. Individuals experienced with a particular analysis and knowledgeable of requirements will perform data reduction.

8.2 Data Validation

Data validation is a systematic procedure of reviewing a body of data against a set of established criteria to provide a specified level of assurance of validity prior to its intended use. All analytical results from soil and initial and final rounds of groundwater samples will have ASP Category B deliverables and DUSRs. The data validation will be in accordance with DER-10 Section 2.2 with ASP- Cat B data deliverables provided by the laboratory and a Data Usability Summary Report provided for validation.

- Technical holding times will be in accordance with NYSDEC ASP, 7/2005 edition.
- Organic calibration and QC criteria will be in accordance with NYSDEC ASP, 7/2005 edition. Data will be qualified if it does not meet NYSDEC ASP, 7/2005 criteria.

Where possible, discrepancies will be resolved by the PEI project manager (i.e., no letters will be written to laboratories).

9.0 REFERENCES

Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Quality Assurance Manual, Final Copy , Revision I, October 1989.

National Enforcement Investigations Center of USEPA Office of Enforcement. *NEIC Policies and Procedures.* Washington: USEPA.

New York State Department of Environmental Conservation (NYSDEC) 2005. *Analytical Services Protocol,* (ASP) 7/2005 Edition. Albany: NYSDEC.

NYSDEC "DER-10 Technical Guidance for Site Investigation and Remediation (DER-10)," dated May 3, 2010, Appendix 2B

APPENDIX D

FIELD SAMPLING PLAN
SOIL AND WATER

Page No.

FIELD SAMPLING PLAN

FIELD SAMPLING PLAN (SOIL AND WATER)

1.0 INTRODUCTION

This Field Sampling Plan (FSP) is designed to provide procedures for the field activities outlined in the Work Plan where soil and groundwater investigation/sampling may be required at the Former Crescent Purity Laundry site under the BCP. It will serve as the field procedures manual to be strictly followed by all personnel. Adherence to these procedures will ensure the quality and usability of the field data collected. In addition to the field procedures outlined in this document, all personnel performing field activities must comply with:

- The appropriate Health and Safety guidelines found in the Health and Safety Plan (HASP) Appendix A;
- The Quality Assurance/Quality Control measures outlined in Appendix C; and
- The scope of work outlined in the Work Plan.

2.0 SOIL SAMPLING/INVESTIGATIONS

2.1 Soil Sampling

This section discusses the procedures for collecting an aliquot of sample for chemical analysis. Soil samples will be obtained as outlined in the Work Plan. The detailed procedure is outlined below:

1. Inspect test pit and/or boring core stratigraphy, sample soil and records depth interval. Record any physical characteristics (e.g., obvious contamination, odor, or discoloration) in the field logbook. Simultaneously place the probe of a calibrated PID into the exposed soil. Record the instrument readings in the field logbook.
2. Samples are to be collected at locations and frequency as discussed in the Work Plan and the Appendix C QA/QC Plan.
3. If not dedicated, decontaminate sampling implements after use and between sample locations (in most cases dedicated sampling equipment will be used).
4. Record field sampling information in the field logbook. Label each sample container with the appropriate sample identification data and place sample in a cooler (cooled to 4 degrees C.) for shipment to the laboratory.
5. Initiate chain-of-custody procedures.

2.1.1 Test Pit Procedures

Summary

Test pit sampling is a standard method of soil sampling to obtain representative samples for identification as well as to serve as a means of obtaining a large amount of information about the subsurface.

The following steps describe the procedures for test pit operations.

Field Preparation

1. Verify underground utilities have been found.
2. Review scope of work, safety procedures and communication signals with all site personnel. Identify local suppliers of sampling expendable and overnight delivery services. Pre-clean the sampling equipment prior to use, as necessary.
3. Mark/review trench locations. The specific locations will be determined in the field. Trench locations will be selected based on several factors, including areas of visible potential surface contamination/debris, pre-determined locations to examine representative areas across the site, and vegetative obstructions.
4. After completing each trench and sampling (as described above), subsurface soil will be backfilled. Backfilling will occur in the order in which the soil was removed. The backhoe will then be decontaminated over the test pit. The pit will then be filled in with clean overburden/topsoil and/or the fill that was previously on the surface, as available.

Excavation and Sample Collection

1. Maneuver the backhoe into position
2. Commence excavation with the backhoe positioned upwind of the excavation. Conduct continuous air monitoring with appropriate air monitoring equipment. Screen the soil for volatile organic compounds as it is placed on the soil pile.
3. Test trenching will be carried out in the following manner and as directed by PEI's site representative:
    - For each test trench, topsoil and/or cover soil (if any) will be excavated and placed on plastic sheeting.
    - Soil/fill below the topsoil will be excavated to the depth directed by PEI's site representative and placed on plastic sheeting separate from the topsoil/cover soil.
    - At completion of excavation all equipment in contact with the soil/fill will be steam cleaned over the trench after backfilling.
    - All trenches will be backfilled with indigenous soil in the order in which the material was removed with the topsoil/cover soil placed last to cover the trench.
4. A geologic log will be recorded as each trench is excavated. Upon completing the excavation of the pit, visually inspect the horizons of the soil for discoloration or staining and photo document the pit. The following information will be recorded for each test pit on the Test Pit Log:
    - The total depth, length, and width of the excavation.
    - The depth and thickness of distinct soil or lithologic units.
    - A lithologic description of each unit.
    - A description of any man-made materials or apparent contamination.
    - Elevation of incoming water, if encountered.
    - Depth to groundwater and/or bedrock.
    - Using dedicated stainless steel spoons collect soil samples as detailed in Section 2.1. Soil samples will be collected directly from the bucket of the backhoe.

The backhoe will collect a sample from a specific soil horizon and bring the sample back to the ground surface. **No personnel shall enter the excavation to collect samples unless a confined permit has been obtained.** Each soil sample will be placed directly into appropriate sample bottles/jars.

5. Carefully and clearly label the sample bottles and jars with the appropriate bottle label.
6. Place each jar in an ice-filled cooler.
7. Use the chain-of-custody form to document the types and numbers of test pit samples collected and logged.
8. Record the time and date of sample collection as well as a description of the sample and any associated air monitoring measurements in the field logbook.
9. All excavated soil will be returned to the trench following completion of excavation activities at each individual trench location. Each test pit will be backfilled and compacted prior to moving to the next. During the test pit operations an attempt will be made to segregate clean from dirty soil using visual observations and PID screening. When the test pit is being filled, if dirty soil was encountered, it will be placed in the bottom of the pit and covered with clean soil.
10. Decontamination sampling equipment-Decontaminate backhoe bucket prior to commencing and between locations.

Post Operations

1. Organize field notes. All relevant information recorded in the field logbook and the Test Pit Log.
2. All samples should be shipped to the laboratory as soon as possible, but no more than 24 hours after being collected.

2.1.2 Geoprobe Drilling Program

Soil sampling may also be conducted using Geoprobe drilling methods.

Macro Core Drilling Procedures:

Summary

Geoprobe Macro Core direct push sampling is a standard method of soil sampling to obtain representative samples for identification as well as to serve as a means of obtaining a specific amount of information about the subsurface.

The following steps describe the procedures for Macro Core direct push drilling operations.

Field Preparation

1. Verify underground utilities have been found.

2. Review scope of work, safety procedures and communication signals with all site personnel. Identify local suppliers of sampling expendable and overnight delivery services. Pre-clean the sampling equipment prior to use, as necessary.

