LABELLA Associates, D.P.C.
Engineering
Architecture
Environmental
Planning

Remedial Investigation Work Plan

Location:

Former Michelsen Furniture Co. Site
182 Avenue D & 374 Conkey Avenue
Rochester, New York

Prepared for:

Urban League of Rochester Economic Development Corporation
312 State Street
Rochester, New York 14614

LaBella Project No. 214539

Revised
January 2015

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LABELLA

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1.0 INTRODUCTION

LaBella Associates, D.P.C. (LaBella) is pleased to submit this Draft Remedial Investigation Work Plan (RIWP) to characterize soil and groundwater conditions at the Former Michelsen Furniture Co. Site, located at 182 Avenue D and 374 Conkey Avenue in the City of Rochester, Monroe County, New York, herein after referred to as the "Site". A Site Location Map is included as Figure 1. LaBella is submitting this Draft RIWP on behalf of the Urban League of Rochester Economic Development Corporation (ULREDC).

ULREDC intends to investigate the nature and extent of environmental impacts at the Site. As such, ULREDC has applied to enter the Site into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) to conduct a Remedial Investigation (RI).

2.0 SITE DESCRIPTION AND HISTORY

The Site consists of two (2) contiguous tax parcels encompassing approximately 0.62 acres. The Site location and surrounding area are shown of Figure 2. The Site is located in a primarily residential urban neighborhood in the City of Rochester. It is bounded by Avenue D to the south, Conkey Avenue to the east, residential property to the north, and the El Camino Trail and City of Rochester Avenue D Recreation Center to the east.

Parcel 1, addressed 182 Avenue D, encompasses approximately 0.4 acres and is currently owned by John Dubickas, Judith Maier & Lawrence Lewinson. Parcel 1 is improved with an approximately 44,000 square foot, four story brick warehouse building. Parcel 2 is a vacant lot addressed 374 Conkey Avenue. Parcel 2 encompasses approximately 0.22 acres and is currently owned by the City of Rochester. ULREDC intends to purchase Parcel 1 and the City of Rochester intends on transferring ownership of Parcel 2 to ULREDC.

The Site building is on the National Register of Historic Places. The proposed redevelopment at the Site consists of the adaptive reuse of the existing Site building into a forty (40) unit residential apartment building. The Site was initially operated by the George J. Michelsen Furniture Company from at least 1918 through 1954 and was utilized for furniture manufacturing. Based on a review of historical street directories, additional operators at the Site in the 1950s included Columbia Carpet Co., Rice Tool & Die Co. and General Fabricators Co. Parcel 2 historically contained a railroad spur that serviced the Michelsen Building. The Site has been utilized primarily for warehouse and distribution from the 1960's to present. Allied Action, Inc. currently operates the Site as a small electronics warehouse and distribution facility.

The following environmental investigations have been performed at the Site:

- *Phase I Environmental Site Assessment, 182 Avenue D, Rochester, NY, LaBella Associates, P.C., September 2011* – LaBella performed this assessment on behalf of Edgemere Development, Inc., a housing development firm assisting ULREDC with the redevelopment of the Site. The Phase I identified the following Recognized Environmental Conditions at the Site:
    - The historical presence of dry cleaners at adjacent properties to the east and west and

potential for impacts to the Site.

- The potential presence of orphan underground storage tanks at the Site. Based on City of Rochester Building Department records a permit was issued in 1965 for the installation of two (2) 3,000 gallon fuel oil tanks. Records for removal of the tanks were not available. Insufficient information was available relative to the location of the tanks on the Site or if they were aboveground or belowground tanks. In addition, during a site visit a product level gauge was observed in the boiler room of the Site building. A copper line connected to the gauge and potential supply lines observed to penetrate the northern exterior wall of the building.

- *Phase II Environmental Site Assessment, 182 Avenue D, Rochester, NY, LaBella Associates, P.C., November 2012* – This investigation consisted of the advancement of six (6) direct push soil borings, installation of two shallow overburden groundwater monitoring wells, and collection and laboratory analysis of soil and groundwater samples. The findings of the investigation identified petroleum impacts proximate the northern property line of Parcel 2. However, given the lack of an access agreement at that time with the City of Rochester, the investigation could not continue to Parcel 2. Additionally, chlorinated volatile organic compounds (CVOCs) were identified in soil and groundwater at Parcel 1. At the time of the investigation it could not be determined if the CVOCs detected at the Site were attributable to historical Site operations or if they were from an off-site source.

- *Additional Subsurface Investigations, 182 Avenue D and 374 Conkey Avenue, Rochester, NY, LaBella Associates, D.P.C, January & March 2014* – LaBella performed additional investigation activities at both Site parcels in January and March 2014. It should be noted that a report has not been generated relative to these activities, however copies of all figures, data summary tables, laboratory reports, and field logs are included in the BCP Application.

  The investigations consisted of additional soil borings and overburden monitoring wells, advancement of test pits and installation of one bedrock groundwater monitoring well. The findings of the test pit investigation indicated that USTs were not present, and the approximate extent of petroleum impacts was identified. Laboratory analysis of soil samples from Parcel 2 indicate that petroleum related VOCs and semi-volatile organic compounds (SVOC) are present in soil at concentrations below NYSDEC Commissioner Policy 51 (CP-51) and 6 NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives (SCOs). Laboratory analysis of groundwater samples indicated the presence of significant concentrations of CVOCs (in particular trichloroethene (TCE) in overburden and bedrock groundwater. The findings of investigations performed to date are indicative of a release in the vicinity of the facility loading dock and ramp into the Site building basement. However, additional investigation is required to refine the conceptual site model, including further delineation of this potential source area and identification of other potential on-site sources of CVOC impacts.

Previous investigation locations are depicted on Figure 3. Laboratory analysis of soil and groundwater samples collected during previous investigations is summarized on Tables 1 through 4.

Summary of Geologic and Hydrogeologic Conditions

Based on observations from previous investigations, overburden soils at the Site consist generally of silt with varying amounts of sand and gravel overlying clay. Groundwater is present in overburden soil at a depth of approximately 8 to 9 feet below ground surface (bgs). Overburden groundwater flows in a south-southwesterly direction, towards Avenue D. A groundwater contour map is attached as Figure 4.

Bedrock is encountered at the Site at depths of approximately 14 to 15 feet bgs. Bedrock at the Site consists of the Upper Silurian Decew Dolostone. A rock core was collected during installation of bedrock monitoring well BW-01. Bedrock from the overburden contact at 15.5 feet bgs to a depth of approximately 26 feet bgs consisted of gray/olive dolostone with numerous horizontal fractures. Several vugs and minor fossilization was observed in the rock core as well.

3.0 SUMMARY OF AREAS OF CONCERN

Based on the information obtained from the previous environmental investigations detailed in Section 2.0, there appear to be three (3) Areas of Concern (AOCs) that should be evaluated as part of the RI. A brief summary of each AOC is presented below and the approximate AOC locations are depicted on Figure 5.

- **AOC #1: Potential CVOC Source Area**

  Previous investigations have identified the vicinity of the Site building loading dock and ramp to the basement as a potential source area for CVOCs present in soil and groundwater at the Site. The full extent of CVOC impacts in soil in this area is not known and requires additional delineation.

- **AOC #2: CVOCs in Groundwater**

  CVOCs are present in groundwater at the Site. Additional investigation is required to fully delineate the extent of groundwater contamination at the Site and determine the potential for off-site migration [Note: AOC #2 not depicted on Figure 5].

- **AOC #3: Potential Vapor Intrusion Concern**

  Given the presence of both petroleum and chlorinated VOCs in soil and groundwater beneath the Site building, the potential exist for a vapor intrusion concern at the Site. Given the findings of environmental investigations performed to date, the proposed development includes installation of a sub slab depressurization system to address the potential for vapor intrusion. In addition, the proposed development includes conversion of the basement to a parking garage. As such, the design includes ventilation of the underground parking garage at a rate of approximately 4,650 cubic feet per minute (CFM), based on the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) recommended minimum rate of 0.75 CFM per square foot. However, data is not available documenting current concentrations of VOCs in sub slab vapor or indoor air.

4.0 OBJECTIVES, SCOPE AND RATIONALE

The objectives of this RIWP are to evaluate the above AOCs in order to determine the extent of remedial actions required (if any) at the Site. The investigation work will include evaluating the property boundaries, conducting a qualitative exposure assessment for actual or potential exposures to contaminants at the Site and/or emanating from the Site, and producing data that will support the development of remedial actions (if any are warranted).

Based on the nature of the work, it is necessary to conduct an iterative investigation process. Specifically, the findings of the work presented in this RIWP may warrant additional delineation in order to define the

nature and extent of contamination in select areas where impacts are identified above Standards, Criteria and Guidance (SCGs). In this occurrence, addendum work plans may be submitted to NYSDEC for review and approval in order to determine the nature and extent of all impacts above SCGs.

The RIWP presents a phased approach with each Task providing data to guide remaining Tasks. The sampling methodologies and locations are generally defined herein; however, actual sampling methodologies and locations may vary depending on accessibility, underground utilities and data obtained in previous tasks. NYSDEC will be contacted for approval prior to varying any sampling methodology or location. The current scope of work is based on previously gathered analytical data; information previously gathered regarding historical operations conducted at the Site and the project objectives.

The RI work will be completed in general accordance with NYSDEC Program Policy *DER-10 / Technical Guidance for Site Investigation and Remediation* dated May 3, 2010 (DER-10).

5.0 REMEDIAL INVESTIGATION WORK

The scope of remedial investigation work is provided in this section. Appendix 4 (Quality Control Program) supplements the information provided below and includes important details concerning field activities including boring and well installations, sample collection, custody, sample handling, logs, notebook and photographic documentation, use and calibration of field instruments, decontamination, and other items.

5.1 Field Activities Plan

The field activities to be completed as part of the RIWP have been separated into five (5) tasks and are presented below. A list with contact information of the personnel involved with the project is included in Appendix 1. Qualifications for the personnel are also included.

During all ground intrusive work conducted at the Site, air monitoring will be conducted in accordance with the Site Specific Community Air Monitoring Plan (CAMP). A copy of this plan is included as Appendix 2.

5.1.1 Sampling Parameters from AOCs

The protocol to determine the appropriate parameters for soil, groundwater, soil vapor and indoor air samples collected as part of the RI are identified below. These sampling protocols will be implemented unless specific sampling parameters are identified in the specific Tasks.

Subsurface Soil Sampling

Every test boring completed as part of this RI will have at least one soil sample submitted for laboratory testing. Soil samples collected will be analyzed for USEPA Target Compound List (TCL) VOCs plus 10 Tentatively Identified Compounds (TICs) using USEPA Method 8260. In addition, two (2) soil samples collected from AOC#1, two (2) soil samples collected from AOC #3 (i.e., from beneath the Site building) and four (4) soil samples collected from the area of previously identified petroleum contamination north of the Site building will be submitted for laboratory analysis of the full suite of parameters, which in addition to VOCs include the following:

- TCL SVOCs plus 20 TICs using USEPA Method 8270;
- Target Analyte List (TAL) Metals using USEPA Methods 6010 and 7471;
- Total cyanide using USEPA Method 9012;
- Pesticides using USEPA Method 8081; and
- PCBs using USEPA Method 8082.

In the event that two apparently discrete sources are identified within the same boring or test pit, a sample of each 'worst-case' source will be collected/analyzed in accordance with the aforementioned laboratory sampling protocol.

If no evidence of impairment is identified in a test boring, then one soil sample will be collected from the interval immediately above the water table or a confining substrate layer and submitted for laboratory analysis.

Each soil sample collected for laboratory analysis will be labeled and preserved in accordance with Sections 5 and 7 of the Quality Control Plan (QCP) included as Appendix 3. Laboratory Quality Assurance/Quality Control (QA/QC) sampling will be performed in accordance with Section 5.2.

Groundwater Sampling

Currently, low-flow sampling methods are proposed for groundwater sample collection as part of the RI. Groundwater samples will be collected using low-flow sampling techniques in accordance with USEPA Region 1 Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, Revised January 2010. The samples will be analyzed for TCL VOCs plus 10 TICs using USEPA Method 8260. In addition, two (2) groundwater samples collected from AOC#1, two (2) groundwater samples collected from AOC #3 (i.e., from beneath the Site building) and one (1) groundwater sample collected from the area of previously identified petroleum contamination north of the Site Building will be submitted for laboratory analysis of the full suite parameters. Refer to Task 3 for specifics.

Each groundwater sample collected for laboratory analysis will be labeled and preserved in accordance with Task 3 of this RIWP and with Sections 9 and 13 of the QCP included as Appendix 4. Laboratory Quality Assurance/Quality Control (QA/QC) sampling will be performed in accordance with Section 5.2.

Sub Slab Vapor/Indoor Air Sampling

Each sub slab vapor and indoor air sample will be collected in 6-liter stainless steel Summa canisters and analyzed for VOCs using USEPA Method TO-15 with a minimum detection limit of 1µg/m3.

Surface Soil Sampling

Given the nature of the planned redevelopment at the Site it is likely that all soils at the Site will be below buildings, parking lot or landscape features subsequent to construction. In the event that soil remains at the surface subsequent to construction soil, samples will be collected. All samples collected will be submitted for laboratory analysis for the full suite of parameters. The number of samples collected will be based on the area of surface soil remaining to a depth of 2 feet below the surface in accordance with DER-10 and with NYSDEC concurrence.

5.1.2 RI Tasks

Task 1: Utilities Stakeout

Dig Safely New York will be contacted to initiate a utilities stakeout at the entire Site to locate any subsurface utilities in the areas in which subsurface assessment will take place. In the event that subsurface testing locations need to be adjusted due to the presence of underground utilities, the NYSDEC will be contacted to review these adjustments.

Task 2: Soil Borings, Sampling, & Analysis

As part of the overburden soil investigation, soil-boring data will be collected for the geologic characterization of the Site and to allow further delineation of contamination, horizontally and vertically. Soil borings will be completed in accordance with Section 6 of the QCP included as Appendix 3. To implement the soil borings at the Site, the following will be completed:

- Currently, twenty five (25) soil borings are proposed to be advanced at the Site. Proposed boring locations (including locations where groundwater monitoring wells are to be installed as part of Task 3 below) are depicted on Figure 6.
- Borings will be advanced with a direct push sampling system (e.g., Geoprobe®). The use of direct push technology allows for rapid sampling, observation, and characterization of overburden soils. The Geoprobe® utilizes a four-foot MacroCore® sampler, with disposable polyethylene sleeves. Soil cores will be retrieved in four-foot sections, and can be easily cut from the polyethylene sleeves for observation and sampling.
- Borings will be advanced to equipment refusal.
- The drilling equipment which comes into contact with soil (e.g., core barrels, drilling rods, split spoon samplers, etc.) will be required to be decontaminated prior to use, including an alconox and potable water wash followed by a potable water rinse. In between each boring, decontamination procedures will be repeated. See Section 12 of the QCP for additional details regarding decontamination procedures.
- Soils from the borings will be continuously screened in the field for visible impairment, olfactory indications of impairment, evidence of NAPLs, and/or indication of detectable VOCs with a PID collectively referred to as "evidence of impairment." Field screening (visual & olfactory observation, PID readings, etc.) will be recorded on a soil-boring log (or 'PID Log') and will be included in the Remedial Investigation Report.
- Soil Boring Logs will be completed and include soil descriptions, soil boring numbers and locations, PID readings, etc. Soil Boring Logs will be generated by a QEP or an individual working under the direct supervision of a QEP and will be included in the RI Report. If appropriate based on observed conditions, a soil boring photo log with pictures of select soil profiles from individual soil borings will be included in the RI report.
- At least one (1) soil sample will be collected from each soil boring. The soil-sampling program will be based on the protocols identified at the beginning of this Section. As previously stated, the RI will be an iterative process and additional sampling may be warranted based on the initial sampling work in order to define the nature and extent of impacts.
- Soil generated during soil sampling activities will be containerized in 55-gallon drums,

characterized, and disposed of off-Site in accordance with applicable regulations. See Section 11 of the QCP for additional details regarding the management of investigation-derived wastes at the Site.

Task 3: Groundwater Investigation, Sampling, and Analysis

This task includes the installation, development and sampling of groundwater monitoring wells. The current proposed locations of groundwater monitoring wells are provided on Figure 6.

As part of this task, the following work will be implemented:

Installation of Overburden Groundwater Monitoring Wells Using Direct Push Drilling

Overburden monitoring located in the basement of the Site building will be installed with direct push drilling methods. Four (4) overburden groundwater monitoring wells are proposed for the Site. At each overburden monitoring well location, overburden soils will be collected using MacroCore® samplers from the ground surface to equipment refusal (i.e., assumed bedrock). Soil will be screened in the field for "evidence of impairment" (as defined in Task 2 above).

Subsequent to collection of soil samples, overburden monitoring wells will be installed in the boreholes. Each well will be constructed with 5 to 10 feet. of 1-inch Schedule 40 0.010-inch machine slotted PVC well screen connected to an appropriate length of riser to complete the well. The annulus around the screen section will be sand packed with quartz sand to approximately 1 to 2 feet above the screen section. An approximately one foot bentonite seal will be placed above the sand pack. Each well will be completed with a flush mount well cover. Additional details on the installation of groundwater monitoring wells are included in Section 6 of the QCP included as Appendix 4.

As indicated in Task 2, soil generated during drilling activities will be containerized in 55-gallon drums, characterized, and disposed of off-Site in accordance with applicable regulations. See Section 11 of the QCP for additional details regarding the management of investigation-derived wastes at the Site.

Installation of Interface Groundwater Monitoring Wells

Five (5) interface monitoring wells are proposed for the Site. Proposed interface groundwater monitoring well locations are depicted on Figure 2. The final location of interface monitoring wells will be adjusted based on the findings of Tasks 2 and in consultation with NYSDEC. Completion of the interface groundwater monitoring wells will include the following;

- Given that interface monitoring wells will be installed subsequent to activities covered in Task 2 above, overburden soil samples are not anticipated during installation of interface monitoring wells.

- Hollow stem augers will be advanced through the overburden. Once competent bedrock is encountered, rotary drilling will commence into the bedrock to a depth of approximately five (5) feet into competent rock. Additional details on bedrock drilling are provided in the Quality Control Plan in Appendix 4 Section 5.1.3 Drilling Technique: Drill Rig Advanced Borings.

- Subsequent to completion of coring, groundwater monitoring wells will be installed in the

boreholes. Each well will be constructed with 10 feet. of 2-inch Schedule 40 0.010-inch machine slotted PVC well screen so as to straddle the bedrock/overburden contact and be connected to an appropriate length of riser to complete the well. The annulus around the screen section will be sand packed with quartz sand to approximately 1 to 2 feet above the screen section. An approximately one foot bentonite seal will be placed above the sand pack. Each well will be completed with a flush mount well cover. Additional details on the installation of groundwater monitoring wells are included in Section 6 of the QCP included as Appendix 4.

- All rock cores recovered will be logged by a geologist, labeled, photographed, and stored in wooden core boxes. The photographs will be submitted as part of the completed boring logs. The cores will be stored by the firm until the project is completed or for at least one year. Drilling logs will be prepared by an experienced geologist or geotechnical engineer, who will be present during all drilling operations. One copy of each field boring and well construction log, including color photographs of the rock core, if encountered, and groundwater data, will be submitted as part of the RI report. The RQD value shall be calculated for each 5-foot section. Additional details on the installation and logging of bedrock cores can be found in Sections 5 and 6 in the QCP included as Appendix 4.

- Soil generated during drilling activities will be containerized in 55-gallon drums, characterized, and disposed of off-Site in accordance with applicable regulations. See Section 10 of the QCP for additional details regarding the management of investigation-derived wastes at the Site.

Installation of Bedrock Groundwater Monitoring Wells

Three (3) bedrock monitoring wells are proposed for the Site. Proposed bedrock groundwater monitoring well locations are depicted on Figure 2. The final location of bedrock monitoring wells will be adjusted based on the findings of Tasks 2 and 3 and in consultation with NYSDEC. Completion of the bedrock groundwater monitoring wells will include the following;

- Given that bedrock monitoring wells will be installed subsequent to activities covered in Task 2 above, overburden soil samples are not anticipated during installation of bedrock monitoring wells.

- Once competent bedrock is encountered, rotary drilling will commence into the bedrock. Initially, an approximately two-foot “socket” will be drilled into the bedrock and a permanent steel casing extending from the ground surface into the two-foot bedrock boring will be placed and grouted to the surface. This grout will set for a minimum of 24-hours. After 24-hours, the bedrock drilling may continue until the bedrock boring is completed to a total depth of 10-feet into competent bedrock. Additional details on bedrock drilling are provided in the Quality Control Plan in Appendix 4 Section 5.1.3 Drilling Technique: Drill Rig Advanced Borings.

- All rock cores recovered will be logged by a geologist, labeled, photographed, and stored in wooden core boxes. The photographs will be submitted as part of the completed boring logs. The cores will be stored by the firm until the project is completed or for at least one year.

Drilling logs will be prepared by an experienced geologist or geotechnical engineer, who will be present during all drilling operations. One copy of each field boring and well construction log, including color photographs of the rock core, if encountered, and groundwater data, will be submitted as part of the RI report. The RQD value shall be calculated for each 5-foot section. Additional details on the installation and logging of bedrock cores can be found in Sections 5 and 6 in the QCP included as Appendix 4.

- Soil generated during drilling activities will be containerized in 55-gallon drums, characterized, and disposed of off-Site in accordance with applicable regulations. See Section 10 of the QCP for additional details regarding the management of investigation-derived wastes at the Site.

Development of Groundwater Monitoring Wells

Initially, each monitoring well will be developed by removing the approximate volume of water introduced during drilling (if any) and an additional five (5) well volumes. Well development will be performed using dedicated bailers and/or pumping equipment (depending on volumes), and will continue until groundwater turbidity reaches 50 National Turbidity Units (NTUs), or lower. In the event that 50 NTUs is not reached after removing a reasonable number of well volumes (10), the NYSDEC will be contacted to request ceasing development. If dedicated equipment is not used, then the equipment will be decontaminated between each well (alconox wash with potable water rinse). If the NYSDEC Project Manager agrees that removal of this volume of water is impractical, then LaBella will work with NYSDEC to develop an alternate well development protocol. If necessary, the groundwater sampling schedule will also be adjusted. Any changes to the well development protocol or the sampling schedule will be documented in the monthly progress reports. Well development details are included in Section 6 of the QCP included as Appendix 4.

Groundwater generated during well development activities will be containerized in 55-gallon drums, characterized, and disposed of off-site in accordance with applicable regulations.

Low Flow Sampling of Groundwater Monitoring Wells

At least 2 weeks after development, groundwater samples will be collected from each monitoring well installed as part of the RI. Static water level (SWL) measurements will be collected from the wells immediately prior to purging. Low flow sampling of the monitoring wells will occur in order to minimize groundwater drawdown and to obtain a representative sample of groundwater conditions. In order to accomplish this task, the following steps will be taken:

1. Low flow purging of the monitoring wells will include collection of water quality indicator parameters. Water quality indicator parameters will be recorded at five (5)-minute intervals during the purging of the well. These water quality indicator parameters will include:

- Water Level Drawdown
- Temperature
- pH
- Dissolved Oxygen
- Specific Conductance
- Oxidation Reduction Potential

- Turbidity

2. Groundwater sampling will commence once the groundwater quality indicator parameters have stabilized for at least three (3) consecutive readings for the following parameters:

- Water Level Drawdown <0.3'
- Temperature - +/- 3%
- pH - +/- 0.1unit
- Dissolved Oxygen - +/-10%
- Specific Conductance - +/-3%
- Oxidation Reduction Potential - +/-10 millivolts
- Turbidity - +/-10% for values greater than 1 NTU

4. Each monitoring well will be sampled as indicated at the beginning of this Section. In the event that recoverable groundwater will not be adequate for all testing parameters for wells where the full suite of parameters are to be analyzed for, samples will be collected based on the following hierarchy – 1) VOCs, 2) SVOCs, 3) Metals, 4) PCBs, 5) Pesticides.

5. Approximately three (3) months after the initial sampling event, a second round of groundwater samples will be collected from the monitoring wells installed as part of the RI. [*Note: In the event that minimal or no impacts are identified in the first round of sampling, NYSDEC may be petitioned to reduce the sampling parameter list.*]

Additionally, the following items will be completed as part of Task 3:

- Monitoring well construction logs, monitoring well development logs and groundwater sampling logs will be generated by a QEP or an individual working under the direct supervision of a QEP and will be included in the RI Report.

- Laboratory Quality Assurance/Quality Control (QA/QC) sampling will be performed in accordance with Section 5.2. An analytical data package for the first round of groundwater monitoring data will be prepared and presented to the NYSDEC.

- Groundwater contour mapping will be developed using the SWLs collected immediately prior to the two (2) groundwater sampling rounds. This mapping will be included in the Final RI report.

- Each of the monitoring wells will be surveyed for elevation. In addition, the wells will be located using a GPS GeoXT with GeoBeacon. See Section 6.1.9 of the QCP for additional survey information.

Task 4: Vapor Intrusion Evaluation

Given the proposed sub slab depressurization system and basement garage ventilation included in the proposed Site redevelopment, minimum sub slab and indoor air sampling is proposed. Three (3) sub slab and one (1) indoor air sample are proposed as part of the RI. Proposed sample locations are depicted on Figure 6.

The installation and sampling of the sub slab vapor points will be completed in general accordance with the procedures provided in the *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006. The applicable procedures to be implemented as part of this investigation are

summarized below:

- Sub slab vapor probe installations will be temporary. A vacuum will not be used to remove drilling debris from the sampling port. Sub-slab implants or probes will be constructed in the same manner at all sampling locations to minimize possible discrepancies. The following procedures will be utilized.

  - Temporary probes will be constructed with inert tubing (e.g., polyethylene stainless steel, nylon, Teflon®, etc.) of the appropriate size (typically 1/8 inch to 1/4inch diameter), and of laboratory or food grade quality.
  - Tubing will not extend further than 2-inches into the sub-slab material.
  - The implant will be sealed to the surface with non-VOC-containing and non-shrinking products for temporary installations (e.g., perma-gum grout, melted beeswax, putty, etc.).

- Sub-slab soil vapor samples will be collected in the following manner:

  - After installation of the probes, one (1) to three (3) volumes (i.e., the volume of the sample probe and tube) will be purged prior to collecting the samples to ensure samples collected are representative.
  - Flow rates for purging will not exceed 0. 2 liters per minute to minimize the ambient air infiltration during sampling.
  - During purging of the sample point, a tracer gas evaluation will also be conducted to verify the integrity of the sub-slab soil vapor probe seal. An appropriate tracer gas will be used (e.g., helium). An enclosure will be constructed around the soil gas sampling point (e.g., plastic bag, plastic bucket, etc.) and sealed around the sample point tubing. Subsequently, the enclosure will be enriched with the tracer gas. The purged soil gas will then be tested for the tracer gas by an appropriate meter (i.e., a meter capable of measuring the concentration of 10% or greater, the sample point will be resealed and retested prior to sampling.
  - Sub-slab vapor samples will be collected over the same general time period and in the same manner at all locations to minimize possible discrepancies. Sub-slab vapor samples will be collected using six (6) Liter Summa canisters equipped with pre-calibrated, laboratory supplied flow regulators set for a sampling time of eight (8) hours. The Summa canisters will be certified clean by the laboratory. The Summa canister will be connected to the sub-slab soil vapor sampling point via inter tubing (e.g., polyethylene, stainless steel, or Teflon®).

- One (1) ambient air sample will be collected as indicated on Figure 6. The ambient air sample will be collected from a height of approximately three (3) feet above the floor. The sample will be collected concurrent with the sub slab samples. The ambient air sample will be collected using a six (6) Liter Summa canister equipped with pre-calibrated, laboratory supplied flow regulator set for a sampling time of eight (8) hours. The Summa canister will be certified clean by the laboratory.

- Subsequent to completing the sub slab vapor and ambient air sampling, the samples will be sent under chain of custody control to the laboratory for testing. The samples will be tested for VOCs using USEPA Method TO-15 with a minimum detection limit of 1 $\mu g/m^3$.

- The following actions will be documented and the NYSDOH Indoor Air Quality Questionnaire and Building Inventory form will be completed during sampling to provide for discussion in the

RI Report and aid in the interpretation of the sampling results:

- Historic and current storage and uses of volatile chemicals will be identified, especially if sampling within a commercial or industrial building (e.g., use of volatile chemicals in commercial or industrial processes and/or during building maintenance).
- The use of heating or air conditioning systems during sampling will be noted.
- Floor plan sketches will be drawn that include the floor layout with sampling locations, chemical storage areas, garages, doorways, stairways, location of basement sumps or subsurface drains and utility perforations through building foundations, HVAC system air supply and return registers, compass orientation(north), footings that create separate foundation sections, the physical condition of the floor and building, and any other pertinent information.
- Outdoor plot sketches will be drawn that include the building site, area streets, outdoor air sampling locations (if applicable), compass orientation (north), and paved areas.
- Weather conditions (e.g., precipitation and indoor and outdoor temperature) and ventilation conditions (e.g., heating system active and windows closed) will be reported.
- Any pertinent observations, such as spills, floor stains, smoke tube results, odors and readings from field instrumentation (e.g., vapors via PID, ppbRAE, etc.), will be recorded.

- The field sampling team will maintain a sample log sheet summarizing the following

  - Sample identification.
  - Date and time of sample collection.
  - Sampling depth.
  - Identity of samplers.
  - Sampling methods and devices.
  - Soil vapor purge volumes.
  - Volume of soil vapor extracted.
  - Vacuum of canisters before and after samples are collected.
  - Apparent moisture content (dry, moist, saturated, etc.) of the sampling zone.
  - Chain of custody protocols and records used to track samples from sampling point to analysis.

Task 5: Qualitative Exposure Assessment

The Qualitative Exposure Assessment will be performed in accordance with Section 3.3 and Appendix 3B of DER-10. This Qualitative Exposure Assessment will evaluate whether potential or completed exposure pathways exist. This assessment will be based on the soil and groundwater sampling data generated during the RI work.

The Qualitative Exposure Assessment will include the following areas of evaluation:

- Source Areas – AOCs with identified impacts will be included as part of the exposure assessment.

- Fate & Transport – The property boundary data will be evaluated for potential off-site migration via soil, groundwater, and/or soil gas. In the event that this data indicates the likeliness of off-site migration, one (1) groundwater monitoring well will be installed and as described in Task 3 to confirm that off-site migration is occurring. The type of groundwater monitoring well (i.e., overburden, interface, bedrock) will be determined based on data collected in Tasks 2 and 3 with

concurrence of NYSDEC.

- Route of Exposure – The results of Site sampling will be interpreted to determine if contaminant concentrations are at levels that have the potential to be inhaled or ingested.

- Receptor Population – The Site will be evaluated to determine the size and makeup of potential receptors both on-site and off-site locations downgradient of the Site. These receptors include construction workers, utility workers, residents, neighbors, etc.).

- Future use of the Site – The known or potential future use of the Site will be evaluated.

- Given the urban nature of the Site, a Fish and Wildlife Resources Impact Analysis (FWRIA) will not be performed as part of the RI.

5.2 Quality Assurance/Quality Control Plan

Activities completed at the Site will be managed under LaBella's Quality Control Program, which is included in Appendix 3. Laboratory QA/QC sampling will include analysis of sample blanks as follows: one trip blank and one routine field blank for each sampling methodology (e.g., soil borings) and matrix type (i.e., soil, groundwater, soil vapor). The blanks will be provided at a rate of one per 20 samples collected for each parameter group, or one per shipment, whichever is greater. Additionally, one (1) Matrix Spike/Matrix Spike Duplicate (MS/MSD) and one (1) duplicate sample will be collected and analyzed for each twenty samples collected for each parameter group, or one per shipment, whichever is greater. Duplicate samples will be submitted to the laboratory as blind duplicates. The MS/MSD and duplicate samples will be analyzed for the same parameters as that of the field samples.

Table 5 – QA/QC Sampling Plan

QA/QC Sampling Plan				
Matrix	**Trip Blanks**	**Field Blanks**	**Duplicates**	**MS/MSD**
Soil	1 per 20 samples, or one per shipment	1 per 20 samples, or one per shipment	1 per 20 samples, or one per shipment	1 per 20 samples, or one per shipment
Groundwater	1 per 20 samples, or one per shipment	1 per 20 samples, or one per shipment	1 per 20 samples, or one per shipment	1 per 20 samples, or one per shipment

The samples will be delivered under Chain of Custody procedures to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory. The laboratory will provide a NYSDEC ASP Category B Deliverables data package for all samples except the TO-15 samples (indoor air,, sub-slab soil vapor). For the TO-15 samples, the laboratory will provide a data package using the ASP Category B format. A DUSR will be completed for all ASP-B and ASP-B format laboratory data packages per DER-10. The DUSRs will include the laboratory data summary pages showing corrections made by the data validator and each page will be initialed by the data validator. The laboratory data summary pages will be included even if no changes were made.

5.3 Electronic Data Submission

All laboratory data will be submitted in an electronic data deliverable (EDD) compatible with the database software application EQuISTM from EarthSoft® Inc.

6.0 HEALTH AND SAFETY PLAN

A Site specific Health and Safety Plan (HASP) has been developed for the Site and is included in Appendix 4. LaBella will ensure that all contractors working at the Site comply with a suitable HASP as well. A copy of each contractor's HASP will be submitted to NYSDEC prior to mobilization to the Site.

7.0 REPORTING AND SCHEDULE

Subsequent to completing the work outlined above, a Remedial Investigation Report will be developed in general accordance with NYSDEC DER-10. The anticipated schedule for the work to be completed is included in Appendix 5. This schedule is dependent on NYSDEC approvals and does not account for potential delays due to public comments, weather conditions, etc.

Monthly Progress Reports will be submitted by the 10th day of each month as described in the Brownfield Cleanup Agreement for this Site. The progress reports will include all preliminary analytical data and validated data that are received prior to the 10th of each month. Additionally, the validated data will be provided no more than two (2) months after the preliminary data.

8.0 CITIZEN PARTICIPATION ACTIVITIES

A citizen participation plan (CPP) has been developed for the project under separate cover and is on file at the document repositories. The CPP activities that will be conducted throughout the RI work include:

- Maintaining and updating the Brownfields Site Contact List;
- Maintaining and updating documents in the specified document repositories (as indicated in the CPP);
- Prepare and distribute NYSDEC approved fact sheets;
- Assist and participate in public meetings (at the request of the NYSDEC);
- Provide analytical results or other information to all site tenants upon request or as required by applicable law;
- Participate in weekly meetings with the monthly progress meetings (or teleconferences) with the NYSDEC to discuss progress;
- Other activities upon NYSDEC request.