3. Mark/review boring locations. The specific locations will be determined in the field. Boring locations will be selected based on several factors, including areas of visible potential surface contamination, pre-determined locations to examine representative areas across the site, and vegetative obstructions.
4. After completing each boring hole, subsurface soil will be backfilled. The boring hole will then be filled in with spoils and/or clean sand, if any available.

Excavation and Sample Collection

1. Maneuver the Geoprobe rig into position.
2. Commence drilling with the Geoprobe rig positioned upwind of the excavation. Conduct continuous air monitoring with appropriate air monitoring equipment. Screen the soil for volatile organic compounds as it is placed in a staged area.
3. Geoprobe borings will be carried out in the following manor and as directed by PEI's site representative:
    1. Start up drill rig and raise mast.
    2. If there is pavement use star bit with rig in rotary setting to penetrate pavement.
    3. If you are setting a road box excavate a hole large enough to set the road box before you advance the borehole.
    4. Unthread the bottom of the sample tube and inset a new sample liner. Thread the shoe on the bottom of the sample tube.
    5. Thread the drive cap on the top of the sample tube.
    6. Align the sample tube so it is plumb in both directions. The will assure you drill a straight borehole. It is important to drill a straight borehole.
    7. Drive the top of the sample tube to ground surface.
    8. Unthread the drive cap and thread on the pull cap.
    9. Pull the sample tube from the ground. Use caution so as not to pinch your hand between the drill rods, pull cap or rig during any of these steps.
    10. With the sample tube from the ground unthread the cutting shoe and pull the sample liner from the sample tube. You may need to use needle nose pliers to reach in the sample tube and grab the liner. Cut the sample liner lengthwise in two places and take it to the client.
    11. Insert a new liner and thread on the cutting shoe.
    12. Align the sample tube so it is plumb in both directions. The will assure you drill a straight borehole. It is important to drill a straight borehole.
    13. Push the sample tube to ground surface and thread a four-foot long drill rod onto the top of the sample tube. Thread on the drive cap and drive the top of the drill rod to ground surface.
    14. Unthread the drive cap and thread on the pull cap.
    15. Pull the drill rod from the ground.

16. Remove the pull cap from the drill rod and thread it on the sample tube
17. Pull the sample tube from the ground.
18. Repeat step 14, 15, 16 and 17.
19. After completing 17 add a second drill rod and drive it to ground surface. The borehole should now be 12 feet deep.
20. This procedure is repeated until the desired depth or refusal is reached.
21. For each Geoprobe boring, the sleeve/core will be placed on plastic sheeting.
22. The soil stratigraphy will be excavated to the depth directed by PEI's site representative and placed on plastic sheeting.
23. At completion of probe excavation all equipment in contact with the soil/fill will be cleaned in a decontamination area using Alconox and water.
24. All probe holes will be backfilled with indigenous soil in the order in which the material was removed with the topsoil/sand/cover soil placed last to cover the hole.

4. A geologic log will be recorded as each borehole is excavated. Upon completing the excavation of the borehole, visually inspect the horizons of the soil for discoloration or staining and photo document the pit. The following information will be recorded for each boring on the Geoprobe Log:
   -The total depth, length, and width of the excavation.
   -The depth and thickness of distinct soil or lithologic units.
   -A lithologic description of each unit.
   -A description of any man-made materials or apparent contamination.
   -Elevation of incoming water, if encountered.
   -Depth to groundwater and/or bedrock.
5. Using dedicated stainless steel spoons, collect soil samples as detailed in Section 2.1. Soil samples will be collected directly from the plastic sleeve of the probe core. Each soil sample will be placed directly into appropriate sample bottles/jars.
6. Carefully and clearly label the sample bottles and jars with the appropriate bottle label. Place each jar in an ice-filled cooler.
7. Use the chain-of-custody form to document the types and numbers of borehole samples collected and logged.
8. Record the time and date of sample collection as well as a description of the sample and any associated air monitoring measurements in the field logbook.
9. All excavated soil will be returned to the probe hole following completion of excavation activities at each individual trench location. Each probe hole will be backfilled and compacted prior to moving to the next.
10. Decontamination sampling equipment - Decontaminate all rods, shoes, and other geoprobe tools prior to commencing and between locations.

<u>Post Operations</u>

1. Organize field notes. All relevant information recorded in the field logbook and the Boring Log.
2. All samples should be shipped to the laboratory as soon as possible, but no more than 24 hours after being collected.

Reference: American Society for Testing Material (ASTM), 1992, ASTM D1586-84, Standard Method for Penetration Test and Split Barrel Sampling of Soils.

3.0 GROUNDWATER INVESTIGATION

3.1 Monitoring Well Installation Procedures

Summary

The following procedure outlines a NYSDEC-approved method of constructing groundwater monitoring wells within unconsolidated material which enables monitoring of groundwater elevation and acquiring groundwater samples for laboratory testing. The open hole method means you simply place the well screen and riser inside the drilled borehole. For this method to be used the borehole must remain open to the required total depth of the well. Stick-up or road box will be installed at completion. The following is a step-by-step method for the open-hole method of installing a monitoring well.

Procedure

1. Thread a cap on the bottom section of well screen.
2. If more than one section of well screen is required, thread it to the bottom section
3. Having the riser section close at hand lower the screen into the borehole.
4. Add the riser sections to the screen. Do not drop the screen in the borehole.
5. Add riser sections as required until the bottom screen section touches the bottom of the borehole.
6. If completing the well with a road box, mark the riser so it will be two inches below the lid of the road box and then cut the riser.
7. Place a slip cap over the top of the rise section.
8. Place sand in the space between the borehole and the PVC screen and riser to the depth the inspector request. Place the sand in very slowly so it does not bridge in the well bore.
9. Place bentonite and cement above the sand-pack.
10. Grout in the road box with concrete mix.

3.2 Well Development Procedures

Summary

Following completion of drilling and well installation, and no sooner than 24 hours after installation, each well will be developed by a surge block method followed by pumping or bailing until the discharged water is relatively sediment free and the indicator parameters (pH, temperature, and specific conductivity) have reached steady-state. Developing the well not only removes any sediment, but may improve the hydraulic properties of the sand pack. Well development water will be placed on the ground surface downgradient of the well.

The effectiveness of the development measures will be closely monitored in order to keep the volume of discharged waters to the minimum necessary to obtain sediment-free samples. Steady-state pH, temperature, and specific conductivity readings will be used as a guide for discontinuing well development.

Procedure

1) An appropriate well development method should be selected, depending on water level depth, well productivity, and sediment content of the water. Well development options include: (a) bailing; (b) manual pumping; and (c) submersible pumps. Any of these options may be exercised in concert with surging of the well screen using an appropriately sized surge block.

2) Equipment should be assembled, decontaminated, if necessary, and installed in the monitoring well. Care should be taken not to introduce contaminants to the equipment during installation.

3) Well development should proceed by repeated removal of water from the well until the discharged water is relatively sediment-free. Volume of water removed, pH and conductivity measurements, are recorded on the Well Development/Purging Logs.

4) Well development will occur no sooner than 24 hours after installation. Well development will continue until readings of <50 NTUs are obtained.

3.3 Groundwater Well Purging/Sampling

Summary

To collect representative groundwater samples, groundwater wells must be adequately purged to sampling. Purging will require removing three to five volumes of standing water in rapidly recharging wells and at least one volume from wells with slow recharge rates. Sampling should commence as soon as adequate recharge has occurred.

The wells will be sampled following procedures found in Section 3.5. The samples will be labeled and shipped following procedures outlined in Sections 6.0 and 7.0 and analyzed according to the program outlined in the QA/QC Plan (Appendix C).