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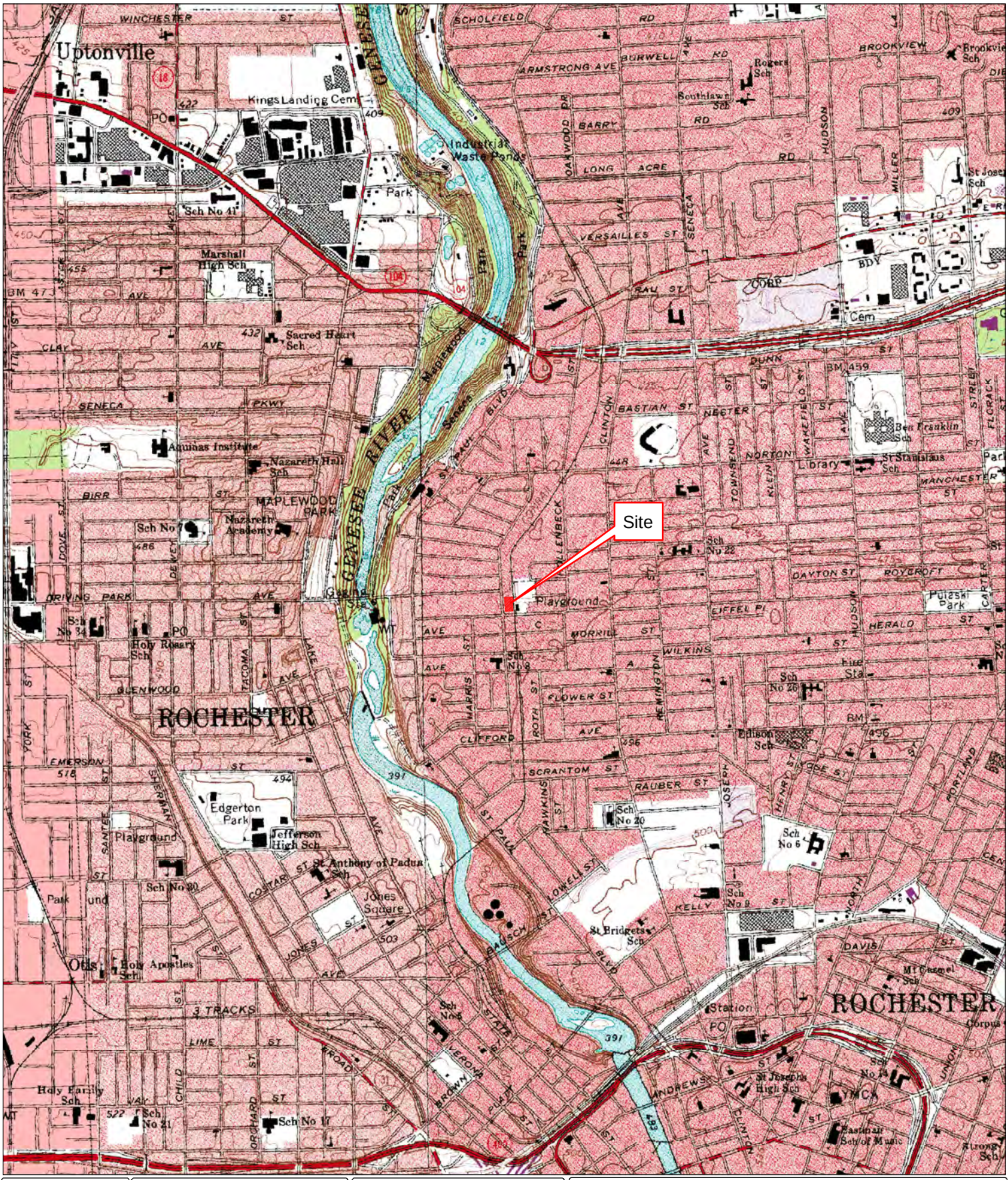
FIGURES



PROJECT/DRAWING NUMBER 214539 FIGURE 1	DRAWING TITLE SITE LOCATION MAP ISSUED FOR: DRAFT DESIGNED BY: DKE DRAWN BY: DKE REVIEWED BY: DATE: 06/18/2014	PROJECT/CLIENT BCP Remedial Investigation Work Plan Former Michelsen Furniture Co. Site 182 Avenue D & 374 Conkey Ave. Rochester, New York Client: Urban League of Rochester Economic Development Corp.	LABELLA Associates, D.P.C. 300 STATE STREET ROCHESTER, NY 14614 P: (585) 454-6110 F: (585)454-3066 www.labellapc.com COPYRIGHT 2003 0 1,000 2,000 4,000 Feet 1 inch = 2,000 feet N W E S

Path: J:\Urban League of Rochester Economic Development\214539 - Michelson BCP Site RI & Remediation\Drawings\RIWP\Fig. 1 - Site location.mxd

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Path: J:\Urban League of Rochester Economic Development\214539 - Michelson BCP Site RI & Remediation\Drawings\RIWP\Fig. 2 - Site & Surrounding Area.mxd

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BCP Remedial Investigation
Work Plan

Former Michelsen
Furniture Co. Site

182 Avenue D
&
374 Conkey Avenue
Rochester, New York

Urban League of Rochester
Economic Develoment
Corporation

Title:
Site & Surrounding Area

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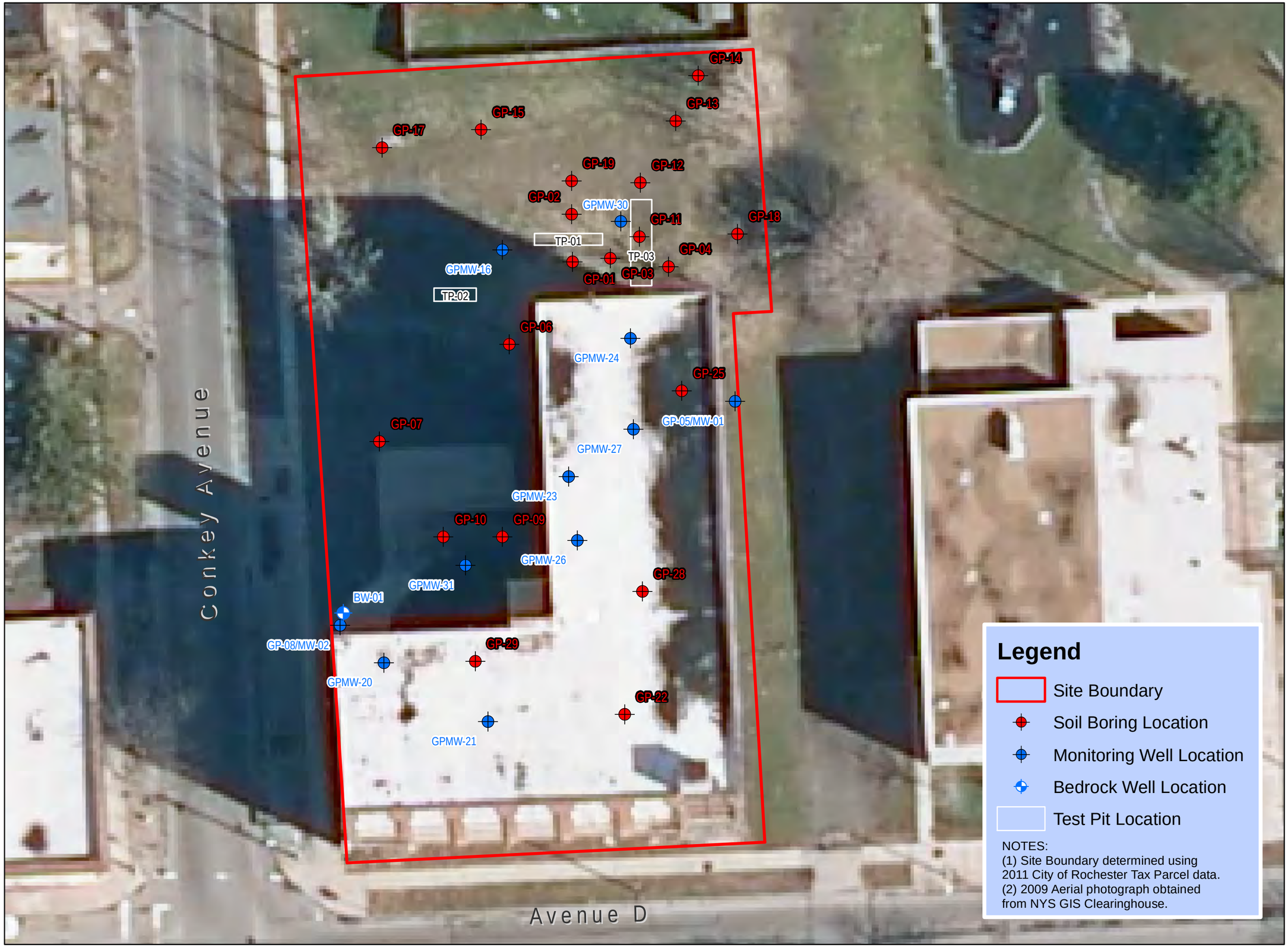
1 inch = 40 feet

214539

Figure 2



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BCP Remedial Investigation
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Former Michelsen
Furniture Co. Site

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374 Conkey Avenue
Rochester, New York

Urban League of Rochester
Economic Develoment
Corporation

Title:

Previous Investigaiton
Locations

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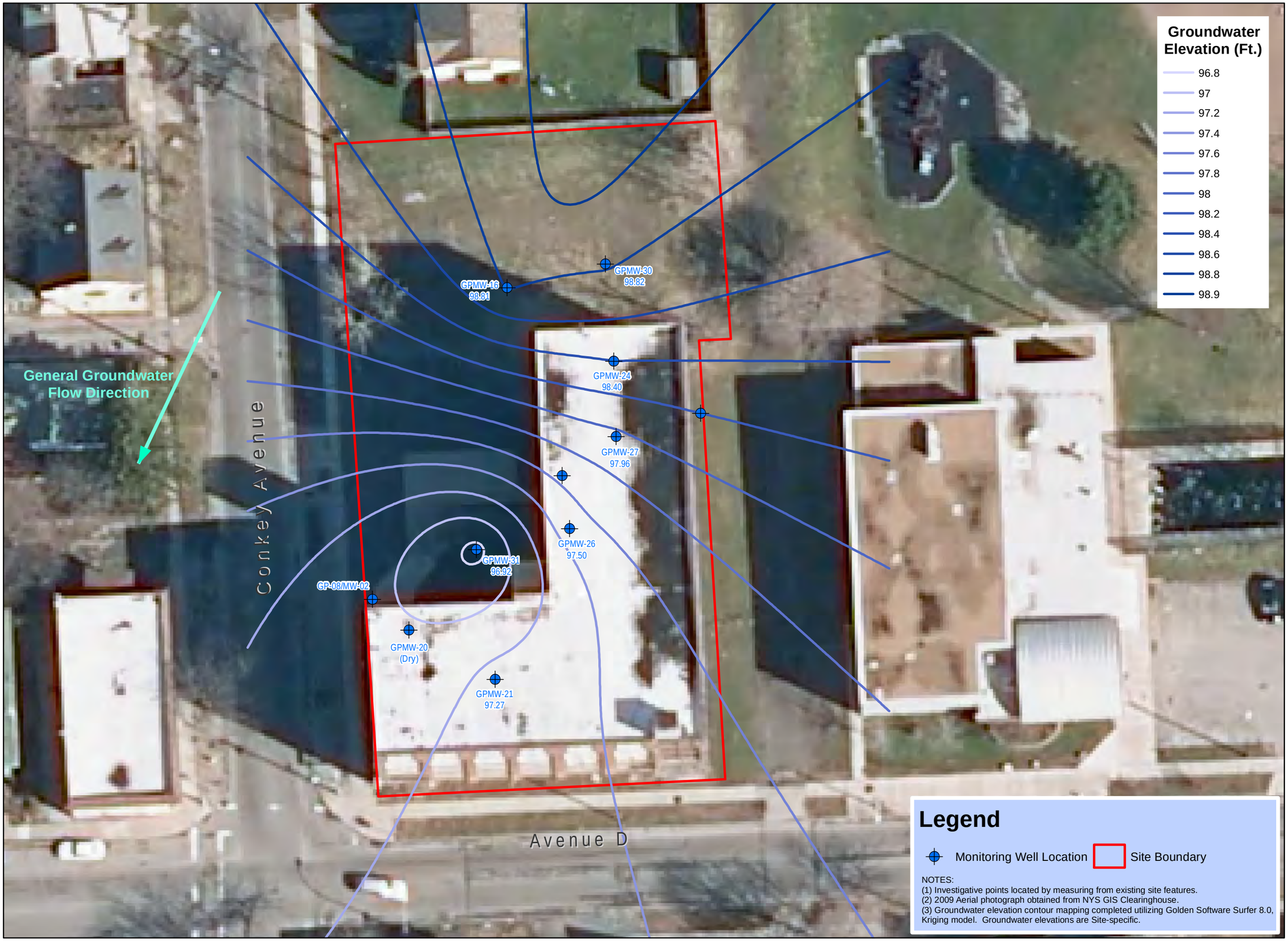
1 inch = 25 feet

214539

Figure 3



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BCP Remedial Investigation
Work Plan

Former Michelsen
Furniture Co. Site

182 Avenue D
&
374 Conkey Avenue
Rochester, New York

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Corporation

Title:
Groundwater Contour Map

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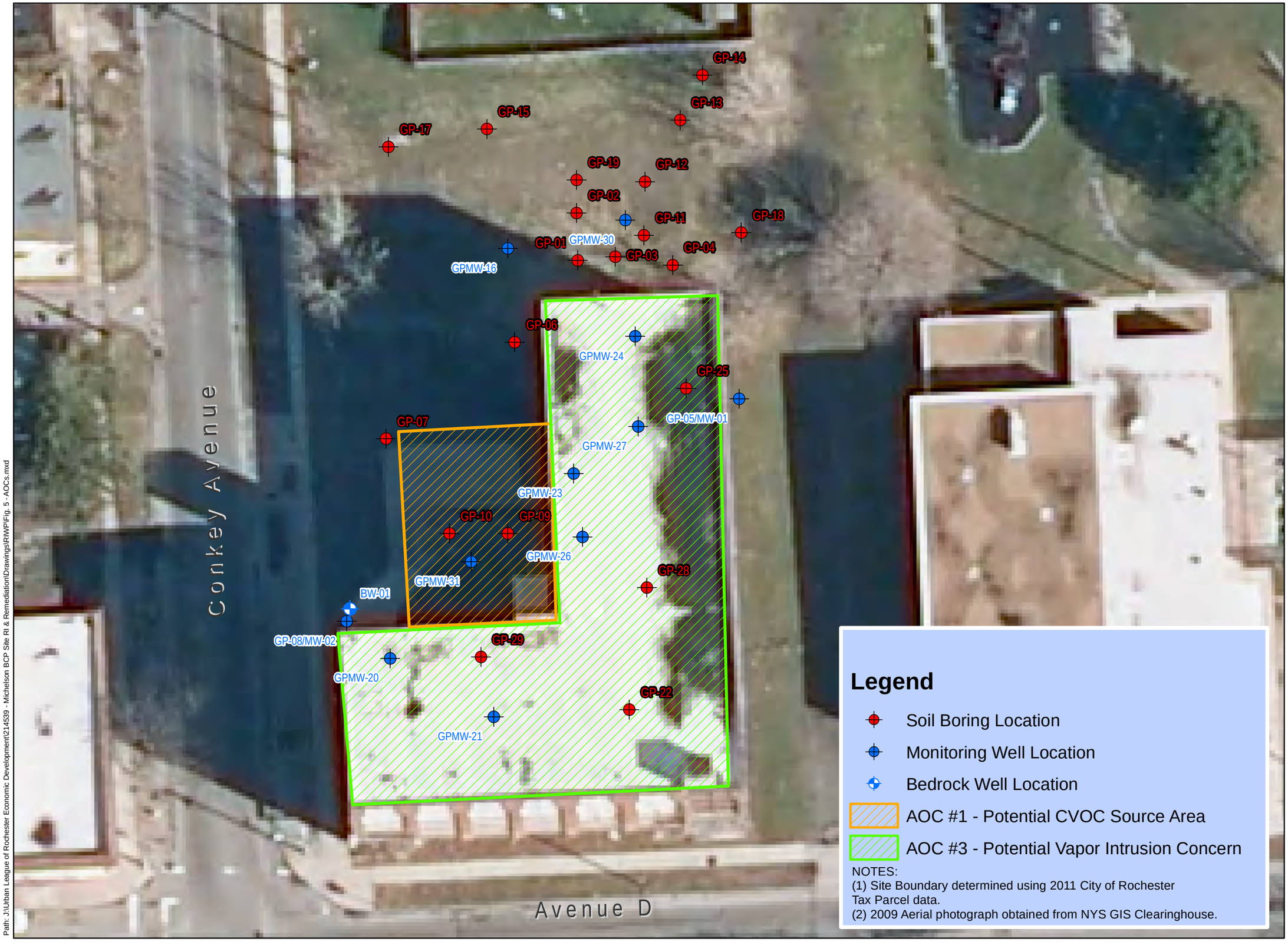
1 inch = 30 feet

214539

FIGURE 4

Path: J:\Urban League of Rochester Economic Development\214539 - Michelson BCP Site RI & Remediation\Drawings\RIWP\Fig. 3 - Grondwater.mxd



Legend

- Soil Boring Location
- Monitoring Well Location
- Bedrock Well Location
- AOC #1 - Potential CVOC Source Area
- AOC #3 - Potential Vapor Intrusion Concern

NOTES:
(1) Site Boundary determined using 2011 City of Rochester Tax Parcel data.
(2) 2009 Aerial photograph obtained from NYS GIS Clearinghouse.

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BCP Remedial Investigation
Work Plan

Former Michelsen
Furniture Co. Site

182 Avenue D
&
374 Conkey Avenue
Rochester, New York

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Corporation

Title:

Areas of Concern

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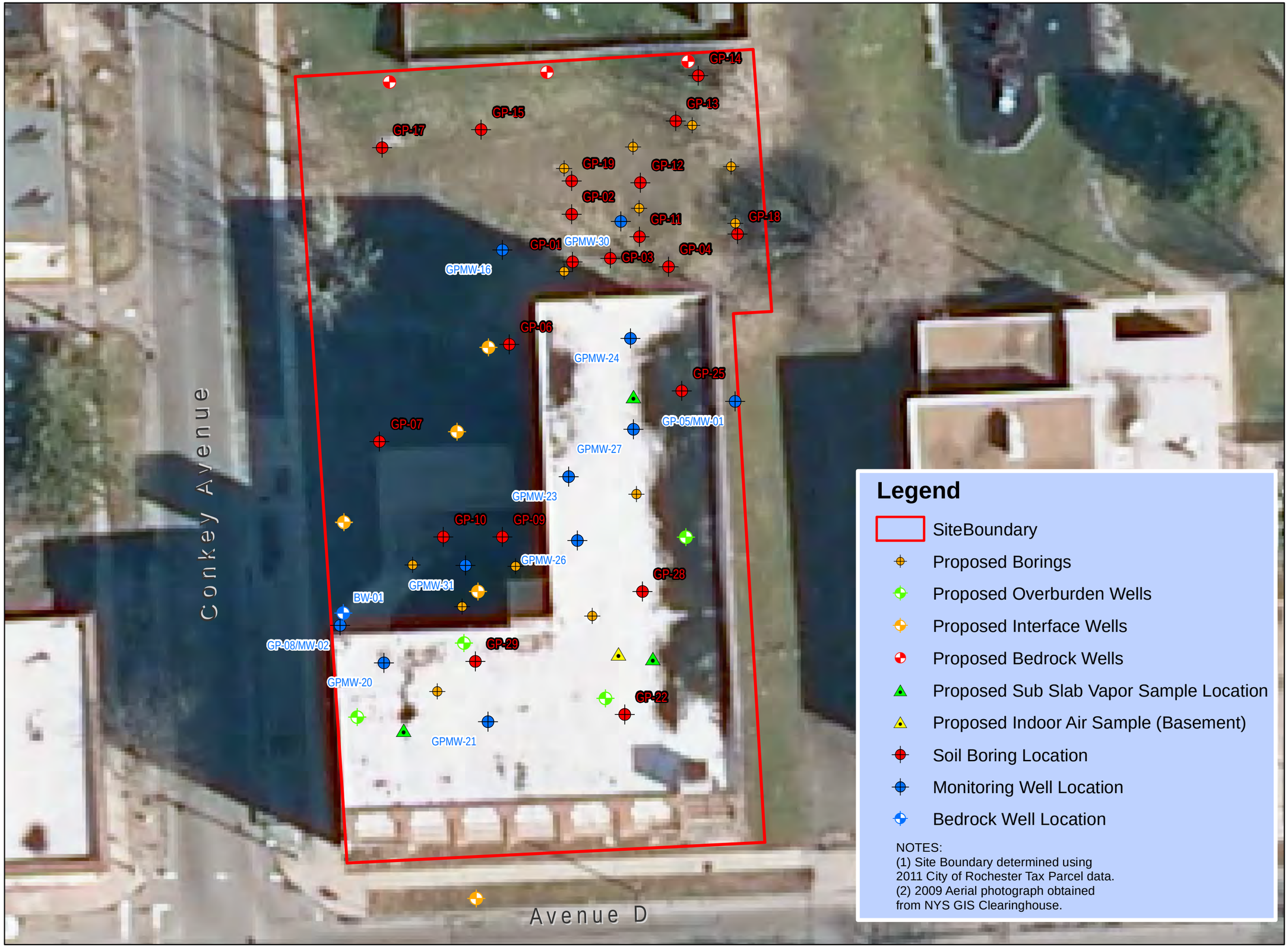
1 inch = 25 feet

214539

Figure 5

Path: J:\Urban League of Rochester Economic Development\214539 - Michelson BCP Site RI & Remediation\Drawings\RIWP\Fig. 5 - AOCs.mxd



Legend

- SiteBoundary
- Proposed Borings
- Proposed Overburden Wells
- Proposed Interface Wells
- Proposed Bedrock Wells
- Proposed Sub Slab Vapor Sample Location
- Proposed Indoor Air Sample (Basement)
- Soil Boring Location
- Monitoring Well Location
- Bedrock Well Location

NOTES:
(1) Site Boundary determined using 2011 City of Rochester Tax Parcel data.
(2) 2009 Aerial photograph obtained from NYS GIS Clearinghouse.

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BCP Remedial Investigation
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Former Michelsen
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Title:

Proposed Investigaiton
Locations

10 0 10

1 inch = 25 feet

214539

Figure 6

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TABLES

Table 1
BCP Remedial Investigation Work Plan
Former Michelsen Furniture Co. Site
182 Avenue D & 374 Conkey Avenue
Rochester, New York

Summary of Volatile Organic Compounds (VOCs) in Soil Samples
Results in Milligrams per Kilogram (mg/Kg) or Parts Per Million (PPM)

Sample ID	Soil Samples													NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives
	GP-05	GP-08	GP-09	GP-12	GP-22	GP-23	GP-24	GP-26	GP-27	GP-28	GP-29	GP-30	GP-31	
Depth	3'-4'	13'-13.5'	13'-14.1'	12'	7.6'	6.8'-8.4'	2'-3'	7.5'-7.7'	8'-8.2'	6.8'-7.1'	7.8'-8.4'	13.5'-14'	13.5'-14'	
Sample Collection Date	10/10/12	10/10/12	10/10/12	1/17/14	1/17/14	1/17/14	1/17/14	3/14/2014	3/14/2014	3/14/2014	3/14/2014	3/14/2014	3/14/2014	
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.33
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.7**
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05
Methyl acetate	ND	ND	1,300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Methyl cyclohexane	ND	ND	ND	0.820	ND	ND	0.160	ND	ND	ND	ND	ND	ND	NA
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19
Methyl tert-butyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.93
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.27
2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3**
cis-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.25
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.37
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06
Trichloroethene	ND	**0.960**	ND	ND	ND	0.012	ND	**3.300**	0.022	0.011	**0.470**	ND	0.230	0.47
Toluene	ND	ND	ND	ND	ND	ND U	ND	ND	ND	ND	ND	ND	ND	0.7
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND U	ND	ND	ND	ND	ND	ND	ND	NA
Tetrachloroethene	ND	0.016	ND	ND	ND	ND U	ND	0.039	ND	ND	ND	ND	0.010	1.3
Ethylbenzene	ND	ND	ND	0.170	ND	ND U	0.270	ND	ND	ND	ND	0.160	ND	1
m,p-Xylene	ND	ND	ND	0.072	ND	ND U	0.150	ND	ND	ND	ND	ND	ND	0.26
o-Xylene	ND	ND	ND	ND	ND	ND U	ND	ND	ND	ND	ND	ND	ND	0.26
Isopropylbenzene	ND	ND	ND	ND	ND	ND U	ND	ND	ND	ND	ND	ND	ND	2.3**
n-Propylbenzene	ND	ND	ND	0.460	ND	ND U	0.370	ND	ND	ND	ND	ND	ND	3.9
1,3,5-Trimethylbenzene	ND	ND	ND	2.600	ND	ND U	0.840	ND	ND	ND	ND	1.400	ND	8.4
1,2,4-Trimethylbenzene	ND	ND	ND	0.760	ND	ND U	2.000	ND	ND	ND	ND	1.400	ND	3.6
tert-Butylbenzene	ND	ND	ND	0.044	ND	ND U	ND	ND	ND	ND	ND	0.036	ND	5.9**
sec-Butylbenzene	ND	ND	ND	0.580	ND	ND U	0.280	ND	ND	ND	ND	0.520	ND	11
4-Isopropyltoluene	ND	ND	ND	0.950	ND	ND U	0.410	ND	ND	ND	ND	0.400	ND	10**
n-Butylbenzene	ND	ND	ND	0.910	ND	ND U	0.370	ND	ND	ND	ND	0.690	ND	12
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND U	ND	ND	ND	ND	ND	ND	ND	1.1
Naphthalene	ND	ND	ND	2.500	ND	ND U	3.100	ND	ND	ND	ND	4.000	ND	12

Notes:
VOC analysis by United States Environmental Protection Agency (USEPA) Method SW846 8260.
Bold type indicates that the constituent was detected above NYCRR Part 375-6.8(A) Unrestricted Use Soil Cleanup Objectives
U - Indicates that the constituent was not detected.
NA = Not Applicable or Not Available
*Indicates no Part 375-6 SCO for this compound; SCO from NYSDEC Commissioner Policy 51 Supplemental SCOs for Protection of Groundwater.
**Indicates no Part 375-6 SCO or CP-51 SSCO for this compound; SCO from NYSDEC CP-51 Table 2: Soil Cleanup Levels for Gasoline Contaminated Soil.

Table 2
BCP Remedial Investigation Work Plan
Former Michelsen Furniture Co. Site
182 Avenue D & 374 Conkey Avenue
Rochester, New York

Summary of Semi-Volatile Organic Compounds (SVOCs) in Soil Samples
Results in Milligrams per Kilogram (mg/Kg) or Parts Per Million (PPM)

Sample ID	Soil Samples						NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives
	GP-05	GP-08	GP-09	GP-22	GP-23	GP-24	
Depth	3'-4'	13'-13.5'	13'-14.1'	7.6'	6.8'-8.4'	2'-3'	
Sample Collection Date	10/10/12	10/10/12	10/10/12	1/17/14	1/17/14	1/17/14	
Naphthalene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	2.700	12
Acenaphthylene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	0.120	100
Acenaphthene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	0.600	20
Fluorene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	0.690	30
Phenanthrene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	2.000	100
Anthracene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	0.120	100
Fluoranthene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	0.042	100
Pyrene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	0.200	100
Benzo(a)anthracene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	<0.041 U	1
Chrysene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	<0.041 U	1
Benzo(b)fluoranthene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	<0.041 U	1
Benzo(k)fluoranthene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	<0.041 U	0.8
Benzo(a)pyrene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	<0.041 U	1
Indeno(1,2,3-cd)pyrene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	<0.041 U	0.5
Dibenzo(a,h)anthracene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	<0.041 U	0.33
Benzo(g,h,i)perylene	<0.037 U	<0.041 U	<0.043 U	<0.040 U	<0.039 U	<0.041 U	100

Notes:

SVOC analysis by United States Environmental Protection Agency (USEPA) Method SW846 8270.

Bold type indicates that the constituent was detected above NYCRR Part 375-6.8(A) Unrestricted Use Soil Cleanup Objectives

U - Indicates that the constituent was not detected.

NA = Not Applicable or Not Available

Table 3
BCP Remedial Investigation Work Plan
Former Michelsen Furniture Co. Site
182 Avenue D & 374 Conkey Avenue
Rochester, New York

Summary of Detected Volatile Organic Compounds in Groundwater Samples
Results in Micrograms per Liter (ug/L)

Sample ID	MW-01	MW-02	GPMW-16	GPMW-21	GPNW-23	GPMW-24	BW-01	GPMW-26	GPMW-27	GPMW-30	GPMW-31	NYSDEC Part 703 Groundwater Standards
Sample Collection Date	10/10/2012	10/25/2012	1/17/2014	1/17/2014	1/17/2014	1/17/2014	1/24/2014	3/14/2014	3/14/2014	3/19/2014	3/19/2014	
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
1,1,1-Trichloroethane	ND	ND	3.3	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	**120.0**	ND	ND	50
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Methyl tert-butyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
2-Butanone	ND	ND	15	ND	ND	ND	ND	ND	15.0	ND	ND	50
cis-1,2-dichloroethene	ND	ND	**7.9**	ND	ND	**3,500**	ND	**9.3**	**84.0**	ND	ND	5
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6
Benzene	**1.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
Trichloroethene	ND	**280**	**21**	**6.0**	**82**	ND	**600**	**420.0**	**420.0**	ND	**1100.0**	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
Tetrachloroethene	ND	**5.8**	3.5	ND	**14**	ND	ND	ND	1.3	ND	ND	5
Ethylbenzene	4.0	ND	ND	ND	ND	**230**	ND	**14.0**	ND	**110.0**	**8.1**	5
m,p-Xylene	**6.4**	ND	ND	2.8	ND	ND	ND	ND	1.3	ND	ND	5
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	3.1	ND	ND	5
Isopropylbenzene	1.9	ND	ND	ND	ND	ND	ND	ND	ND	**98.0**	ND	5
n-Propylbenzene	**5.1**	ND	ND	ND	ND	ND	ND	ND	ND	**150.0**	ND	5
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	**160**	ND	ND	ND	**380.0**	ND	5
tert-butylbenzene	<1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2,4-Trimethylbenzene	**30**	ND	1.9	1.2	ND	**520**	ND	ND	4.6	**320.0**	ND	5
sec-Butylbenzene	3.6	ND	ND	ND	ND	ND	ND	ND	ND	**140.0**	ND	5
4-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	**85.0**	ND	5
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	**140.0**	ND	5
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
Naphthalene	3.1	ND	ND	ND	ND	**580**	ND	ND	ND	**1200.0**	**66.0**	10

Notes:
VOC analysis by United States Environmental Protection Agency (USEPA) Method SW846 8260B.
Bold and highlighted type indicates that the constituent was detected above NYSDEC Part 703 Groundwater Standards
U - Indicates that the constituent was not detected.
NA = Not Applicable or Not Available

Table 4
BCP Remedial Investigation Work Plan
Former Michelsen Furniture Co. Site
182 Avenue D & 374 Conkey Avenue
Rochester, New York

Summary of Semi-Volatile Organic Compounds in Groundwater
Results in Micrograms per Liter (ug/L)

Sample ID	MW-01	MW-02	MWGP-16	MWGP-21	MWGP-23	MWGP-24	NYSDEC Part 703 Groundwater Standards
Sample Collection Date	10/10/2012	10/25/2012	1/17/2014	1/17/2014	1/17/2014	1/17/2014	
Naphthalene	3.1	<0.25 U	1.1	0.55	0.50	**630**	10
Acenaphthylene	<0.050 U	<0.050 U	0.20	<0.050 U	<0.050 U	<25 U	NA
Acenaphthene	0.84	0.050	<0.050 U	<0.050 U	<0.050 U	**90**	20
Fluorene	0.42	<0.050 U	0.10	0.20	0.17	**94**	50
Phenanthrene	0.55	0.16	0.12	0.44	0.38	**220**	50
Anthracene	0.078	<0.050 U	<0.050 U	<0.050 U	<0.050 U	**210**	50
Fluoranthene	0.13	0.10	<0.050 U	<0.050 U	<0.050 U	<25 U	50
Pyrene	0.095	0.12	<0.050 U	<0.050 U	<0.050 U	19	50
Benzo(a)anthracene	<0.050 U	<0.050 U	<0.050 U	<0.050 U	<0.050 U	**1.0**	0.002
Chrysene	<0.050 U	<0.050 U	<0.050 U	<0.050 U	<0.050 U	**1.4**	0.002
Benzo(b)fluoranthene	<0.050 U	0.054	<0.050 U	<0.050 U	<0.050 U	**0.68**	0.002
Benzo(k)fluoranthene	<0.050 U	<0.050 U	<0.050 U	<0.050 U	<0.050 U	**0.22**	0.002
Benzo(a)pyrene	<0.050 U	<0.050 U	<0.050 U	<0.050 U	<0.050 U	0.62	NA
Indeno(1,2,3-cd)pyrene	<0.050 U	<0.050 U	<0.050 U	<0.050 U	<0.050 U	**0.34**	0.002
Dibenzo(a,h)anthracene	<0.050 U	<0.050 U	<0.050 U	<0.050 U	<0.050 U	0.10	NA
Benzo(g,h,i)perylene	<0.050 U	<0.050 U	<0.050 U	<0.050 U	<0.050 U	0.39	NA

Notes:

AVOC analysis by United States Environmental Protection Agency (USEPA) Method SW846 8270.

U - Indicates that the constituent was not detected.

LABELLA Associates, D.P.C. | Engineering Architecture Environmental Planning

APPENDIX 1

Contact List Information & Qualifications

Former Michelsen Furniture Co. Site
BCP Site #C8_____

182 Avenue D & 374 Conkey Avenue
Rochester, New York

Remedial Investigation Work Plan
Contact List Information

Environmental Professional: LaBella Associates, D.P.C.

Environmental Director	Gregory Senecal, CHMM*	Ph. 585-295-6243 Cell 585-752-6480
Project Manager	Dave Engert, CHMM*	Ph. 585-295-6630 Cell 585-737-3293
Quality Assurance Officer	Daniel Noll, P.E.*	Ph. 585-295-6611 Cell 585-301-8458
Field Geologist & Site Safety Officer	Jennifer Gillen*	Ph. 585-295-6648 Cell 315-402-6480
LaBella Safety Director	Richard Rote, CIH	Ph. 585-295-6241

BCP Volunteer: Urban League of Rochester Economic Development Corporation

Contact: Carolyn Vitale: Phone - (585) 454-5710

Drilling Contractor (Direct Push): LaBella Environmental LLC

Contact: David Engert: Phone - (585) 295-6630

Drilling Contractor (Bedrock Wells): Nothnagle Drilling, Inc.

Contact: Steve Dilaura: Phone - (585) 538-2328

* denotes LaBella's assumption that each of these individuals qualifies as a Qualified Environmental Professional as defined in NYSDEC Part 375-1.2(ak). Alternate QEPs are also included in the following qualifications in the event one or more of these persons are needed to complete the RI.

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David Engert, CHMM

Dave has 16 years of experience as a Geologist and Project Manager in the environmental consulting and contracting industries. He has conducted and managed numerous Phase I and Phase II Environmental Site Assessments, soil and groundwater remediation projects, groundwater monitoring programs and vapor intrusion investigations for both public and private sector clients. Additionally, Dave has managed Brownfield projects through the New York State Brownfield Cleanup Program.

Senior Environmental Geologist

- State University of New York at Buffalo: BA, Geology

Certification / Registration

- Certified Hazardous Materials Manager
- OSHA Hazardous Waste Operations & Emergency Response Supervisor Course
- OSHA Hazardous Waste Operations & Emergency Response 40-Hour Site Worker Course & Annual Refreshers
- OSHA 10-Hour Construction Safety Course
- OSHA Excavation Safety Competent Person
- FEMA ICS 100 — Introduction to the Incident Command System
- FEMA ICS 200—ICS for Single Resources and Initial Action Incidents
- CSX Emergency Response to Railroad Incidents

Professional Affiliations

- Alliance of Hazardous Materials Professionals (Board of Directors, Finger Lakes Chapter)
- Air Waste Management Association

Project Experience

Brownfield Cleanup Program

NYSDEC Brownfield Cleanup Program | Former Breneman Site
Oswego, NY
Dave is serving as the Project Manager for a BCP Remedial Investigation at a 2.2 acre former manufacturing facility. A Remedial Investigation Work Plan was developed and accepted by NYSDEC. The Remedial Investigation is currently ongoing.

NYSDEC Brownfield Cleanup Program | Greenport Crossings
Hudson, NY
Dave served as the Project Manager for completion of the Remedial Investigation and development of the Remedial Alternatives Analysis and Remedial Action Work Plan at a 10.4 acre former industrial site. The proposed remedy includes capping of areas of heavy metals and semi-volatile organic compound contamination, underground storage tank removal and excavation and off-site disposal of petroleum contaminated soil.

NYSDEC Petroleum Spill Investigation and Remediation Projects

Petroleum Spill Site Remediation | Former Gasoline Station
Henrietta, NY
Project Manager for remediation of a former gasoline station. Remediation activities include the removal of four underground storage tanks, excavation and off-site disposal of over 3,200 tons of petroleum contaminated soil, and amendment of backfill with oxygen releasing compounds to promote natural degradation of the downgradient groundwater plume. A sub slab depressurization system was installed to mitigate vapor intrusion into an adjacent building. A groundwater monitoring program is ongoing.

David Engert, CHMM

Petroleum Spill Site Investigation and Remediation | Apartment Complex
Brighton, NY
Project Manager for investigation and remediation of apartment complex that is the site of a former gasoline and fuel oil bulk storage terminal. The investigation consisted of a geophysical survey, a direct-push soil boring program, installation and sampling of groundwater monitoring wells and a vapor intrusion assessment of select apartment buildings. Remediation activities include excavation and off-site disposal of petroleum contaminated soil. A Soil and Groundwater Management Plan was developed to address residual contaminants. Secured closure of the site from NYSDEC.

Petroleum Spill Site Investigation and Remediation | Silver Lake Marine
Castile, NY
Project Manager for investigation and remediation of private marina and boat showroom on Silver Lake. Designed and implemented a Phase II Environmental Site Assessment to assess the findings of a lender-required Phase I. Remediation activities included excavation and off-site disposal of petroleum impacted soils adjacent to boat launch and break wall. Secured closure of site from NYSDEC.

Projects below were completed under previous employment.

Brownfields

Former Labelon Corp.
Canandaigua, NY
Project Manager for Brownfield Remedial Investigation at vacant building that was historically operated by a bicycle factory and manufacturer of heat sensitive labels. Performed Phase I and Phase II Environmental Site Assessments prior to site being accepted into NYS Brownfield Cleanup Program. Contaminants of concern at the site included trichloroethene and associated daughter products, heavy metals and petroleum. Developed Remedial Investigation Work Plan and secured approval from NYSDEC. Provided oversight of Remedial Investigation performed by USEPA contractors under a Brownfield Assessment Grant.

NYSDEC Petroleum Spill Investigation and Remediation Projects

Former HEP Sales
Horseheads, NY
Project Manager for remediation of former hardware store and automobile dealership. Responsibilities included coordination of all contractors working independently. Remedial activities included excavation and off-site disposal of approximately 2,300 tons of petroleum and non-hazardous solvent impacted soil, installation and sampling of groundwater monitoring wells, injection of oxygen releasing compounds to treat residual groundwater impacts and development of a Soil and Groundwater Management Plan. Secured closure of site from NSYDEC.