3.4 Well Purging Procedures

Procedure

1) The well cover will be carefully removed to avoid any foreign material enter the well. The interior of the riser pipe will be monitored for organic vapors using a PID. If reading of greater than 5 ppm is recorded, the well will be vented until levels are below 5 ppm before pumping is started.

2) Using an electronic water level indicator, the water level below top of casing will be measured. Knowing the total depth of the well, it will be possible to determine the volume of water in the well. The end of the probe will be washed with soap and rinsed with deionized-water between wells.

3) Dedicated new polyethylene discharge and intake tubing (½ inch diameter HDPE) will be used for each well. Evacuation of the well will be accomplished using bailers. Bailing will continue until the required volumes are removed. If the well purges to dryness and recharges rapidly (within 15 minutes), water will continue to be removed as it recharges until the required volumes are removed. If the well purges to dryness and is slow recharge (greater than 15 minutes), evacuation will be terminated.

4) Purging will continue until three volumes of water have been removed. Well volumes will be calculated. Measurements for pH, temperature, turbidity, and conductivity will be recorded during the purging along with physical observations.

5) Well purging data are to be recorded in the field notebook and on the Well Development/Purging Log.

3.5 Groundwater Sampling Procedures

Procedure

1) Well sampling may be performed on the same date as purging at any time after the well has recovered sufficiently to sample, or within 24 hours after evacuation, if the well recharges slowly. If a well does not contain or yield sufficient volume for all required laboratory analytical testing, then a decision will be made to prioritize analyses. If a well takes longer than 24 hours to recharge, then a decision will be made after consultation with NYSDEC whether the sample will be considered valid.

2) After well purging is complete and the well has recharged sufficiently per the previous item, a sample will be collected by use of bailers into appropriate containers.

3) All sample bottles will be labeled in the field using a waterproof permanent marker. Procedures outlined in Section 6.0 will be followed.

4) Samples will be collected into verifiably clean sample bottles (containing required preservatives) and placed on ice in coolers for transport to the analytical laboratory. Chain-of-custody will be initiated. The analytical laboratory will certify that the sample bottles are analyte-free.

5) A separate sample will be collected into a 120 milliliter (mL) plastic specimen cup to measure pH, conductivity, turbidity, and temperature off the well in the field.

6) Well sampling data are to be recorded in the field notebook and on the Well Development/Purging Log.

4.0 SAMPLE DOCUMENTATION-SOIL/WATER

Summary

Each subsurface test pit and boring core will be logged in a bound field notebook during drilling by the supervising geologist. Field notes will include descriptions of subsurface material encountered during test pit and drilling, sample numbers and types of samples recovered from the test pits and wells. Additionally, the geologist will note time and material expenditures for later verification of contractor invoices.

Upon completion of daily drilling activities, the geologist will complete the Daily Drilling Record and initiate chain-of-custody on any samples recovered for geotechnical or chemical testing. Following completion of the drilling program, the geologist will transfer field logs onto standard boring log forms and well completion logs for the site investigation report.

5.0 SAMPLING CONTAINER SELECTION-SOIL/WATER

The selection of sample containers is based on both the media being sampled and the analysis of interest.

6.0 SAMPLE LABELING-SOIL/WATER

Summary

In order to prevent misidentification and to aid in the handling of environmental samples collected during the field investigation, the procedures listed below will be followed:

Procedure: Affixed to each sample container will be a non-removable (when wet) label. The sample bottle will be wrapped with 2-inch cellophane tape. Apply label and wrap with tape to cover label. The following information will be written with permanent marker:

1. Site name
2. Sample identification
3. Project number
4. Date/time
5. Sampler's initials
6. Sample preservation
7. Analysis required
8. Site name
9. Sample identification

10. Project number
11. Date/time
12. Sampler's initials
13. Sample preservation
14. Analysis required

Each sample of each matrix will be assigned a unique identification alpha-numeric code. An example of this code and a description of its components is presented below:

Examples:

1. PEI-BI-ss1
   Where: PEI= Panamerican Environmental, Inc.
   BI = Bush Industries
   SS-1 = surface soil sample 1

2. PEI-BI-TP1-2-3
   Where: TP1 = Test Pit 1
   2-3 = Sample Depth in feet

List of Abbreviations

Sample Type

TP	=	Test Pit
BH	=	Geoprobe Borehole
SW	=	Surface Water
SED	=	Sediment
SB	=	Soil Boring
SS	=	Surface Soil (0-2" depth)
MSB	=	Matrix Spike Blank
NSS	=	Near Surface Soil (1' - 2' depth)
EB	=	Equipment Rinse Blank
HW	=	Hydrant Water (Decon/Drilling Water)
GW	=	Groundwater
TB	=	Trip Blank
RB	=	Rinse Blank
MS/MSD	=	Matrix Spike/Matrix Spike Duplicate

7.0 SAMPLE SHIPPING-SOIL/WATER

Summary

Proper documentation of sample collection and the methods used to control these documents are

referred to as chain-of-custody procedures.

Chain-of-custody procedures are essential for presentation of sample analytical chemistry results as evidence in litigation or at administrative hearings held by regulatory agencies. Chain-of-custody procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

The procedures used in the pre-design field activities follow the chain-of-custody guidelines outlined in *NEIC Policies and Procedures*, prepared by the National Enforcement Investigations Center (NEIC) of the USEPA Office of Enforcement,

Procedure:

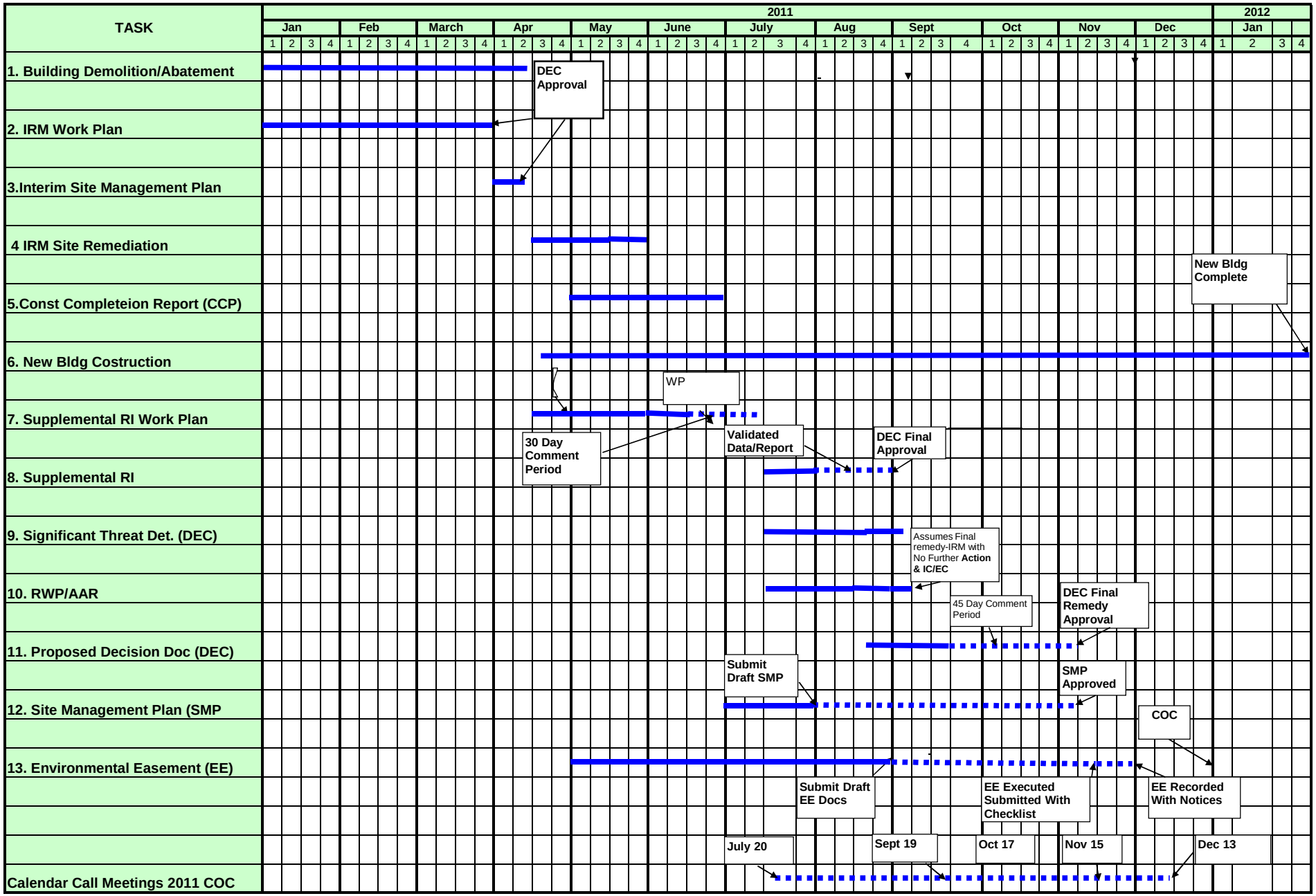
1) The chain-of-custody record should be completely filled out with all relevant information.
2) The white original travels with the samples and should be placed in a Ziplock bag and taped inside the sample cooler.
3) Place about 3 inches of inert cushioning material (such as vermiculite or zonolite) in bottom of cooler.
4) Place bottles in cooler so they do not touch (use cardboard dividers).
5) Put VOA vials in Ziplock bags and place them in the center of the cooler.
6) Pack bottles, especially VOA vials, in ice in plastic bags.
7) Pack cooler with ice in Ziplock plastic bags.
8) Pack cooler with cushioning material.
9) Put paperwork in plastic bags and tape with masking tape to inside lid of cooler.
10) Tape drain shut.
11) Wrap cooler completely with strapping tape at two locations. Secure lid by taping. Do not cover any labels.
12) Place lab address on top of cooler.
13) Ship samples via overnight carrier the same day that they are collected.
14) Put "This side up" labels on all four sides and "Fragile" labels on at least two sides.
15) Affix numbered custody seals on front right and left of cooler. Cover seals with wide, clear tape.

APPENDIX E

PROJECT SCHEDULE

BCP SCHEDULE 6-13-11

1630 Dewey Ave BCP Site # C828163



APPENDIX F

HISTORIC INVESTIGATIONS GALSON/DAY REPORTS (EXCERPTS)

Section 2.1

Soil Gas Survey

Between January 27, 1999, and January 28, 1999, Galson performed a soil gas survey of the property located at 1630 Dewey Avenue. Survey locations were focused along the northern half of the building and around suspected underground storage tank (UST) locations along the southeast and northeast sides of the building (Figure 1 - Appendix II-A). Sampling locations were chosen to provide analytical data on possible volatile organic compounds (VOCs) in soil gas to determine if releases have occurred associated with the USTs or former dry cleaning processes within the northern portion of the building. Samples of soil gas were acquired and analyzed by Galson's subcontractor, Specialized Environmental Monitoring (SEM). Samples were obtained through a metal probe rod driven to a depth of four feet below grade, by means of a "slam bar." Kevin McGovern, a Galson field geologist, provided oversight of the sampling.

Samples were obtained from 20 locations and analyzed using a Photovac 10S70 portable gas chromatograph calibrated to quantify the concentrations of the following target VOCs in soil gas:

- Methyl tert-butyl ether (MTBE)
- Benzene
- Toluene
- m & p - Xylenes
- o - Xylene
- Trichloroethene (TCE)
- Dichloroethene (DCE)
- Tetrachloroethene (Perc)

A detailed description of the soil gas sampling and analytical methodology is presented in Appendix II-A of this report.

2.1.1 Soil Gas Survey Analytical Results

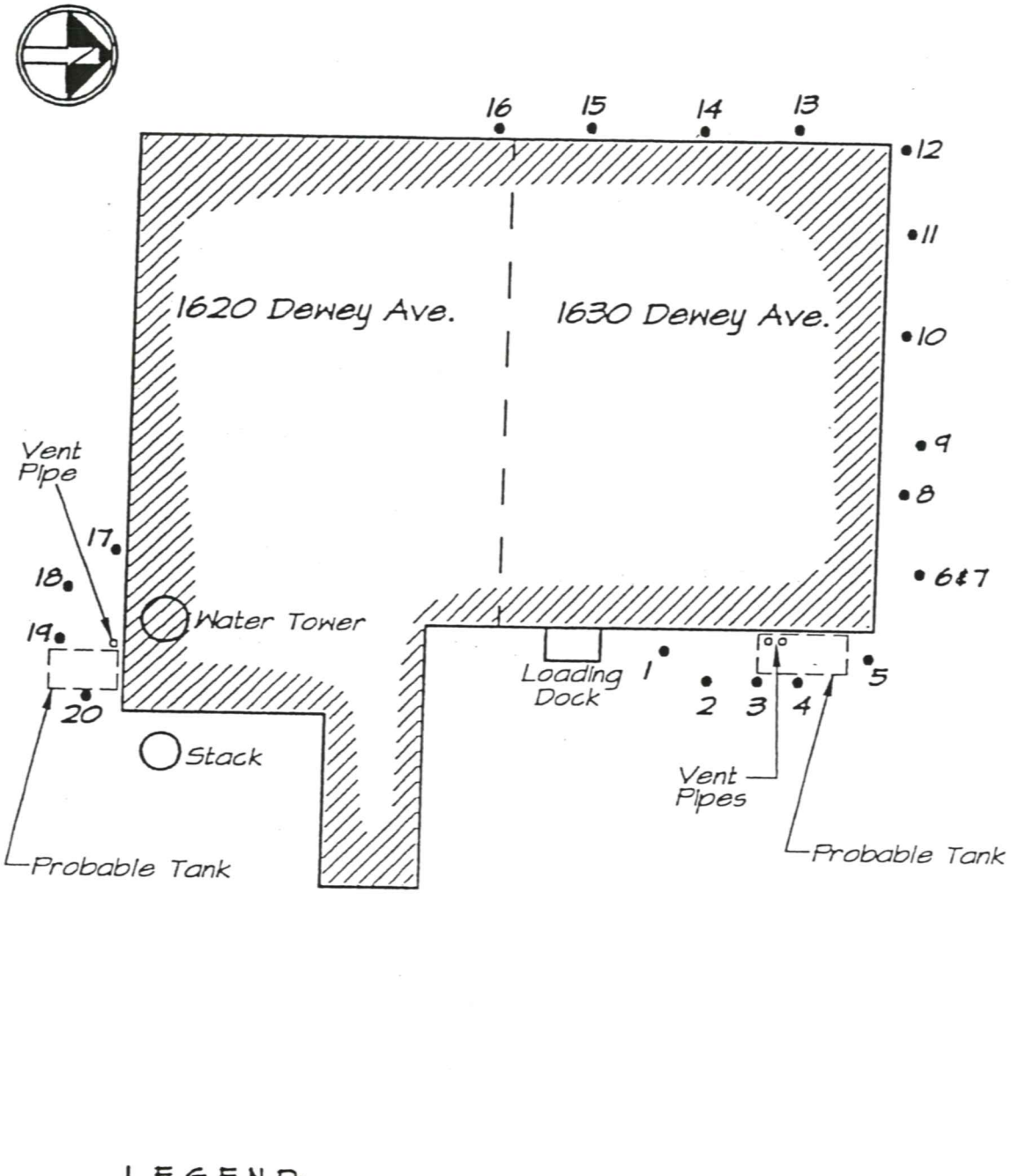
The results of the analytical testing performed by SEM are tabulated in Table 1 of Appendix II-A. TCE was only detected in one sample (SG-12) at a trace amount (10 - 15 ppb). A trace amount (15 - 25 ppb) of toluene was detected in the duplicate sample (SG-5). Prior to the analysis of the duplicate sample, the chromatograph was calibrated via a standard gas which included toluene. The trace amount of toluene, detected in the duplicate, may be the result of residual toluene present in the instrument during the duplicate analysis. No target compounds were detected in the remaining samples analyzed.