Gasoline Station
Watertown, NY
Project Manager for investigation and remediation at gas station prior to property transfer. Conducted a Phase II Environmental Site Assessment to identify subsurface conditions and develop a Remediation Action Plan for NYSDEC approval. Responsibilities included coordinating removal of underground storage tanks, excavation, transportation and disposal of over 1,100 tons of petroleum impacted soil, contaminated groundwater management and development of a Soil and Groundwater Management Plan. Secured closure of site from NYSDEC.

Elmer's Brighton Garage
Brighton, NY
Project Manager and Geologist for investigation and remediation at an automobile repair facility. Identified recognized environmental conditions (RECs) during a Phase I Environmental Site Assessment. Performed a Phase II Environmental Investigation to address RECs and acquire data necessary for design of remedial strategy. Site remediation included the excavation, transportation and disposal of approximately 300 tons of petroleum impacted soil, removal of two underground hydraulic lifts, groundwater extraction utilizing a vac truck and installation of six bedrock groundwater monitoring wells. Conducted quarterly groundwater sampling to monitor

contaminant degradation until obtaining regulatory closure.

Gasoline Tanker Rollover
Dresden, NY
Project Manager for cleanup of approximately 5,000 gallon release of gasoline resulting from a motor vehicle accident. Assigned responsibility for site management after completion initial response activities. Responsibilities included the installation of a high-vacuum extraction system, oil water separator, diffused air stripper and carbon treatment unit for the remediation of groundwater at the site contaminated with dissolved and free-phase gasoline and monthly operations and maintenance activities, quarterly sampling and reporting to regulatory authorities. Secured closure of site from NYSDEC.

Former Service Station
Rochester, NY
Project Manager for remediation of former service station. Responsibilities included design, installation and operations & maintenance of a high-vacuum extraction system inside the site building. Oversaw O&M and periodic monitoring of system performance and conducted final investigation to determine effectiveness of system on treatment of soil and groundwater contamination. Secured closure of site from NYSDEC.

Artco Industrial Laundries
Rochester, NY
Project Manager for monitoring and remediation of former dry cleaning site under a Voluntary Cleanup Agreement with the NYSDEC to address soil and groundwater contamination resulting from a release of tetrachloroethene. Responsibilities included oversight of system installation, operation and maintenance, groundwater sampling, report writing and coordination with client, attorneys and NYSDEC officials.

Phase I & Phase II Environmental Site Assessments
Project Manager and Geologist for numerous Phase I and Phase II Environmental Assessments for private individuals, corporations, law firms and lending institutions. Properties have included bulk storage facilities, gasoline stations, automobile dealerships, light industrial and commercial facilities, cellular tower sites and agricultural properties.

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Jennifer Gillen, MS

Jennifer is a Phase II Project Manager responsible for the coordination and successful completion of Phase II Environmental Site Assessments (ESAs) and several Sites in the NYSDEC Brownfield/Voluntary Cleanup Programs. Jennifer has also worked on several Brownfield Opportunity Area (BOA) studies. Jennifer was previously the Phase I ESA Program Manager at LaBella and has completed hundreds of Phase I ESAs, numerous Phase II ESAs, and has experience with many Sites with chlorinated solvent impacts as well as NYSDEC Spill Sites.

Phase II/Brownfield Project Manager

- SUNY Albany: BS, Geological Sciences
- SUNY Albany: MS, Geological Sciences
- Certified Hazardous Waste Operations & Emergency Response (40 Hour OSHA Health and Safety Training 29)
- OSHA 8 Hour Hazardous Waste Operations and Emergency Response Course

Project Experience

Canal Corridor Brownfield Opportunity Area Study | Oswego, NY
Jennifer was responsible for the compilation, analysis and dissemination of data associated with the BOA project, which spans 1,344 acres along the Oswego Canal and shore of Lake Ontario, within in the City of Oswego.

Tonawanda Brownfield Opportunity Area Study | Tonawanda, NY
Jennifer was responsible for the compilation, mapping and analysis of data associated with this 1,000 acre BOA on the Niagara River, which included properties used for radiological waste disposal associated with the Manhattan Project.

NYSDEC BCP Site #C828159, 690 Saint Paul Street | Rochester, NY
Jennifer assisted with the development of two Interim Remedial Measure Work Plans, the Remedial Investigation Report and Remedial Alternatives Analysis/Remedial Action Work Plan for the remediation of a NYSDEC Brownfield Cleanup Program site formerly utilized as an industrial manufacturing facility. Implemented the two Interim Remedial Measures and portions of the Remedial Investigation at the Site which included the excavation of contaminated soil and bedrock, the advancement of soil borings, and the installation and sampling of groundwater monitoring wells. Also, included in this work was the installation of bedrock monitoring wells using conventional rock coring methods and installation of infrastructure for *in situ* chemical treatment. This process involved coordination with the NYSDEC, the NYSDOH, and the City of Rochester School District.

Penn Yan Marine | Penn Yan, NY
Currently completing a groundwater delineation investigation and BCP application as well as a work plan for *in situ* treatment of groundwater contaminated with chlorinated volatile organic compounds. The implementation of the groundwater delineation investigation has included the installation and sampling of nineteen groundwater monitoring wells.

NYSDEC VCP Site #V00585-6, Lake Ontario Mariners Marina | Henderson Harbor, NY
Developed a Remedial Alternatives Analysis/Remedial Action Work Plan for this NYSDEC Voluntary Cleanup Site. This work included the design of a sub-slab depressurization system within a building under which a plume of petroleum-contaminated groundwater is located and the design of a pilot test for an air sparging system.

Former Emerson Power Transmission Facility | Ithaca, NY
Jennifer assisted with a detailed review of this 100-acre site with 800,000 sq. ft. of manufacturing space. The facility was a heavy industrial facility for over 100 years and has known issues with chlorinated solvents in bedrock and with significant off-site impacts. The project included a detailed and in-depth environmental site assessment in order to document any impacts above NYSDEC criteria and thus limit liability for the purchaser.

NYSDEC Spill Site #0906903, 185 Scio Street | Rochester, NY
Oversaw the installation of dedicated bedrock groundwater monitoring wells at the Site using conventional rock coring methods.

Jennifer Gillen, MS

City of Rochester Department of Environmental Services, Division of Environmental Quality, Pump Test Report, Port of Rochester |
Rochester, NY
Geotechnical sampling and pump test.
Assisted with the development of a work plan for and implementation of a pump test at the Site in anticipation of future development. This work included the installation of a pumping well and observation wells via hollow stem auger drilling and split-spoon sampling, which included geotechnical sampling. Implementation of the pump test included the pumping of over 650,000-gallons of water and the analysis of drawdown effects on observation wells. This process involved coordination with the New York State Department of Environmental Conservation, Monroe County Pure Waters, and the City of Rochester Division of Environmental Quality.

NYSDEC Spill Site #0906903, 185 Scio Street |
Rochester, NY
Oversaw the installation of dedicated bedrock groundwater monitoring wells at the Site using conventional rock coring methods. Completed sampling of these wells using standard low-flow methods.

NYSDEC Spill #0911669, Phase II Environmental Site Assessment and Remediation, Wemco Corp., Saltonstall Street |
Canandaigua, NY
Conducted geoprobe soil boring sampling and groundwater sampling to evaluate for potential subsurface effects related to historic fuel distribution operations. Following the subsurface investigation, assisted with the implementation of remedial excavations at the Site and coordinated with the NYSDEC for the closure of the Spill.

NYSDEC Site #C738046, Former Breneman Site |
Oswego, NY
Developed Remedial Investigation Work Plan and Citizen Participation Work Plan in anticipation of the upcoming Remedial Investigation at the Site.

Brownfield Cleanup Program Project, Greenport Crossings LLC., 181 Union Turnpike|
Greenport, NY

Phase I Environment Site Assessments |
Northeastern United States
Performed numerous Phase I ESAs and Transaction Screens on a wide variety of residential, commercial, industrial, and manufacturing facilities including gasoline stations, repair shops, apartment complexes, office buildings, and restaurants for the following groups:

Financial Institutions
- Bank of Castile
- Canandaigua National Bank
- ESL Federal Credit Union
- First Niagara Bank
- Genesee Regional Bank
- Northwest Savings Bank
- Steuben Trust Company

Municipal and Government Clients
- City of Rochester
- City of Oswego
- New York State Department of Transportation
- Town of Victor

Development and Construction Companies
- Buckingham Properties
- Conifer Realty, LLC
- Morgan Management
- Rochester Cornerstone Group
- Sunshine Realty

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Daniel Noll, PE

Dan has over 15 years of experience with environmental projects at industrial/manufacturing facilities and environmental investigation projects for a variety of clients including developers, financial institutions, industrial clients, and municipalities. Dan has managed numerous Phase II Environmental Site Assessments and remediation projects such as groundwater monitoring programs, soil vapor investigations, test pit investigations, geo-probe investigations, underground storage tank removals, soil removals, bio-cell remediations, and in-situ groundwater remediation. He also has experience with the design and installation oversight of mitigation systems. In addition, Dan has assisted industrial, municipal and agricultural clients with permitting and annual reporting for State Pollution Discharge Elimination System (SPDES) permits, Part 360 Land Application permits, Composting permits, and Petroleum Bulk Storage (PBS) registrations.

Brownfield Program Manager

- Clarkson University: BS, Chemical Engineering

Certification / Registration

- Professional Engineer, NY
- OSHA 40-Hour Certified Hazardous Waste Site Worker Training
- OSHA 8-Hour Certified Hazardous Waste Site Worker Refresher Training

Project Experience

Brownfield Cleanup Program Projects

Carriage Cleaners BCP Site | Springs Land Company
Rochester, NY
As Project Manager, Dan completed a Brownfield Cleanup Program (BCP) Application & Work Plan to conduct a Remedial Investigation at a former dry cleaning facility. A soil, groundwater, and soil gas study was undertaken to develop remedial costs and assist with redeveloping the property. Subsequently, an Interim Remedial Measure was completed to remove the source area of impacts from the Site. Dan completed a remedial alternatives analysis for selecting a treatment approach for the residual groundwater plume. Dan also attended Town Board Meetings regarding this project.

Former Manufacturing Facility BCP Site | American Siepmann Corporation
Henrietta, NY
Dan was the Project Manager for this Brownfield Cleanup Program (BCP) Site and has overseen the installation of a groundwater monitoring well network and subsequent routine sampling as part of a Monitored Natural Attenuation (MNA) program for remediation of chlorinated groundwater impacts at the Site.

Former Manufacturing Facility - BCP Site | Stern Family Limited Partnership
Rochester, NY
Dan was the Project Engineer for this BCP Site, which underwent a Remedial Investigation, Interim Remedial Measures, and installation of a sub-slab depressurization system. Dan completed and stamped the Final Engineering Report required to obtain the Certificate of Completion for the property owner, allowing them to obtain their tax credits.

Former Gasoline/Service Station BCP Site | RJ Dorschel Corporation
Rochester, NY
Dan was the Project Manager for this BCP Site, which included Remedial Investigations at two adjoining parcels, implementation of Interim Remedial Measures, and development of the Final Engineering Report and Site Management Plan. The project also included implementation of necessary Citizen Participation requirements. The project ultimately obtained the Certificate of Completion and thus the NYS tax credits.

Daniel Noll, PE

Former Bausch & Lomb Facility BCP Site | Genesee Valley Real Estate
Rochester, NY
Dan is Project Manager for this Brownfield site that served as a manufacturing facility from the 1930s to the 1970s. The project includes a Remedial Investigation (RI) of a four-acre parcel with ten areas of concern identified based on historic information. The RI identified four areas requiring remedial actions and Interim Remedial Measures have been completed in three of the locations. The areas of remediation included petroleum impacted soil and groundwater with free floating petroleum product, and chlorinated solvent contamination including bedrock impacts at depth. A remedial alternatives analysis is being completed to determine a final remedy for the site.

Comfort Inn – BCP Site | Bajrangee, Inc.
Rochester, NY
Dan was the Project Manager for this Brownfield site that included a design phase investigation to determine the extent of remedial work. The remediation work included excavation of chlorinated solvent impacts to soil and groundwater from the basement of the building. This included proper shoring design to facilitate the removal action. A second phase of the remediation included injection of treatment chemicals to address downgradient groundwater impacts.

Vacuum Oil – BCP Site | One Flint Street Associates
Rochester, NY
Dan was the Project Manager for this Brownfield site that is the oldest oil refinery in the United States. The current project includes developing a remedial investigation plan for two parcels that have had a history of oil refining since the 1800s. The remedial investigation was designed to fill data gaps from previous studies in order to minimize cost to the Client.

NYSDEC Petroleum Spill Investigation and Remediation Projects

Former Genesee Hospital | Alexander Associates
Rochester, NY
Dan was Project Manager for a Phase II ESA of a former hospital campus and adjoining parking garage. This assessment included evaluating potential impacts from the hospital chemical storage area, backup generators and associated fuel tanks, and historical site uses which included a former car dealership and service center. The Phase II ESA progressed in to the remediation of a NYSDEC Spill prior to redevelopment of the property. The investigation and remediation work obtained closure of a 20+ year old spill in less than 6-months.

Petroleum Spill Site Remediation | DeCarolis Truck Rental
Rochester, NY
Dan was Project Engineer for this site, responsible for the coordination of the removal/disposal of approximately 800 tons of petroleum impacted soil and development of a confirmatory soil sampling program. Dan also coordinated work with NYSDEC and completed post removal monitoring in order to close the spill file.

Petroleum Soil Removal & Oxygen Injection System| City of Rochester
Rochester, NY
As Project Engineer, Dan developed a soil and groundwater study to investigate former underground storage tanks at a former gasoline/auto repair facility. A remedial alternatives analysis was conducted to evaluate several options for remediating soil and groundwater at the site including light non-aqueous phase liquid. Dan followed this project through remediation which consisted of removing about 1,500 cy of soil and designing/installing an oxygen injection system to remediate groundwater over time.

Petroleum Spill Remediation | Hoselton
Rochester, NY
Dan was project manager for this project which included the removal and disposal of approximately 900 tons of petroleum impacted soil. Dan negotiated closure of the spill file with NYSDEC by addressing off-site contaminant migration by injection of treatment chemicals at the property line.

Permitting & Land Application Sites

Lagoon Design/Construction and SPDES Permitting | Mizkan Americas
Lyndonville, NY
Dan served as the Project Manager and Engineer for the design and construction assistance for a 700,000 gallon lagoon to store food-grade wastewater. The objective

was to reduce facility costs by discharge of food-grade wastewater to local sprayfields. The lagoon was designed and installed in accordance with NYSDEC requirements in order to store wastewater during the non-spraying season. This is a 20+ year old client who built their existing lagoon with LaBella's assistance in 1987. Project also includes permitting through NYSDEC SPDES (State Pollution Discharge Elimination System) Program.

Land Application and Composting Permits | Leo Dickson and Sons, Inc.
Bath, NY
Dan managed a project to permit a facility for composting of wastewater biosolids. The project included developing a report for NYSDEC to document design details for the facility, facility operations, and proposed monitoring. The facility received a NYSDEC Part 360 Composting Permit. In addition, Dan continues to provide annual reporting services for ensuring the facility operates within the permit conditions. He also assists this client with the annual reporting and permit renewals of a 2,000+ acre land application project under NYSDEC Part 360 solid waste regulations. The land application work includes permitting approximately 16 municipal facilities for land application.

City of Hornell Land Application Reporting | Permit Renewals and Modifications
Hornell, NY
Project Manager and Engineer responsible for assisting the City of Hornell with their annual Land Application Reporting, permit renewals and modifications to their permit for over 20 years. In addition to completing each annual report in the past five years, LaBella also recently assisted the City of Hornell with their Permit Renewal (May 2010) and a Permit Modification (July 2011). LaBella has assisted the City of Hornell for the past 20 years with permitting approximately 498 acres of land for their biosolids application work. Hornell conducts land applications via subsurface injection and typically applies 700,000 to 1 Million gallons annually. In 2011, LaBella assisted Hornell with permitting approximately 204 acres of land. LaBella assisted with all aspects of the process including coordinating with agencies, wetland issues, test pitting, soil sampling, etc. LaBella's work with the City of Hornell has provided us with significant experience in quickly determining issues that require resolution/ clarification as a first step prior to completing the application process.

Miscellaneous Projects

Former Emerson Power Transmission Facility
Ithaca, NY
Dan completed a detailed review of this 100-acre site with 800,000 sq. ft. of manufacturing space. The site is in the NYSDEC Inactive Hazardous Waste Disposal Site registry and was a heavy industrial facility for over 100 years. The facility closed in 2009 and Dan is the project manager for environmental due diligence activities for a potential buyer. The facility has known issues with chlorinated solvents in bedrock and with significant off-site impacts. The overall project will include a detailed and in-depth environmental site assessment with sampling for soil, bedrock, groundwater, soil gas, sediments, and surface waters in order to document any impacts above NYSDEC criteria and thus limit liability for the purchaser.

Genesee River Dredging Project | City of Rochester
Rochester, NY
Dan managed a project to permit three areas for dredging near the mouth of the Genesee River. The project included evaluating the previous dredging operations in the area, the existing sediment sampling data, sediment levels, discharge points in the area to be dredged and 3-D modeling of the sediments for accurate volume calculations. This information was summarized in a presentation to NYSDEC and the Army Corp of Engineers in order to streamline the permitting process and determine any additional requirements for obtaining a permit. Subsequent to the presentation, Dan developed the permit and submitted them to the Client for signature, and then approval by regulatory agencies.

Sediment Sampling Project | MRB Group
Erie Canal, NY
Dan managed a project to pre-characterize sediment in the Erie Canal in order to determine the depth and

volume of sediment in the work area, as well as the waste disposal requirements. This work was conducted prior to a utility line installation project in order to determine the feasibility of the project and the associated costs.

Former Foster Wheeler Facility | Dansville Properties, Inc.
Dansville, NY
Dan managed the effort to close out existing NYSDEC and EPA permits for the former facility and subsequently obtained permits for the new facility, which included multiple industrial companies operating throughout the campus. The permitting effort included obtaining: a sewer use permit from the local municipality, a SPDES Multi-Sector General Permit, RCRA Generator ID, Title V Air Permit, and PBS Registration.

Manufacturing Facility | Buckingham Properties
Rochester, NY
Dan assisted a developer that purchased a former Bausch & Lomb manufacturing facility to obtain a SPDES Permit for Industrial Discharges. This project included assessing the new operations and discussion of the Site with NYSDEC to determine the appropriate permits for the facility, since multiple tenants with various operations were in operation at the Site.

Port Marina | City of Rochester
Rochester NY
Dan assisted with the environmental investigation of the City of Rochester Port Marina. This project included evaluating the extent of slag fill materials that would require proper management during any redevelopment work. The extent of slag was evaluated by implementing a grid pattern of soil borings and using the resulting data to develop a 3-dimensional model of the subsurface at the Site. This model was used to generate volumes of material to be disturbed during redevelopment and estimate the cost burden of the environmental portion of the project. This project also included evaluating the magnitude and permitting of a massive dewatering program to allow the mass excavation to be completed.

Former Forestry Building | City of Rochester
Rochester, NY
Dan managed a project to evaluate the extent of mercury impacts at a former City of Rochester Forestry operations building. The project included multiple rounds of sampling at various depths in order to determine the extent of mercury impacted soils that required removal prior to redevelopment of the Site by a local manufacturing company.

Former Valeo Facility | Valeo North America
Rochester, NY
Dan managed Remedial Investigations of two areas of potential contamination at this former manufacturing facility. These assessments included evaluating bedrock groundwater for plating waste impacts (metals and chlorinated solvents). These evaluations were complicated by the fact that multiple industrial companies were in operation at the Site in the past and thus requiring LaBella to provide a focused assessment to only evaluate potential Valeo responsibilities.

NYSDEC Legacy Site Soil Vapor Intrusion Project | City of Rochester
Rochester, NY
Dan is Project Manager for this project which includes evaluating soil vapor intrusion from a former 230-acre municipal landfill with methane gas and chlorinated solvent impacts. The landfill was converted into an industrial park after closure in 1971 and is now developed with 45 separate parcels and over 2,000,000 square feet of building space. This challenging project included obtaining access from 27 different property owners and conducting site assessments at each facility and separately evaluating groundwater impacts over approximately 20-acre area. The results of this work determined the cost burden and liability of the City for addressing soil vapor intrusion. LaBella utilized all of the following mitigation approaches for minimizing this significant cost burden to the City: sealing of floors, vapor barriers, sub-slab depressurization systems and building pressurization depending on building conditions/uses.

Vacuum Oil Brownfield Opportunity Area | City of Rochester
Rochester, NY
Dan was Project Engineer for this project and his role was to develop a Pre-Nomination Study Report to facilitate entering the area into the NYSDEC Brownfield Opportunity Area program. The pre-nomination study

included evaluating demographics of the area, current and past property uses, property ownership, area-wide utilities, etc. The pre-nomination report was approved by NYS Department of State and a grant was approved for the next phase of the BOA program.

Environmental Restoration Program | Yates County
Penn Yan, NY
Dan was project manager for this Environmental Restoration Program site that included completing a Remedial Investigation at the site and developing a Site Management Plan to guide future redevelopment in-conjunction with remediation. This project turned a liability into an asset for the County.

Crime Lab Property Acquisition | Monroe County
Rochester, NY
Dan was project manager for this project which included conducting Phase I ESAs and Phase II ESAs at three properties being considered for development by the County for a new crime lab facility. The project included investigation and remedial cost estimates for the County to use in property acquisition negotiations. After property selection, Dan assisted with implementation of a remedial program that included removal of over 3,000 tons of NYSDEC Regulated Solid Waste. In addition, he designed and oversaw installation of a sub-slab depressurization system for addressing soil vapor intrusion concerns at the approximate 11,000 square foot new building.

Fill Relocation and Sub-Slab Mitigation System | City of Rochester
Rochester, NY
Dan was project manager for this project which relocated approximately 3,000 cubic yards of fill material from a development site that is located on a former landfill operated by the City of Rochester. This work was conducted for the City but on private property. The fill was relocated and placed in a soil berm on City property with NYSDEC approval. In addition, Dan designed and oversaw construction of a sub-slab depressurization system for the new 8,000 square foot building.

Bureau of Water, Lighting, and Parking Meter Operations | City of Rochester
Rochester, NY
As Environmental Engineer, Dan worked on the redevelopment of the current site for reuse as a new facility for the operations center, which included the following tasks: delineate the extent of soil and groundwater contamination, evaluate potential remediation options, develop a Comprehensive Action Plan (CAP), assist in the development of remediation specifications, and identify the scope of potential Interim Remedial Measures (IRMs) at the site.

935 West Broad Street Petroleum Spill Site | Characterization and Corrective Action
Rochester, NY
As Project Engineer, Dan developed a soil and groundwater study to investigate former underground storage tanks at a former gasoline/auto repair facility. A remedial alternatives analysis was conducted to evaluate several options for remediating soil and groundwater at the site including light non-aqueous phase liquid. Dan followed this project through remediation which consisted of removing about 1,500 cy of soil and installing an oxygen injection system to remediate groundwater over time.

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Greg Senecal, CHMM

Greg is Director of Environmental Services and is a Certified Hazardous Materials Manager and is responsible for the direction of all environmental investigation related projects undertaken by the firm. He has more than 23 years experience in designing, managing, and conducting numerous site assessments, remedial projects, brownfield redevelopment projects, groundwater monitoring well installations, test pit excavations, and underground petroleum storage tank removals and spill cleanups.

Greg coordinates staffing and client relationships for many of the firm's environmental clients. This effort includes working closely with the client, and forming the best technical project teams for the diverse array of environmental consulting and engineering services offered by the firm.

PHASE I/II INTRO:
As Director of Environmental Services, Greg is responsible for the direction of all environmental investigation related projects undertaken by the firm. Greg has more than 23 years experience scoping, scheduling, and reviewing Phase I Environmental Site Assessments, Phase II Environmental Site Assessments, and remedial efforts undertaken by the firm.

Greg is a Certified Hazardous Materials Manager (CHMM) and has extensive experience in the field of Environmental Management relating to Phase I and Phase II Environmental Site Assessments, remediation, and environmental compliance evaluations. Greg has conducted or supervised over 3,000 Phase I Environmental Site Assessments and over 1,500 Phase II Environmental Site Assessments, as the firm has averaged performing 300-340 assessments per year.

Project Experience

Monroe County Crime Lab Site Selection
Rochester, NY
As the Director of Environmental Services, Greg conducted detailed negotiations with Monroe County DES, the architectural design team, and the owners of two of the potential crime lab development sites. Greg ensured that the design team, the County, and the site owners fully understood the ramifications and cost premiums associated with developing the two environmentally challenged sites.

Monoco Oil Brownfield Cleanup

Director, Environmental Division
- State University of New York at Syracuse, School of Environmental Science and Forestry: BS, Environmental Science
- State University of New York at Cobleskill: AAS, Fisheries and Wildlife Technology

Certification / Registration
- Certified Hazardous Materials Manager
- Certified Hazardous Waste Operations & Emergency Response (40-Hour OSHA Health and Safety Training 29)

Pittsford, NY
Greg is responsible for directing all environmental services associated with the NYSDEC Brownfield Cleanup Program for this project. This complex environmental project involves the cleanup and demolition of a 20-acre blighted vacant oil refinery. The redevelopment plan for the project includes redevelopment of an upscale waterfront apartment and town home complex along the Canal.

935 West Broad Street
Rochester, NY
Greg is Client Manager for the Remedial Investigation, Remedial Alternatives Analysis, Site Re-use Concept Plan and a Corrective Action Plan. This project is funded under the NYSDEC 1996 Clean Water/Clean Air Bond Act. Projects tasks completed to date include: geophysical site assessment; comprehensive soil and groundwater characterization; computer model contaminant plume migration trends; GIS mapping to depict site features, analytical data, contaminant plumes;

Greg Senecal, CHMM

developed reuse concept site plan.

Monroe County Environmental Testing Term Agreement
Monroe County, NY
As Director of Environmental Services, Greg has been responsible for the successful completion of over 12 years of term agreements (with annual renewals) for hazardous materials inspection and abatement design with Monroe County. Assignments typically involve asbestos and lead inspections, but have also included other Regulated Building Materials and mold. Projects have ranged in size from small utility spaces to large multi-story office/housing complexes. A recently completed project involved the inspection of 160,000 sq ft of the Public Safety Building.

Environmental Term Agreement | City of Rochester
Rochester, NY
Client Manager who directs all of the projects under the term. Projects range from Phase I Environmental Site Assessments to Site Characterizations, Remedial Cost Estimates, and Brownfield Cleanups.

690 St. Paul Street | NYSDEC Brownfield Cleanup Project
Rochester, NY
Greg is serving as the project director for this multi-faceted Brownfield investigation and cleanup project. Greg acts as the liaison between the building owners, the former owner (Bausch & Lomb), the Building tenant (City of Rochester School District), and the numerous regulatory agencies involved in the project. This project includes a large SVI investigation, design and installation of a SVI mitigation system, monthly performance monitoring of indoor, sub slab, and exterior air, and communication of the above results to the agencies, tenants, and various stakeholder groups this project also included several IRM's for the removal of orphan tanks and petroleum impacted soils. The RI is currently focusing on the identification and delineation of suspected TCE plumes on the property and under the building structures.

Buffalo Avenue Industrial Corridor Brownfield Opportunity Area | Pre-Nomination Study
Niagara Falls, NY
Greg served as the project director for this 1500 acre, 2500 industrial parcel Brownfield Opportunity Area Project. Greg coordinated the effort between LaBella's Planning and environmental division. He also oversaw the schedule and public outreach components of the project.

Vacuum Oil/South Genesee Brownfield Opportunity Area | Pre-Nomination Study
Rochester, NY
Director of the Project Team for the City of to prepare a pre-nomination study for the proposed Vacuum Oil-South Genesee River Corridor Brownfield Opportunity Area. LaBella developed mapping that allowed for the Brownfield Opportunity Area boundaries to be established in a logical manner at the 56 acre 1.2 mile long corridor along the Genesee River. LaBella conducted economic and demographic research for the project site and gathered zoning, occupancy, and environmental information for potential underutilized Brownfield properties within the BOA.

Oswego River Corridor BOA
Oswego County, NY
Environmental Division Director for this 1,300 acre BOA on the Lake Ontario and Oswego River waterfronts. The project will focus on opportunities to redevelop strategic sites on the waterfront, downtown and underutilized or contaminated brownfields.

Tonawanda BOA | Town of Tonawanda
Tonawanda, NY
Environmental Division Director responsible for technical environmental services for this 1,000 acre BOA on the Niagara River.

Foster Wheeler Plant | Site Characterization
Dansville, NY
Project Manager for this due diligence investigation, which consisted of a complete Phase I Environmental Site Assessment and Phase II Site Characterization.

Port of Rochester Redevelopment Project | Phase II Site Characterization
Rochester, NY
Project Manager for complete Phase II Site Characterization, which involved sub surface characterization of approximately 38 acres. Greg directed the environmental team who received a beneficial re-use determination to re use 80,000 cubic yards of iron foundry slag as on site fill.

Bureau of Water, Lighting, & Parking Meter Operations
Rochester, NY
Greg served as Client Manager to remediate the Water Bureau site to obtain regulatory closure or inactivation. The project scope includes the redevelopment of the current site for reuse as a new facility for the operations

Greg Senecal, CHMM

center.

CSXT Train Derailment & Hazardous Materials Spill
Rochester, NY
Project Manager responsible for review of all delineation reports, implementation of additional delineation studies, review of remedial work plans, and oversight of all facets of the execution of IRM as it related to achieving a cleanup that would limit long term liability for the City and allow for the planned redevelopment to occur.

Rochester Rhinos Stadium Brownfield Redevelopment
Rochester, NY
Greg served as Project Manager of the NYSDEC Voluntary Cleanup of this prominent urban redevelopment site. The voluntary clean was based around a soils management plan approach that included the re-use of approximately sixty thousand yards of low level petroleum contaminated soils as on site fill under parking lots and in landscaped berm areas of the property.

Seneca Nation: USEPA Brownfield Cleanup Grant
Client Manager responsible for the preparation of a USEPA funded Brownfield Cleanup. The site consists of a vacant rail yard that is contaminated with diesel fuel and heavy metals. The cleanup involves removal and ex-situ bio-remediation of petroleum impacted soils and an environmental management approach that allows for the re-use of railroad ballast and shallow soil impacted with low levels of heavy metals and semi volatile organic compounds as fill under paved parking lots.

NYSDOT Hazardous Waste Projects | Region 4, Region 5
State of New York
Project Manager responsible for the development of a characterization workplan to satisfy City, NYSDEC, NYSDOH, MCEMC, and NYSDOT requirements, and implementation of a multiple phase work plan including: shallow soil sampling, test pitting, drilling, geo-probing, and groundwater monitoring well installation. Greg also served as the environmental liaison between LaBella Associates, the NYSDOT, the NYSDEC, and the City of Rochester. In addition, he provided direction of investigative and remedial work and evaluation of contamination levels and impacts. Greg was responsible for final report preparation for the City and the NYSDEC.

Automotive Service Center | Voluntary Cleanup
Investigation
Rochester, NY
Project Manager responsible for the delineation of an area of impairment for the client, and the release of future environmental liability for the client from the NYSDEC.

Pennsylvania Act II Site Characterization | Soil and Groundwater Remediation
Coudersport, Pennsylvania
Greg was Project Manager for a Pennsylvania Department of Environmental Protection Act II Voluntary Cleanup project. The site consisted of approximately five acres of land, two vacant gas stations and an agricultural chemical retail store.

Former Trucking Maintenance Facility | Phase II Site Characterization and Remedial Measures
Bloomfield, New York
Project Manager for a multi-phased site characterization and remedial effort. Greg was responsible for the oversight of the spill closure, design of a sub slab venting system, removal of 800 tons of impaired soil, and negotiations with the NYSDEC.

Former Gas Station | Design and Construction of Bio Remediation Project
Rush, New York
Greg was Project Manager for the removal of three underground gasoline storage tanks and approximately 600 tons of impaired soil. The design and implementation of a bio-cell remediation for the impaired soils, achieved NYSDEC Spill Closure and resulted in a 50 % savings compared to off-site land filling of the soils.

LABELLA Associates, D.P.C.

Relationships. Resources. Results.

Richard Rote, MS, CIH

Rick is a Certified Industrial Hygienist with a background in occupational and public safety. He brings to his projects an expertise in asbestos, lead, PCB and the management of hazardous materials. Projects have included building surveys, hazard assessments, abatement project planning, and project inspection and monitoring. Rick manages LaBella's in-house laboratory for asbestos air and bulk samples, as well as managing air monitoring projects. His responsibility is to identify environmental impacts, and design and manage appropriate environmental responses for these projects.

Senior Industrial Hygienist
- University of Rochester: MS, Industrial Hygiene
- St. Lawrence University: BS, Geology

Certification / Registration
- Certified Industrial Hygienist
- NYSDOL Project & Air Monitor
- 40 Hour Hazwaste

Professional Affiliations
- American Industrial Hygiene Association
- American Board of Industrial Hygiene
- Air & Waste Management
- American Society of Safety Engineers

Project Experience

Asbestos Abatement/Design/Monitoring

Asbestos Term Agreement | Rochester Housing Authority
Rochester, NY
Rick managed LaBella Associates' first Term Agreement for Asbestos Management Services. His responsibilities included coordinating scheduling and supervising field work, abatement design, variance development, reviewing final reports and contract management. Services include Project and Air Monitoring during abatement. Projects have ranged from single family homes to multi-building complexes.

Wegmans Food Markets | M&T Bank Pre-demo Abatement
Rochester, NY
Rick was the project manager for the regulated building materials inspection and abatement design required to accomplish the demolition of the 7 story bank and the adjacent parking garage. The inspection revealed spray-on fireproofing and other ACMs, as well as extensive use of PCB caulk around the exterior of both structures and on the interior side of windows. Fireproofing was identified between structural steel and exterior pre-fabricated cement panels, requiring partial demolition of the panels to gain access for abatement in otherwise inaccessible locations. This was a unique and challenging project, requiring innovative design and flexible response.

BeeBee Station | RG&E
Rochester, NY
Rick served as Project Manager for Regulated Building Material abatement design for the abatement required prior to the demolition of a dozen support buildings and associated exterior piping. Existing inspection reports were reviewed, deficiencies identified and data gaps filled with additional investigation and sampling. Abatement drawings and specifications were prepared for bid. Asbestos-containing materials were field marked for easy identification to aid both the bid and the abatement process.

College Town, LLC | Asbestos, PCB & Lead Inspection, Design, & Monitoring for Building Demolition
Rochester, NY
Project Manager for hazardous materials management services provided to CollegeTown, LLC for the demolition of 3 large commercial buildings in preparation for the development of the new College Town Project site. Rick

was responsible for the management of all services, including building inspection, abatement design, variance development and submission, bid document preparation, bid support and project and air monitoring.

Rick's team prepared site-specific variances proposing methods allowing safe demolition with non-friable asbestos in-place, saving the project significant time and money.

Wegmans Food Markets | Asbestos Inspection, Design, & Monitoring for Store Demolition
Rochester, NY
Project Manager for hazardous materials management services provided to Wegmans for over 15 years, including the demolition of buildings at 10 retail store sites. Rick is responsible for the management of all services, including building inspection, abatement design, bid document preparation, bid support and project and air monitoring.

Rick's team has provided the same services for pre-renovation projects that have occurred in Wegmans stores, as well a number of leased spaces.

Environmental Testing Term Agreement | Monroe County
Rochester, NY
Rick is the Project Manager for LaBella's term agreement service (with annual renewals since 1999) for hazardous materials inspection and abatement design with Monroe County. Projects ranged from small utility spaces to large multi-story commercial complexes. Recently completed projects include: MCC multi-year window replacement project, Monroe County Jail (asbestos & lead paint testing), MCC Field House Addition, Monroe Community Hospital renovations and Faith Wing roof replacement.

Asbestos Inspection and Abatement Design | University of Rochester | SWBR
Project Manager for asbestos and lead paint inspection, and abatement design services supporting renovation of the coffee shop lounge in Wilson Hall. The lounge area, the Lobby below and the entrance way were inspected for asbestos and lead paint. Abatement specifications and drawings were prepared for the project bid documents.

Asbestos Inspection and Abatement Design | University of Rochester | HBT Architects
Project Manager for asbestos and lead paint inspection, and abatement design services supporting renovation of a pair of bathrooms. The bathrooms and associated chases were inspected for asbestos and lead paint. Abatement specifications and drawings were prepared for the project bid documents.

Asbestos Inspection and Abatement Design | University of Rochester | SWBR
Project Manager for asbestos and lead paint inspection, and abatement design services supporting a classroom and office space renovation project in Gavett Hall. Inspections were completed in various spaces that would be impacted by the project. Abatement specifications and drawings were prepared for the abatement required for the renovations.

Asbestos Inspection and Abatement Design | Gates Chili Central School District
Gates, NY
Project Manager for asbestos and lead paint inspection, and abatement design services related to improvements and modifications to 10 buildings. Asbestos and lead management services have been provided for an on-going series projects since 2009. The project work requires coordination between the project team, school staff, and several architectural firms.