2.1.2 Soil Gas Survey Conclusions

Only trace concentrations of VOCs were detected in two of the samples analyzed, with one of those instances (toluene detection) presumed to be the result of residual toluene present in the instrument from a calibration run.

No indication of contamination of soil by possible releases from either the former dry cleaning/laundry processes or the UST locations was detected as a result of the performance of the soil gas survey.

Although no evidence of a release either outside of or within the building was discovered during the limited Phase II tasks performed, a release within the building may have occurred. No intrusive sampling beneath the basement floor slab was conducted. If excavation work is anticipated as part of renovation of the structure, additional investigation effort is warranted to determine if releases have occurred within the building. This additional effort should consist of, at a minimum, soil gas sampling as well as collection and analysis of soil samples from beneath the basement floor slab.



LEGEND:

- SOIL GAS LOCATION

FIGURE 1

SPECIALIZED ENVIRONMENTAL MONITORING

Wilton, New York

GALSON CORPORATION SITE

Rochester, New York

SOIL GAS LOCATION MAP

SCALE: N.T.S.

Table 1
Soil Gas Analytical Results [1]
1630 Dewey Avenue
Rochester, New York
January 27 & 28, 1999

Compound[2]	SG-1	SG-2	SG-3	SG-4	SG-5	SG-6-7	SG-8	SG-9	SG-10	SG-11	SG-12	SG-13	SG-14	SG-15
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m & p xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Trace	ND	ND	ND
Perc	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

[1] By portable gas chromatograph - PID
[2] = Concentrations are in parts per billion (ppb)
Trace = Levels are at or just above the lowest detection limits for this compound

Notes: SG-12 was run a second time and TCE was not present.
A duplicate sample was collected on SG-5. The initial sample was ND. The duplicate showed a trace of Toluene.

Table 2
Soil Gas Analytical Results [1]
1630 Dewey Avenue
Rochester, New York
January 28, 1999

Compound[2]	SG-16	SG-17	SG-18	SG-19	SG-20	Duplicate SG-5
Benzene	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	Trace
Ethylbenzene	ND	ND	ND	ND	ND	ND
m & p xylene	ND	ND	ND	ND	ND	ND
o-xylene	ND	ND	ND	ND	ND	ND
TCE	ND	ND	ND	ND	ND	ND
DCE	ND	ND	ND	ND	ND	ND
Perc	ND	ND	ND	ND	ND	ND

[1] By portable gas chromatograph - PID
[2] = Concentrations are in parts per billion (ppb)
Trace = Levels are at or just above the lowest detection limits for this compound

Note: SG-5 Initial sample was ND

PHASE I ENVIRONMENTAL SITE ASSESSMENT
149 & 161 PALM STREET
ROCHESTER, NEW YORK

Prepared for: City of Rochester
Division of Environmental Quality
30 Church Street
Rochester, New York 14614

Prepared by: Day Environmental, Inc.
2144 Brighton-Henrietta Town Line Road
Rochester, New York 14623

Date: April 19, 2000

Project No.: 2236E-00

- Privileged and Confidential -

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

CLIENT

PREPARED FOR:	City of Rochester Rochester, New York
CLIENT CONTACT:	Mr. Joseph Biondolillo (716) 428-6649

PROPERTY INFORMATION

ADDRESS:	149 and 161 Palm Street
MUNICIPALITY:	City of Rochester
COUNTY/STATE:	Monroe County, New York
TAX ACCOUNT #:	090.34-2-42 and 43
PARCEL SIZE:	Approximately 0.27 acres
IMPROVEMENTS:	None
CURRENT USE:	Parking lot
CURRENT OWNER:	City of Rochester
PAST USE:	Residential from 1915 to 1950; and a vacant lot or a parking lot from 1951 to present.
SITE CONTACT:	Mr. Joseph Biondolillo (716) 428-6649
SITE LOCATION MAP/SITE SKETCH:	Appendix A
PHOTOGRAPHS:	Appendix B

SUMMARY OF ENVIRONMENTAL CONCERNS

ENVIRONMENTAL CONCERNS:	(X) Environmental Concern(s) Identified
	( ) Environmental Concern(s) Not Identified
FURTHER STUDIES):	(X) Further Studies Recommended
	( ) Further Studies Not Recommended

ASSESSMENT SUMMARY

Notes:

1. Abstracts of title were not provided to assist in determining prior property ownership and uses of the two assessed parcels. However, historical deed information for the assessed parcels was reviewed (refer to Section 1.1). The conclusions in this report are subject to any state of facts which review of abstracts of title might show, directly or indirectly.

2. Based upon the EcoSearch report, Kodak Park (i.e., 0.095 miles north of the assessed property) is listed as a New York State Department of Environmental Conservation (NYSDEC) Inactive Hazardous Waste Site; Solid Waste Facility; Local Waste Site Facility; Spills/LST site; Transfer, Storage and Disposal facility; RCRA Generator; CORRACTS; PADS; TRI; DOCKET; TSCA; MOSF; and, CBS facility (refer to Sections 2.3.1, 2.3.4, 2.3.6, 2.5, 2.6.1, 2.6.2, 2.6.4, 2.6.5, 2.6.6, 2.6.8, 2.6.9, 2.6.10 and 2.6.11). In addition, the EcoSearch report also indicates that remediation operations are currently in progress at this site (refer to Appendix C). Kodak Park appears to be hydraulically downgradient of the assessed property (refer to Section 3.7); therefore, additional studies at the assessed property regarding this nearby site do not appear warranted at this time.

3. Day Environmental, Inc. (DAY) retained EcoSearch Environmental Resources, Inc. (EcoSearch) to supply a report describing regulatory information available for the assessed property and its surroundings. Based on the volume of information in this report (631 pages), only summary information from the EcoSearch report is included in Appendix C. A complete copy of the EcoSearch report was provided to the City of Rochester on April 14, 2000. DAY will retain the complete EcoSearch report in its files, and it will be available for review upon request. Relevant information is summarized in Section 2.0.