Asbestos Inspection and Abatement Design | Greece Central School District
Greece, NY
Project Manager of the Team providing pre-renovation asbestos inspection and abatement design services for the district-wide Excel II Capital Improvement Project. Extensive renovations will impact asbestos in nearly every school. AHERA records are reviewed, spaces inspected, reports written, specifications prepared and abatement drawings created for each affected school.

Mills II | Urban League of Rochester, Economic Development Corporation

Richard Rote, MS, CIH

Rochester, NY
Rick was the project manager of lead and asbestos services for a rehab project converting a section of vacant street side shops and housing into multiple housing units. Inspection and lead remediation design services were provided. Architecturally important wooden door and window parts were saved, de-leaded, painted and re-installed. Worker safety required interim lead clearance testing during different phases of construction, and final clearance testing was performed for each of 21 housing units.

Asbestos Inspection, Design, and Monitoring for Renovation | Rush Henrietta Central School District
Henrietta, NY
Project Manager for regulated building materials management services provided to the school district for the renovation of six schools. Services, including hazardous materials inspection, abatement design, bid document preparation, bid support and project and air monitoring, have been provided over a 10 year period.

Asbestos Term Agreement | NYSDOT
Statewide, NY
Rick managed LaBella Associates' six Term Agreements for Asbestos Management, spanning over 20 years. His responsibilities included coordinating scheduling and supervising field work, reviewing final reports and contract management. Services are provided to four regions and included asbestos sampling, analysis, Project Design, Project Monitoring and Air Monitoring. Over the six consecutive term agreements, Rick's group has inspected hundreds of bridges and completed over one hundred pre-demolition surveys of other structures. (1990 – 2010)

Asbestos Inspection and Abatement Design | Hilton Central School District
Hilton, NY
Project Manager for asbestos and lead paint inspection, and abatement design services in support of the District 2013 Capital Improvements project. Five schools and the Facilities & Transportation buildings were inspected for the project. Abatement specifications and drawings were prepared in response to the planned renovations.

Asbestos Inspection and Abatement Design | Dansville Central School District
Dansville, NY
Project Manager for asbestos and lead paint inspection, and abatement design services in support of the District 2012 Capital Improvements project. The Primary, Elementary and High Schools were inspected for the project. Abatement specifications and drawings were prepared in response to the planned renovations.

Asbestos Inspection and Abatement Design | Spencerport Central School District
Spencerport, NY
Project Manager for asbestos and lead paint inspection, and abatement design services in support of projects at several different schools in 2012 and 2013. Inspections were completed in various spaces that would be impacted by the projects. Abatement specifications and drawings were prepared in response to the planned renovations.

Asbestos Inspection and Abatement Design | Rochester Joint Schools Construction Board
Rochester, NY
Project Manager for asbestos, PCB and lead paint inspection, and abatement design services in support of major renovation projects at School 28 and Edison Technical School. The presence of spray-on insulation required careful inspection methods and PCB caulk presented challenging design issues at School 28. Abatement specifications and drawings were prepared in response to the planned renovations at both schools.

Asbestos Inspection | English Village Apartments
Rochester, NY
Project Manager for asbestos and lead paint inspection of a limited number of units to develop an Asbestos-containing Materials report that was representative of 550 units present at the site. The client's requirement for an accurate abatement cost estimate and sufficient documentation for bidding and abatement were successfully satisfied (2003).

Monroe County Water Authority | 2010 Roof Replacement Projects
Rochester, NY

Richard Rote, MS, CIH

Rick was the Project Manager for an asbestos inspection and abatement design project required for roof replacements at two facilities. Testing was completed, specs and drawings prepared, and a cost estimate generated for both sites. Project Monitoring services were provided for one roof project completed in 2010.

Environmental Services | NYSTA
Statewide, NY
Project Manager for a multi-disciplined professional service agreement. Responsibilities included supervising asbestos inspections, testing, abatement design, Project Monitoring and contract management.

Seneca Nation of Indians
New York
Completed a renovation feasibility study of a vacant 70,000 square foot health care facility. The study included mechanical, electrical, structural and hazardous material investigations.

Holy Family Catholic Community | Hazardous Materials Pre-Demo Inspection, Abatement & Demo Design
Rochester, NY
A hazardous materials pre-demo inspection was performed at the St. Joseph School. Abatement and demolition design and bid support services were provided. Project Monitoring was performed during abatement and construction management services were provided during demolition.

Asbestos Inspection and Abatement Design for Pioch Hall, Basil Hall, and Science Center | St. John Fisher College
Rochester, NY
Project Manager for the asbestos inspections and abatement design services. Planned renovations and selective demolition required inspection and testing materials likely to be disturbed by the project. The project required coordination with college staff, the contractor and school schedules.

Bureau of Water, Lighting, and Parking Meter Operations
Rochester, NY
Rick served as Project Manager, where pre-existing asbestos inspection reports were field verified, and previously untested materials were sampled and submitted for analysis. The buildings were assessed for lead, mercury lamps and PCBs. A detailed cost estimate, abatement specifications, and drawings were prepared.

Port of Rochester Redevelopment
Rochester, NY
Project Manager for the asbestos inspection, abatement design and project monitoring services were a component of a much larger project involving the design and construction of a new ferry and customs terminal at the Port of Rochester.

Former Photech Plant Pre-demolition Inspection | City of Rochester
Rochester, NY
Project Manager for the comprehensive inspection of hazardous and Regulated Building Materials at a 3 acre former industrial site, abandoned for many years. Inspection and design were hampered by years of vandalism and widespread industrial chemical contamination. Staff completed inspections, prepared a pre-demo report, abatement drawings, specifications, provided bid support, and project and air monitoring.

Hazardous Materials Inspection and Testing | Garlock Sealing Technologies
Palmyra, NY
Rick was Project Manager for the comprehensive hazardous materials inspection and testing of an 80 year old industrial building slated for a complete renovation. Specifications and drawings were prepared for the abatement of ACM, PCB, and mercury-containing items.

Horning Construction Company
Provided site inspection and work practice consultation regarding concerns over an abatement sub-contractor's work performance.

SUNY Fredonia | Alumni Hall Bathroom Updates
Fredonia, NY
Project Manager of inspection and abatement design services for the management of asbestos, PCB, lead and mercury related to the rehabilitation of eight student bathrooms in Alumni Hall. Tile floors and walls were cored to determine the presence of asbestos-containing

waterproofing. Specifications and drawings were prepared for the abatement of asbestos, lead and mercury-containing light bulbs. Abatement was completed in the spring of 2011. LaBella provided project and air monitoring services during abatement of asbestos plaster ceilings and insulated light fixtures from the eight bathrooms.

Erdman Anthony | State University at Buffalo, Cary, Farber, & Sherman Halls | AM/PM Services
Buffalo, NY
Project Manager for all air and project monitoring required during the abatement of pipe insulation, duct insulation, floor tile, and caulk for a facilities upgrade project at Cary, Farber & Sherman Halls. Coordination and phasing considerations were important due to the building remaining occupied and the need for multiple work areas across three buildings.

DASNY | SUNY Oswego, Onondaga Hall | ACM and Lead Inspection and Testing
Oswego, NY
Rick was the manager of the asbestos and lead inspection and testing efforts required for this project. The planned work presented the potential for impact of asbestos-containing materials (ACM) and lead-based paint. Rick conducted the lead inspection and assisted with the asbestos inspection of bathrooms in this high rise dormitory. A major renovation project for the upgrade of bathrooms and restrooms in the dorm required new fixtures, finishes and plumbing. Abatement specifications and drawings are being prepared for the abatement of confirmed ACM; all paint coatings were found to be lead-free.

iKon 5 | SUNY Alfred, Harder Hall | AM/PM Services (2010)
Alfred, NY
Project Manager for the air and project monitoring services required during the abatement of acoustical ceiling coating and floor tile at Harder Hall. Abatement was completed in several work areas during the summer months of 2010. Additional suspect materials were discovered during construction, including the identification of suspected pipe insulation in a steam tunnel and foundation wall waterproofing. LaBella assisted with the collection of bulk samples. Samples of suspect materials were submitted to our in-house laboratory for analysis and rush turn around. PCM air samples were also analyzed at the LaBella laboratory.

Hall Partnership | SUNY Alfred, McMahon Hall | AM/PM Services
Alfred, NY
Rick was responsible for the successful completion of all air and project monitoring required during the abatement of pipe insulation, floor tile, and other ACM at McMahon Hall. During construction other suspect materials were identified; samples were collected and tested in the LaBella laboratory. An incidental disturbance of pipe insulation was identified, delimited, and quantified. Advice and oversight was provided during the response to the disturbance.

SUNY Alfred | Greenhouses, Asbestos Inspection, Abatement Design, & Demolition Specifications
Alfred, NY
Project Manager for the asbestos and lead inspection and testing of three greenhouses slated for demolition. Specifications and drawings were prepared for abatement and subsequent demolition.

HOK | SUNY Geneseo, Greene Hall | AM/PM Services
Geneseo, NY
Rick was Project Manager responsible for overseeing all air and project monitoring required during the abatement of pipe insulation, floor tile, asbestos & PCB caulk and other ACM at Greene Hall.

Feasibility Study | Newark Housing Authority
Newark, NY
Project Manager for a feasibility study for the conversion of 13 buildings and over 1million s.f. of floor space to day treatment and senior assisted housing. A comprehensive asbestos inspection was completed for 7 buildings and nearly half the floor space to prepare abatement cost estimates as part of the feasibility study.

Asbestos Inspection and Abatement | Boylan Brown
Rochester, NY
Project Manager for the inspection of 5,000 s.f. of professional building in preparation for demolition. Prepared abatement design and specifications for

Richard Rote, MS, CIH

removal of ACM, light ballasts, and refrigeration. Services included pre-bid support and walkthrough, AM/PM during abatement.

SUCF 12338 | SUNY Potsdam | Upgrade Site Utilities Phase 3
Potsdam, NY
Project scope consisted of the upgrade and reconstruction of site infrastructure including roadways, parking lots, sidewalks, site storm drainage systems, and site accessory elements on the campus. Rick acted as Project Manager of inspections and testing necessary to determine the presence of asbestos-containing materials such as caulks, joint fillers, Transite, waterproofing, etc in the structures impacted by these improvements. LaBella provided abatement design services, which included the preparation of the specification sections and abatement drawings.

SUCF 02352 | SUNY Brockport | Infrastructure Improvements
Brockport, NY
Rick acted as Project Manager of the pre-renovation regulated building materials sampling survey and the abatement design for this project. Rick managed the air and project monitoring required during construction.

Asbestos Inspection and Abatement | Dorschel Automotive
Rochester, NY
Project Manager for the asbestos inspection and testing to develop an understanding of potential abatement cost liability. The 95,000 s.f. property inspection included both interior and exterior.

HEALTH & SAFETY

Rick, LaBella's Laboratory Director, is an industrial hygienist certified in the Comprehensive Practice of Industrial Hygiene. He has been providing health, safety and environmental services to LaBella clients for 20 years. Prior to joining LaBella Associates, he worked over 10 years for Eastman Kodak Company. Rick has conducted a wide variety of industrial hygiene investigations including:

- Industrial Hygiene Walk-Through Surveys
- OSHA Personnel Exposure Studies
- Noise Exposure Studies
- OSHA Compliance Programs and Audits
- Asbestos Site Surveys
- Indoor Air Quality Studies
- Mold Assessment and Testing
- Non- ionizing Radiation Surveys
- Health & Safety Plans for Hazardous Waste Sites

Rick has performed exposure studies for a wide variety of agents, from carcinogens and heavy metals to simple irritants and asphyxiates. He is routinely called upon to complete indoor air quality studies, including the assessment of 'Toxic Mold' contamination and potential for occupant exposure. In some studies, computerized data acquisition is used, allowing for complex data analysis and graphical representations of results. In another area of data management, he designed and helped to develop a database for tracking employee exposure histories and training.

Rick has prepared corporate programs for compliance with OSHA regulations such as Confined Space, Lock Out/ Tag Out, Respiratory Protection, Hazard Communication, asbestos, lead and others.

Health & Safety Training

Rick has extensive experience with employee health and safety training programs. He has provided Hazard Communication, Right to Know and Hazard Awareness training courses for many large organizations. Average class sizes ranged from 10 - 30 people. Some of the training courses Rick has prepared and presented are:

- Lead
- Hazard Communication
- Hearing Conservation
- Confined Space Entry
- Respiratory Protection
- Lock Out/Tag Out
- Lab Safety

Astra Zeneca | Environmental, Health & Safety Management
Project Manager for on-site environmental, health & safety management services to a large pharmaceutical research facility through a four year contract. LaBella's

personnel were responsible for day to day health & safety responsibilities, including facility inspections, accident investigation and reporting, chemical exposure monitoring, compliance program updates and employee training. LaBella was also responsible for the on-going collection and disposal of all chemical and biological wastes generated at the facility.

The contract terminated when the company relocated to an out of state facility. LaBella managed the environmental shut down operations of the facility. Labs and storage areas were inspected for remaining chemicals. Unused chemicals and chemical wastes were marshaled in selected areas and sorted in preparation for lab pack disposal. Disposal contractors were interviewed and the chemical disposal was bid out. Non-hazardous laboratory equipment and supplies were collected in selected areas and made available to local schools and clinics free of charge. Lab hoods were tested for contaminated residues and cleaned as appropriate. Dumpsters were ordered for the disposal of non-hazardous materials. A cleaning company was contracted to complete a final clean to leave the space as required in the lease.

Nazareth College | HSE Compliance Services
Project Manager for the assessment of compliance with OSHA and environmental regulations and exposure monitoring in the Art Department. A Spill Prevention Control & Countermeasure Plan and a Laboratory Chemical Hygiene Plan were developed to assist with compliance measures.

Elmira Psychiatric Center | NYSOGS
Elmira, NY
Project Manager for the comprehensive assessment of radon across the entire facility. Results were reported and at-risk spaces were identified. After consideration of site characteristics, space usage, and existing ventilation performance, a design for a comprehensive ventilation upgrade was provided.

UCB Manufacturing
Project Manager for the assessment of occupational exposures to methylene chloride and dust during the production of two pharmaceutical products. Several different production phases were monitored for both products. Both 8-hr Time Weighted Averages and Short Term Exposure Limit concentrations were determined for each phase. Ventilation evaluations and recommendations were provided to improve contaminant capture and reduce exposures.

Pfaulder, US, Inc.
A number of air monitoring studies have been completed to determine exposure concentrations to metals, silica and solvent vapors across a variety of production operations. The work has been completed as a component of the company's Safety Management Program.

LaBella updated Pfaudler's Confined Space Program by reevaluating the plant for confined space hazards, preparing a new program manual and written entry procedures. The plant was also evaluated for Lock-Out/ Tag Out hazards. All powered equipment was assessed and a new Lock-Out/Tag-Out Program was prepared, including written Lock-Out/Tag Out procedures. LaBella has provided employee training in these programs and Hazcom on a regular basis.

NYSDOT | Fredonia Maintenance Residency
Fredonia, NY
Volatile Organic Compounds were scanned using SUMA canisters and Method TO-15 to achieve very low detection levels in response to employee concerns over sub-slab gasoline and fuel oil contamination. Sample data was compiled and presented in an industrial hygiene format for presentation to employees. Vapor concentrations were concluded to be low enough to not present the potential for adverse health effects.

Nexpress/Kodak
Project Manager for the assessment of occupational exposures to solvents and noise during the development of coating equipment and processes. Ventilation evaluations and design services were provided to improve performance. Respiratory protection program training and fit testing were provided to new users.

City of Rochester Indoor Air Quality Studies | City of Rochester
Rochester, NY

Richard Rote, MS, CIH

Project Manager for Indoor Air Quality studies, including toxic mold investigations, which been performed at a number of city facilities. Studies have been triggered by employee complaints of upper respiratory irritation, dry scratchy eyes, illness, odors and stale air. Testing was completed for specific contaminants based on conditions identified during the initial walk-through evaluation. Ventilation system design and function are also evaluated. All work was carried out in close association with the Environmental Services Department, including the development of corrective actions.

Childtime | Various Sites
Upstate, NY
LaBella completed visual inspections and assessments for mold contamination at 10 sites across Upstate New York. Contaminated areas were delineated, limited sampling was completed, remediation recommendations were provided and a remediation specification was prepared. During and post remediation inspections were performed with clearance testing done as needed.

RIT | Indoor Air Quality Study
Rochester, NY
Industrial Hygienist and investigator for several Indoor Air Quality and mold studies performed at a number of campus buildings. Studies have been triggered by employee, faculty and student complaints of upper respiratory irritation, dry scratchy eyes, illness, odors and stale air. Investigations include observation, interviews and testing. Testing assesses ventilation effectiveness, contaminant concentrations, and mold types and concentrations. Recommendations are provided for improved air quality and mold remediation.

UCB Manufacturing | Occupational Exposure Monitoring of Methylene Chloride and Dust
Rochester, NY
Project Manager for the assessment of occupational exposures to methylene chloride and dust during the production of two pharmaceutical products. Several different production phases were monitored for both products. Both 8-hr Time Weighted Averages and Short Term Exposure Limit concentrations were determined for each phase. Ventilation evaluations and recommendations were provided to improve contaminant capture and reduce exposures.

Optimation Technology | Hexavalent Chromium Concentrations during Welding
Rochester, NY
Project Manager retained in response to new OSHA regulations, personal exposure monitoring was completed during a variety of stainless steel welding tasks to determine exposure concentrations of hexavalent chromium. Standard welding operations were evaluated with excellent ventilation controls in the work areas. Exposure concentrations did not exceed OSHA limits.

Wegmans Food Markets, Inc. | Project Manager, Employee Exposure Assessment
Rochester, NY
LaBella measured the concentrations of several different solvents and dark room chemicals to assess employee exposures during various printing operations. The exhaust ventilation system was evaluated for effectiveness. Recommendations were provided on chemical handling and modifications to the exhaust system.

Indoor Air Quality
LaBella has completed numerous indoor air quality studies in a variety of environments in response to employee complaints such as, upper respiratory tract irritation, odors, headaches and a high rate of illness. Building design, ventilation, equipment, and operations are evaluated for factors which could contribute to poor indoor air quality. Testing has included agents such as carbon dioxide, volatile organic compounds, solvents, dust, noise and bioaerosols. Recommendations for remediation and ventilation improvements are provided.

Employee Exposure
Personal and area samples were taken to measure employee exposures to ammonia and dust at a large egg farm. Full shift dosimetry was performed with data

logging. Time history graphs were used to identify specific high exposure tasks.

Indoor Air Quality
Warehouse guards had expressed concern about exposure to engine exhaust and particulate. Personal sampling was conducted to determine employee exposure concentrations to respirable dust, carbon monoxide, and nitrogen dioxide. Recommendations were made for modifications to the guard house ventilation system to help reduce particulate and exhaust gas infiltration.