ENVIRONMENTAL STATUS OF PROPERTY:

Based on the studies performed, further inquiry is needed to appropriately assess the environmental status of the assessed property. Listed below are the environmental concerns and recommended actions that have been identified:

1. **Former On-Site Underground Storage Tanks (USTs):** Information obtained as part of the assessment indicates that two USTs were formerly located on the northeast portion of the assessed property (refer to Sections 2.2, 3.6.1, and 4.1). As part of this assessment, eight test pits (designated TP-1 through TP-8) were excavated, and subsurface conditions were observed and documented (refer to Section 5.0). Evidence of petroleum-type impact (i.e., stained soil, petroleum-type odors, elevated photoionization detector readings above ambient air background concentrations) was detected on soil in test pit TP-1 (i.e., located within the former tank pit area). Evidence of impacted groundwater was not encountered during the fieldwork. A sample of the impacted soil was tested by an analytical laboratory, and the test results indicate that the detected concentrations of petroleum constituents exceed New York State Department of Environmental Conservation (NYSDEC) TCLP Alternative Soil Guidance values (i.e., NYSDEC cleanup criteria). Based on the subsurface conditions observed in other nearby test pits (i.e., TP-4, TP-5, and TP-6), the extent of impacted soil appears limited to the area in proximity to the former tank.

ASSESSMENT SUMMARY (Cont.)

2. **Potential Off-Site Source of Environmental Impact:** During DAY's initial site visit, an apparent drain or fill port was observed in the asphalt pavement on a portion of the adjoining property (1630 Dewey Avenue) located south of the assessed property [Note, magnetic anomalies suggestive of a buried tank were not encountered in this area using a Schoenstedt Model GA-52A magnetic locator]. As part of this assessment, a test pit (designated as TP-3) was excavated north of the apparent drain/fill port, and subsurface conditions were observed and documented (refer to Section 5.0). Evidence of petroleum-type impact (i.e., stained soil, petroleum-type odors, elevated photoionization detector readings above ambient air background concentrations) was detected in this test pit (i.e., in an approximate one-foot thick layer of soil at a depth of approximately 5.0 feet below the existing ground surface). A sample of the impacted soil was tested by an analytical laboratory, and the test results indicate that the detected concentration of one petroleum-based constituent exceeds the NYSDEC TCLP Alternative Soil Guidance values (i.e., NYSDEC cleanup criteria). TPH test results tentatively identified the impact as mineral spirits or Stoddard solvent [Note, Stoddard solvent is a dry cleaning solvent, and the adjoining property addressed as 1630 Dewey Avenue was formerly used as a dry cleaning operation.] Based on the subsurface conditions observed in test pit TP-3 and in other nearby test pits (i.e., TP-8 and TP-7), the extent of impacted soil on the assessed property appears limited.

   Recommendations for Concerns #1 and #2: It is recommended that the extent of the impacted soils be further delineated, and then be remediated in accordance with applicable regulations. Specifically, it is anticipated that the extent of impact can be further delineated by advancing a total of eight to twelve test borings using Geoprobe Systems vehicle-mounted soil sampling equipment or test pits using a backhoe and operator. Subsequently, it is anticipated that the impacted soils in each area of concern can be removed and disposed of at an approved landfill in accordance with applicable regulations. The excavations should then be backfilled with clean fill material, (e.g., crushed stone, run-of-bank material, etc.). If it becomes evident that residual impact at concentrations above regulatory criteria will be left in-place, then passive vent systems or other appropriate remedial actions could be placed in the excavations prior to backfill.

   It is recommended that the NYSDEC be advised of the findings of the studies completed to evaluate the identified environmental concerns (including the results of the studies completed to date and the studies proposed herein) and the proposed remedial actions.

5.0 SUBSURFACE EVALUATION

A subsurface evaluation was performed as part of this assessment. The objectives of this work were to evaluate if USTs remain at the assessed property and to assess subsurface conditions. The scope of work performed, the findings, and conclusions and recommendations are presented below.

Magnetic Locator Survey

A magnetic locator survey was conducted at the Site on March 26, 2000 using a Schoenstedt Model GA-52A magnetic locator. The information obtained was used to assist in the evaluation of whether USTs are present at the assessed property or an adjoining property, and to assist in the placement of test pits as described below. This type of magnetic locator survey is a cursory survey and is not considered to be a definitive method of locating buried tanks.

During this magnetic locator survey, one area of high magnetic anomaly was detected along the west property boundary in an area where a UST is suspected on the adjoining 1630 Dewey Avenue property. A test pit (i.e., TP-2) was excavated on the assessed property in proximity to this area. No other areas of high magnetic anomaly suggestive of USTs were detected at the assessed property during the magnetic locator survey.

Test Pit Evaluation

Eight test pits (i.e., TP-1 through TP-8) were excavated on the assessed property or along property boundaries on March 29, 2000. Griffin Industrial Services, Inc. was retained by DAY to provide the necessary backhoe and operator. The test pits were excavated using a JCB Model 214 backhoe with an equipment reach of approximately twelve feet. Equipment refusal, suggestive of bedrock was encountered in each test pit at depths ranging between 11.1 feet and 12.0 feet below the ground surface.

A DAY representative visually observed the excavated and in-situ materials for evidence of suspect contamination (e.g., staining, unusual odors, etc.), and samples were collected for subsequent testing. Portions of the samples were placed in containers for possible analytical laboratory testing. The excavated material was screened with a Rae Systems model Minirae 2000 photoionization detector (PID) equipped with a 10.6 eV lamp in order to evaluate if VOCs are present in the samples. A DAY representative recorded pertinent information in a field log, whereupon portions of the information were subsequently transcribed onto test pit logs, which are included in Appendix E. The test pits were backfilled with excavated material and tamped in-place with the backhoe. No further restoration was included as part of this work.

Analytical Testing of Soil Samples

Columbia Analytical Services, Inc. (CAS), a New York State Department of Health (NYSDOH) approved laboratory, analyzed the following soil samples for the test parameters indicated:

- Sample 2236E-01 from test pit TP-1 (9') was analyzed for USEPA target compound list (TCL) and NYSDEC STARS-list volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260; NYSDEC STARS-list base/neutral semi-volatile organic compounds (SVOCs) using USEPA Method 8270; and for total petroleum hydrocarbons (TPH) using NYSDOH Method 310.13.

5.0 SUBSURFACE EVALUATION (Cont.)

- Sample 2236E-02 from test pit TP-3 (5') was analyzed for USEPA TCL and NYSDEC STARS-list VOCs using USEPA Method 8260 and for TPH using NYSDOH Method 310.13.

Findings

Fill material was observed in the test pits beginning beneath the asphalt pavement at five of the eight test pit locations. The depth to the bottom of the fill ranged between approximately 2.5 feet (TP-4) to 10.0 (TP-1 in former USTs location) feet below the existing ground surface. The fill material was observed to consist primarily of brown or black reworked soil containing lesser amounts of brick, wood, wires, metal, glass and organic material. The remaining test pits (i.e., TP-3, TP-6 and TP-7) contained indigenous soil immediately below the asphalt pavement.

Indigenous soil observed beneath the fill material or starting at the ground surface immediately beneath asphalt pavement and sub-base gravel generally consisted of a mixture of red and/or brown sands and silts, with lesser amounts of cobbles, gravel, and clay. Red brown weathered brittle siltstone (i.e., apparent bedrock) was observed beneath the soils in six of the eight test pits (i.e., bedrock was not encountered in test pits TP-6 and TP-7). With the exception of perched water in test pits TP-5 (6.5 feet below grade) and TP-6 (8.0 feet below grade), groundwater was not encountered in the test pits.

Evidence of petroleum or VOC impacted soils (i.e., gray/black stained soil, odors, elevated photoionization detector readings above ambient air background concentrations, etc.) was observed in two test pits (i.e., TP-1 and TP-3; refer to Figure 3 included in Appendix A).

- Test pit TP-1 was excavated in the area where information indicates two gasoline USTs were removed (refer to Section 2.2). Evidence of petroleum-type impacted soils were first encountered at a depth of approximately 4.0 feet below the ground surface and extended to the bottom of the test pit.

- Test pit TP-3 was excavated in proximity to an apparent drain/fill port located on the adjoining property to the south (refer to Section 3.8 and Figure 3 included in Appendix A). Evidence of petroleum-type impacted soils were encountered between approximately 4.5 to 5.5 feet below the ground surface.

Evidence of petroleum-type or VOC impacted soil was not encountered in test pits TP-2, and TP-4 through TP-8. Test pit TP-2 was excavated in proximity to a suspected gasoline UST on an adjoining property. Evidence of impacted groundwater was not encountered during the fieldwork.

A copy of the analytical laboratory report prepared by CAS for soil samples 2236E-01 and 2236E-02 is included in Appendix F. Table I, also included in Appendix F, summarizes the test results and compares the results to corresponding TCLP Alternative Soil Guidance Values as referenced in the NYSDEC's August 19992 STARS Memo #1. As shown, seven constituents were detected in sample 2236E-01 at concentrations that exceed NYSDEC TCLP alternative

5.0 SUBSURFACE EVALUATION (Cont.)

soil guidance values, and the impact was identified as gasoline. One constituent (i.e., n-butylbenzene) was detected in sample 2236E-02 at concentrations that exceeded its NYSDEC TCLP alternative soil guidance value, and the impact was identified as n-dodecane; however, CAS' case narrative indicates that this sample can tentatively be identified as impacted with mineral spirits or Stoddard solvent. [Note, Stoddard solvent is a dry cleaning solvent and dry-cleaning operations were historically conducted at the adjoining facility located south and west of the assessed property.]

Conclusions and Recommendations

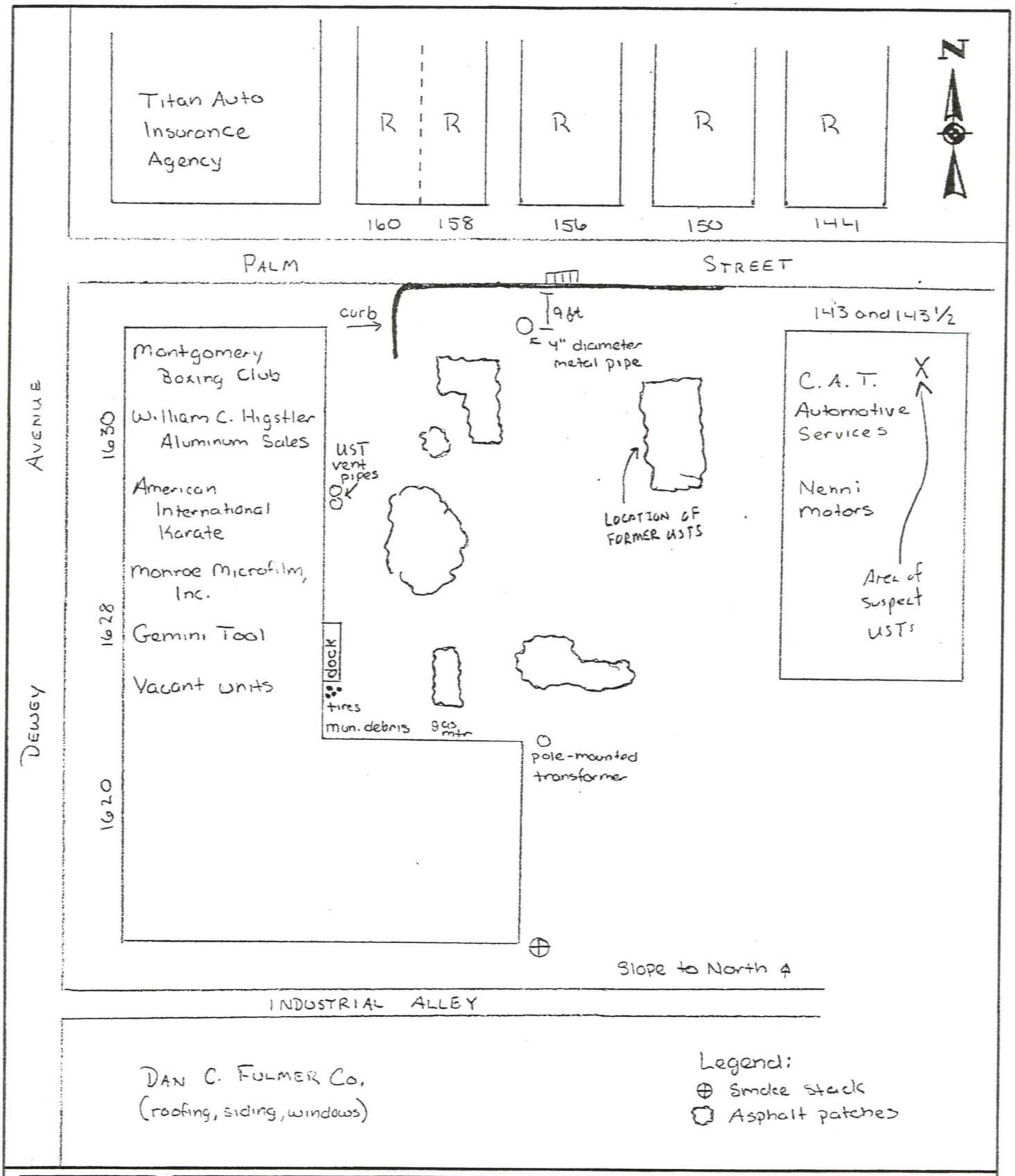
In summary, information obtained as part of the assessment indicates that two USTs were formerly located on the northeast portion of the assessed property. In addition, potential off-site sources of environmental impact to the assessed property from suspect USTs and historic operations were identified on adjoining properties located west, east, and south of the assessed property. In order to evaluate whether impacts were present on the assessed property, eight test pits (designated TP-1 through TP-8) were excavated, and subsurface conditions were observed and documented. Evidence of petroleum or VOC impact was encountered on two areas of the assessed property:

On-Site Location of Former Tanks

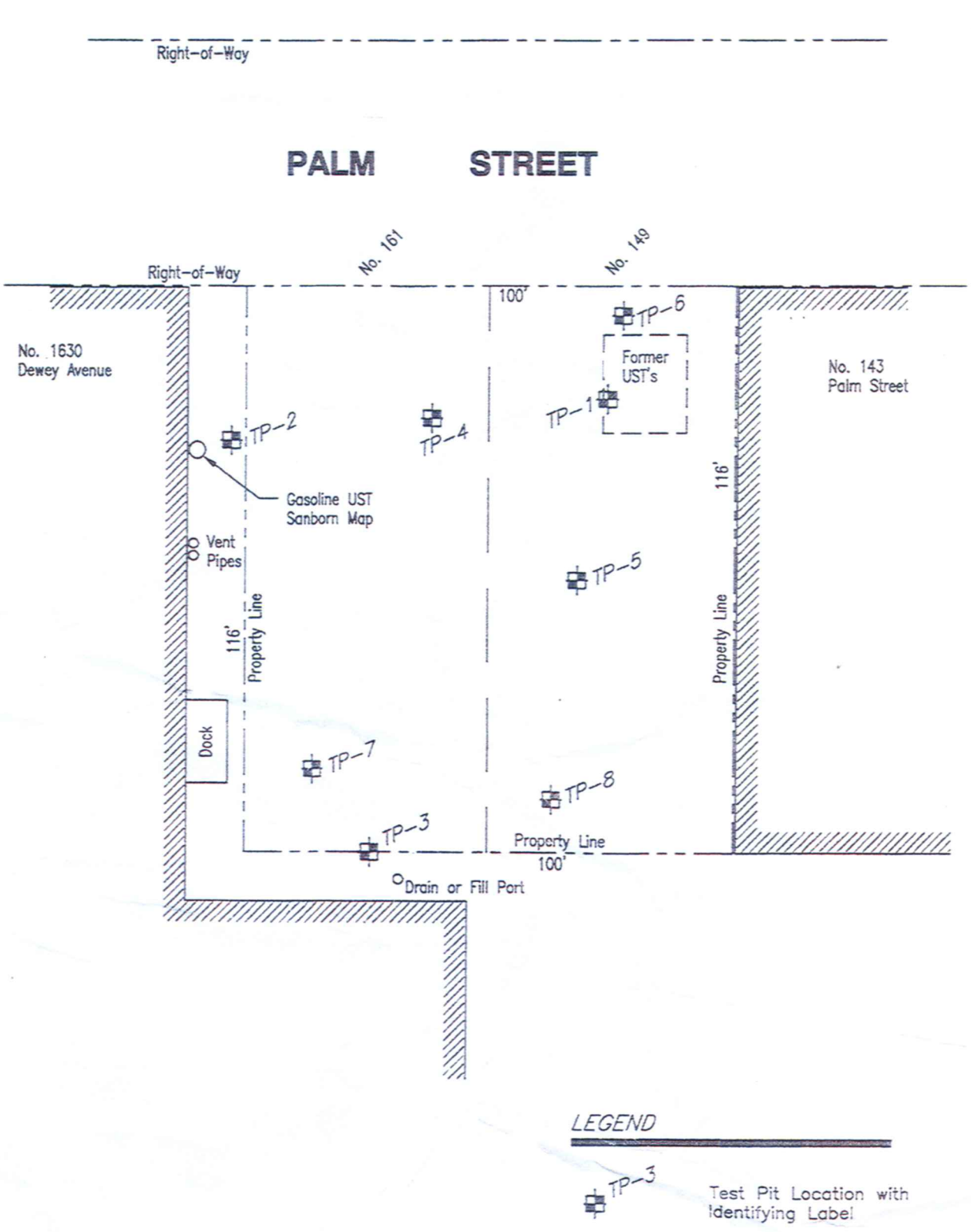
Stained soil, petroleum-type odors, and elevated photoionization detector (PID) readings above ambient air background concentrations were encountered on soil in test pit TP-1 that was partially excavated within the former on-site tank pit area. An analytical laboratory tested a sample of the impacted soil, and the test results indicate that the detected concentrations of constituents exceeded NYSDEC TCLP Alternative Soil Guidance values. Based on the subsurface conditions observed in other nearby test pits (i.e., TP-4, TP-5, and TP-6), the extent of impacted soil appears limited.

Suspect Off-Site Source of Impact

During DAY's initial site visit, an apparent drain or fill port was observed in the asphalt pavement on a portion of the adjoining property (1630 Dewey Avenue) located south of the assessed property [Note, magnetic anomalies suggestive of a buried tank were not encountered in this area using a Schoenstedt Model GA-52A magnetic locator.] As part of this assessment, a test pit (designated as TP-3) was excavated north of the apparent drain/fill port, and subsurface conditions were observed and documented (refer to Section 5.0). Stained soil, petroleum-type and/or VOC-type odors, and elevated photoionization detector readings above ambient air background concentrations were detected in this test pit in a one-foot thick layer of soil at a depth of approximately 5.0 feet below the existing ground surface. A sample of the impacted soil was tested by an analytical laboratory, and the test results indicate that the detected concentration of one constituent exceeded NYSDEC TCLP Alternative Soil Guidance values. TPH test results tentatively identified the impact as mineral spirits or Stoddard solvent [Note, Stoddard solvent is a dry cleaning solvent, and the adjoining property addressed as 1630 Dewey Avenue was formerly used as a dry cleaning operation.] Based on the subsurface conditions observed in test pit TP-3 and



PROJECT NO. ROCITY.2236E-00	PROJECT TITLE SITE # 149 and 161 Palm Street Rochester, New York	DAY ENVIRONMENTAL, INC.	DATE 3/30/00
FIGURE 2	PHASE I ASSESSMENT	ENVIRONMENTAL CONSULTANTS ROCHESTER, NEW YORK	DRAWN BY PML
SHEET 1 OF 1	DRAWING TITLE SITE SKETCH		SCALE Not To Scale



DATE 04/19/2000 DRAWN BY Tww SCALE 1" = 30'	day DAY ENVIRONMENTAL, INC. ENVIRONMENTAL CONSULTANTS ROCHESTER, NEW YORK 14623-2700	PROJECT TITLE 149 and 161 PALM STREET ROCHESTER, NEW YORK PHASE I ASSESSMENT DRAWING TITLE SITE PLAN TEST PIT LOCATIONS	PROJECT NO. ROCITY.2236E-00 FIGURE 3 SHEET 1 OF 1

APPENDIX G

DER-10 APPENDIX 3C
FISH & WILDLIFE ANALYSIS
DECISION KEY

Dewey RI WP site No. C828163

Appendix 3C Fish and Wildlife Resources Impact Analysis Decision Key	If YES Go to:	If NO Go to:
1. Is the site or area of concern a discharge or spill event?	13	2
2. Is the site or area of concern a point source of contamination to the groundwater which will be prevented from discharging to surface water? Soil contamination is not widespread, or if widespread, is confined under buildings and paved areas.	13	3
3. Is the site and all adjacent property a developed area with buildings, paved surfaces and little or no vegetation?	4	9
4. Does the site contain habitat of an endangered, threatened or special concern species?	Section 3.10.1	5
5. Has the contamination gone off-site?	6	14
6. Is there any discharge or erosion of contamination to surface water or the potential for discharge or erosion of contamination?	7	14
7. Are the site contaminants PCBs, pesticides or other persistent, bioaccumulable substances?	Section 3.10.1	8
8. Does contamination exist at concentrations that could exceed ecological impact SCGs or be toxic to aquatic life if discharged to surface water?	Section 3.10.1	14
9. Does the site or any adjacent or downgradient property contain any of the following resources? i. Any endangered, threatened or special concern species or rare plants or their habitat ii. Any DEC designated significant habitats or rare NYS Ecological Communities iii. Tidal or freshwater wetlands iv. Stream, creek or river v. Pond, lake, lagoon vi. Drainage ditch or channel vii. Other surface water feature viii. Other marine or freshwater habitat ix. Forest x. Grassland or grassy field xi. Parkland or woodland xii. Shrubby area xiii. Urban wildlife habitat xiv. Other terrestrial habitat	11	10
10. Is the lack of resources due to the contamination?	3.10.1	14
11. Is the contamination a localized source which has not migrated and will not migrate from the source to impact any on-site or off-site resources?	14	12
12. Does the site have widespread surface soil contamination that is not confined under and around buildings or paved areas?	Section 3.10.1	12
13. Does the contamination at the site or area of concern have the potential to migrate to, erode into or otherwise impact any on-site or off-site habitat of endangered, threatened or special concern species or other fish and wildlife resource? (See #9 for list of potential resources. Contact DEC for information regarding endangered species.)	Section 3.10.1	14
14. No Fish and Wildlife Resources Impact Analysis needed.		