Warren County Public Safety Facility
A community noise study was completed to address neighbor complaints about noise from a recently installed roof top chiller. Measurements were taken at several locations revealing that noise from the chiller was only slightly higher than ambient noise levels.

Affinity Realty Partners, LLC
Radon monitoring was performed to satisfy lender requirements at this and many other apartment complexes. Testing needs are assessed and monitoring is completed quickly and efficiently.

American Motive Power
Project manger for on-site provision of environmental, health & safety services. Plant operations were reviewed and investigated; Hazcom, Lockout/Tagout, Respiratory Protection, waste management and air permit programs were developed. Employee training was provided as required. Employees were monitored to determine exposure concentrations to noise and solvents.

Nestle Purina
Completed employee exposure monitoring for two corrosive irritants used during routine cleaning of processing equipment. The client needed immediate support to respond to employee concerns about the process. Samples were taken for several employee tasks during the B shift within one week of the request to complete the work, the final report was provided two weeks later.

SUNY Fredonia
The Fenner House Admissions Office was assessed for mold contamination in response to occupant concerns. Inspection and sampling determined that occupied areas were in good condition, but that the basement needed some corrective actions. The inspection revealed several areas and aspects of water infiltration, leading to recommendations for better drainage and other methods to prevent the reoccurrence of mold growth.

APD Engineering
Community noise studies have been completed in several upstate locations in support of the placement and development of large retail establishments. Follow up noise studies have been completed to support retail store response to neighbor noise complaints.

Lead Services

Residential
Rick has conducted many industrial hygiene studies and exposure evaluations on operations where lead exposure was a concern, and appreciates how easily serious lead exposures can occur. Rick manages the staff responsible for inspections and risk assessments required for compliance with EPA and HUD lead paint guidelines for housing inspections and abatement clearance.

Industrial
Rick has conducted many industrial hygiene studies and exposure evaluations on operations where lead exposure was a concern. The types of operations studied include production, maintenance and demolition. Specific operations include: part finishing, hand and wave soldering for circuit board manufacturing, lead chromate painting operations, incinerator maintenance and ash handling operations, lead smelting, and demolition of lead paint coated steel structures. Rick has experience with the HUD lead paint guidelines for home inspections and abatement clearance.

City of Rochester | Lead Paint Program
Rochester, NY
Rick has managed LaBella Associates participation in the City Lead Paint Program as a provider of 3rd party

Clearance testing following hazard reduction activities. Nearly 100 Clearance Certifications have been completed within the last 6 years.

School Campus Conversion to Housing | Providence Housing
Rochester, NY
This large project involves the conversion of a former Parrish and private school campus to program housing. Rick managed the provision of lead and asbestos inspection and abatement design services. Lead testing was completed in 5 different campus buildings that were converted to housing. The project also included limited risk assessments, interim lead clearance and final clearance testing in each completed housing unit.

DASNY | SUNY Oswego, Onondaga Hall | ACM and Lead Inspection and Testing
Oswego, NY
Rick was the manager of the asbestos and lead inspection and testing efforts required for this project. The planned work presented the potential for impact of asbestos-containing materials (ACM) and lead-based paint. Rick conducted the lead inspection and assisted with the asbestos inspection of bathrooms in this high rise dormitory. A major renovation project for the upgrade of bathrooms and restrooms in the dorm required new fixtures, finishes and plumbing. Abatement specifications and drawings are being prepared for the abatement of confirmed ACM; all paint coatings were found to be lead-free.

Asbestos Abatement and Inspection | Gates Chili Central School District
Gates, NY
Project Manager for asbestos and lead paint inspection, and abatement design related to improvements and modifications to 10 buildings. The projects required coordination between the project team, school staff, and several architectural firms. Lead considerations included inspection, testing, abatement design, interim and final clearance tests.

Compliance Audit and Management Projects

Astra Zeneca
Rick and his staff had full responsibility for ongoing health, safety and environmental compliance at a pharmaceutical research operation for over 4 years, until site relocation out of state. The project was initiated with a comprehensive audit of operations, followed by correction of deficiencies and management of ongoing compliance with all applicable OSHA, EPA, DEC and NRC requirements. Responsibilities included safety audits, training and management; pest inspections and management; and Hazwaste management. Hazwaste management included waste characterization, container labeling, lab pack preparation, scheduling removal, review of manifests and annual reporting.

Hazardous Waste Management
Rick has completed audits and provided consulting assistance to a variety of industries on practices and issues relating to hazardous waste disposal and management. Industry experience includes polymer processing, spray painting, silk screening, plating and varied solvent use.

Air Emission Compliance
Rick is a certified third party compliance inspector for the NYS DEC in the dry cleaner perchloroethylene inspection program. The certified inspector acts as an agent of the DEC in performing annual Part 232 compliance inspections. Rick has performed many Part 201, 228 and Title V compliance determinations

for a variety of industries. He has also reviewed and prepared Risk Management Plans for the accidental release of toxic materials.

OSHA Safety Compliance
Rick routinely provides OSHA compliance audits and performance reviews. He prepares compliance programs and consults with industries on their implementation. Rick also provides employee training for most OSHA safety programs. Example safety programs include Confined Space, Lock Out/Tag Out, Hazcom, Lead, Asbestos, Emergency Evacuation, Laboratory Safety and many more.

BIRD CRAP

Attic Cleanup, South Buffalo Charter School
Buffalo, NY
Rick served as Project Manager for an indoor air quality study and the cleanup of a bird contaminated attic space in the main school building. Cleanup methods were proposed and reviewed. Air sampling before, during and after cleanup documented successful cleanup and control methods.

Port of Rochester Redevelopment
Rochester, NY
Project Manager of asbestos and environmental management services associated with the design and construction of a new ferry and customs terminal at the Port of Rochester. A large building slated for renovation was contaminated with bird carcass and several inches of bird feces. Rick managed the asbestos inspection and the abatement design for the proper removal of both the asbestos and bird residues.

Pole Barn Cleanup, Greece Central School District
Rochester, NY
Rick reviewed conditions associated with the reconstruction of a transportation pole barn that had bird feces in the attic spaces. A specification was developed to inform the contractor of the hazard and to specify control conditions intended to protect adjacent school property from emissions and impact from the cleanup work.

LABELLA Associates, P.C. | Engineering Architecture Environmental Planning

APPENDIX 2

Site Specific Community Air Monitoring Plan

Community Air Monitoring Plan

Location:

Former Michelsen Furniture Co. Site
182 Avenue D & 374 Conkey Avenue
Rochester, New York

Prepared for:

Urban League of Rochester Economic Development Corporation
312 State Street
Rochester, New York 14614

LaBella Project No. 214539

Revised
January 2015

Community Air Monitoring Plan

Location:

Former Michelsen Furniture Co. Site
182 Avenue D & 374 Conkey Avenue
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1.0 INTRODUCTION

This Site Specific Community Air Monitoring Plan (CAMP) has been prepared by LaBella Associates, D.P.C. on behalf of the Urban League of Rochester Economic Development Corporation (ULREDC). This CAMP addresses potential Volatile Organic Vapor (VOC) and particulate emissions that may occur during implementation of the Remedial Investigation Work Plan (RIWP) at the Former Michelsen Furniture Co. Site located at 182 Avenue D and 374 Conkey Avenue which encompasses approximately 0.62 acres in the City of Rochester, Monroe County, New York herein after referred to as the "Site."

1.1 PURPOSE

Various levels of VOCs, semi-VOCs, and metals (collectively refered to as "constituents of concern (COCs)) have been detected in the soil and groundwater at the Site or are suspected to be contained in the soil and/or groundwater at the Site. The presence of these COCs through disturbance of soil and groundwater at the Site can potentially result in nuisance odors or health threats to the neighborhood in the immediate vicinity of the Site as well as to the various occupants of the Site.

This CAMP is specific to activities being conducted as part of the Remedial investigation at the Site. The CAMP describes the air monitoring activities to be completed in order to provide a measure of protection for any downwind receptors including Site occupants and occupants of neighboring properties. This CAMP is not intended to provide action levels for respiratory protection of workers involved with the RI. Rather, a Health & Safety Plan (HASP) has been developed and is included as Appendix 4 to the RIWP to cover workers directly involved with the RI work.

This CAMP includes the requirements of the New York State Department of Health (NYSDOH) Generic CAMP (included as Appendix 1A of the Draft DER-10 New York State Department of Environmental Conservation (NYSDEC) Technical Guidance for Site Investigation and Remediation dated December 2002).

Pursuant to the New York State Department of Environmental Conservation (NYSDEC) Technical Administrative Guidance Manual (TAGM) #4031 – Fugitive Dust Suppression and particulate Monitoring Program at Inactive Hazardous Waste Sites, (HWR-89-4031), this CAMP addresses methods that will be utilized to monitor particulate (dust) levels at the perimeter of, and within the work areas of the Site. If elevated levels of particulate emissions are encountered, this CAMP identifies the procedures that will be employed to mitigate elevated particulate levels.

Air monitoring procedures for these COCs are also included in this CAMP. Monitoring for COCs in, or near, the work areas of the Site will also be conducted per the HASP.

2.0 METHODOLOGY

This CAMP has been designed for remedial investigation activities at the Site. The CAMP pertains primarily to remedial investigation activities that disturb soil and groundwater at the Site. The following procedures will be implemented to monitor and, if necessary, mitigate the potential migration of fugitive particulate and/or COC emissions at the Site.

2.1 Site Background Monitoring

Each day of field work during the ground intrusive work a wind sock or flag will be used to monitor wind direction in the work areas. Based upon daily wind conditions three temporary monitoring points, one up wind, one downwind, and one in the direction of the closest sensitive receptor to the work areas, will be identified. The wind direction will be observed and noted frequently throughout the day and monitoring stations will be adjusted appropriately.

This CAMP will utilize a photoionization Detector (PID) to screen the ambient air in the work areas for total VOCs and a DustTrak tm Model 8530 aerosol monitor or equivalent for measuring particulates.

Each day, prior to the commencement of the ground intrusive work, background concentrations of particulates and VOCs will be measured and recorded as 15 minute averages at the identified three locations (one upwind, one downwind, and one in the direction of the closest sensitive receptor) with the typical equipment engines and any other gas/diesel engines operating on Site. This will be established as the Site background level for the day.

2.2 VOC Monitoring, Response Levels and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis. The PID will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will 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 will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will 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 will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will 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 will be shutdown.
4. All 15-minute readings will be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

2.3 Particulate Monitoring, Response Levels and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The equipment will 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 will 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 will 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 will be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

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LABELLA Associates, P.C. | Engineering Architecture Environmental Planning

APPENDIX 3

Quality Control Program

Quality Control (QC) Program

Location:

Former Michelsen Furniture Site
182 Avenue D & 374 Conkey Avenue
Rochester, New York

Prepared For:

Urban League of Rochester
Economic Development Corporation
312 State Street
Rochester, New York 14614

LaBella Project No. 214539

June 2014

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1. Introduction

LaBella's Quality Control (QC) Program is an integral part of its approach to environmental investigations. By maintaining a rigorous QC program, our firm is able to provide accurate and reliable data. QC also provides safe working conditions for all on-site workers.

The Quality Control program contains procedures which provide for collected data to be properly evaluated, and which document that quality control procedures have been followed in the collection of samples. The quality control program represents the methodology and measurement procedures used in collecting quality field data. This methodology includes the proper use of equipment, documentation of sample collection, and sample handling practices.

Procedures used in the firm's Quality Control program are compatible with federal, state, and local regulations, as well as, appropriate professional and technical standards.

This QC program has been organized into the following areas:

- QC Objectives and Checks
- Field Equipment, Handling, and Calibration
- Sampling Techniques
- Sample Handling and Packaging

It should be noted that the Remedial Investigation (RI) Work Plan may have project specific details that will differ from the procedures in this QC program. In such cases, the RI Work Plan should be followed (subsequent to regulatory approval).

2. Quality Control Objectives

The United States Environmental Protection Agency (EPA) has identified five general levels of analytical data quality as being potentially applicable to site investigations conducted under CERCLA. These levels are summarized below:

- **Level I -** Field screening. This level is characterized by the use of portable instruments, which can provide real-time data to assist in the optimization of sampling point locations and for health and safety support. Data can be generated regarding the presence or absence of certain contaminants (especially volatiles) at sampling locations.
- **Level II -** Field analysis. This level is characterized by the use of portable analytical instruments, which can be used on site or in mobile laboratories stationed near a site (close-support labs). Depending upon the types of contaminants, sample matrix, and personnel skills, qualitative and quantitative data can be obtained.
- **Level III -** Laboratory analysis using methods other than the Contract Laboratory Program (CLP) Routine Analytical Services (RAS). This level is used primarily in support of engineering studies using standard EPA-approved procedures. Some procedures may be equivalent to CLP RAS, without the CLP requirements for documentation.
- **Level IV -** CLP Routine Analytical Services. This level is characterized by rigorous QC

protocols and documentation and provides qualitative and quantitative analytical data. Some regions have obtained similar support via their own regional laboratories, university laboratories, or other commercial laboratories.

- **Level V -** Non-standard methods. Analyses, which may require method modification and/or development. CLP Special Analytical Services (SAS) are considered Level V.

Unless stated otherwise, all data will be generated in accordance with Level IV. When CLP methodology is not available, federal and state approved methods will be utilized. Level III will be utilized, as necessary, for non-CLP RAS work which may include ignitability, corrosivity, reactivity, EP toxicity, and other state approved parameters for characterization. Level I will be used throughout the RI for health and safety monitoring activities.

All measurements will be made to provide that analytical results are representative of the media and conditions measured. Unless otherwise specified, all data will be calculated and reported in units consistent with other organizations reporting similar data to allow comparability of data bases among organizations. Data will be reported in µg/L and mg/L for aqueous samples, and µg/kg and mg/kg (dry weight) for soils, or otherwise as applicable.

The characteristics of major importance for the assessment of generated data are accuracy, precision, completeness, representativeness, and comparability. Application of these characteristics to specific projects is addressed later in this document. The characteristics are defined below.

2.1. Accuracy

Accuracy is the degree of agreement of a measurement or average of measurements with an accepted reference or "true" value and is a measure of bias in the system.

2.2. Precision

Precision is the degree of mutual agreement among individual measurements of a given parameter.

2.3. Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under correct normal conditions.

2.4. Representativeness

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition

Careful choice and use of appropriate methods in the field will ensure that samples are representative. This is relatively easy with water or air samples since these components are homogeneously dispersed. In soil and sediment, contaminants are unlikely to be evenly distributed, and thus it is important for the sampler and analyst to exercise good judgment when removing a sample.

2.5. Comparability

Comparability expresses the confidence with which one data set can be compared to another. The data sets may be inter- or intra- laboratory.

3.0 Measurement of Data Quality

3.1. Accuracy

Accuracy of a particular analysis is measured by assessing its performance with "known" samples. These "knowns" take the form of EPA standard reference materials, or laboratory prepared solutions of target analytes spiked into a pure water or sample matrix. In the case of GC or GC/MS analyses, solutions of surrogate compounds, which can be spiked into every sample and are designed to mimic the behavior of target analytes without interfering with their determination, are used.

In each case the recovery of the analyte is measured as a percentage, correcting for analytes known to be present in the original sample if necessary, as in the case of a matrix spike analysis. For EPA supplied known solutions, this recovery is compared to the published data that accompany the solution.

For the firm's prepared solutions, the recovery is compared to EPA-developed data or the firm's historical data as available. For surrogate compounds, recoveries are compared to EPA CLP acceptable recovery tables.

If recoveries do not meet required criteria, then the analytical data for the batch (or, in the case of surrogate compounds, for the individual sample) are considered potentially inaccurate. The analyst or his supervisor must initiate an investigation of the cause of the problem and take corrective action. This can include recalibration of the instrument, reanalysis of the QC sample, reanalysis of the samples in the batch, or flagging the data as suspect if the problems cannot be resolved. For highly contaminated samples, recovery of the matrix spike may depend on sample homogeneity. As a rule, analyses are not corrected for recovery of matrix spike or surrogate compounds.

3.2. Precision

Precision of a particular analysis is measured by assessing its performance with duplicate or replicate samples. Duplicate samples are pairs of samples taken in the field and transported to the laboratory as distinct samples. Their identity as duplicates is sometimes not known to ASC and usually not known to bench analysts, so their usefulness for monitoring analytical precision at bench level is limited. For most purposes, precision is determined by the analysis of replicate pairs (i.e., two samples prepared at the laboratory from one original sample). Often in replicate analysis the sample chosen for replication does not contain target analytes so that quantitation of precision is impossible. For EPA CLP analyses, replicate pairs of spiked samples, known as matrix spike/matrix spike duplicate samples, are used for precision studies. This has the advantage that two real positive values for a target analyte can be compared.

Precision is calculated in terms of Relative Percent Difference (RPD).

- Where X_1 and X_2 represent the individual values found for the target analyte in the two replicate analyses or in the matrix spike/matrix spike duplicate analyses.
- RPDs must be compared to the method RPD for the analysis. The analyst or his supervisor must investigate the cause of RPDs outside stated acceptance limits. This may include a visual inspection of the sample for non homogeneity, analysis of check samples, etc. Follow-up action may include sample reanalysis or flagging of the data as suspect if problems cannot be resolved.
- During the data review and validation process (see Section 9), field duplicate RPDs are assessed as a measure of the total variability of both field sampling and laboratory analysis.

3.3. Completeness

Completeness for each parameter is calculated as follows:

- The firm's target value for completeness for all parameters is 100%. A completeness value of 95% will be considered acceptable. Incomplete results will be reported to the site managers. In planning the field sample collection, the site manager will plan to collect field duplicates from identified critical areas. This procedure should assure 100% completeness for these areas.

3.4. Representativeness

The characteristic of representativeness is not quantifiable. Subjective factors to be taken into account are as follows:

- The degree of homogeneity of a site;
- The degree of homogeneity of a sample taken from one point in a site; and
- The available information on which a sampling plan is based.

To maximize representativeness of results, sampling techniques and sample locations will be carefully chosen so that they provide laboratory samples representative of the site and the specific area. Within the laboratory, precautions are taken to extract from the sample bottle an aliquot representative of the whole sample. This includes premixing the sample and discarding pebbles from soil samples.

4. QC Targets

Target values for detection limit, percent spike recovery and percent "true" value of known check standards, and RPD of duplicates/replicates are included in the QCP, Analytical Procedures. Note that tabulated values are not always attainable. Instances may arise where high sample concentrations, non homogeneity of samples, or matrix interferences preclude achievement of target detection limits or other quality control criteria. In such instances, the firm will report reasons for deviations from these detection limits or noncompliance with quality control criteria.

5. Sampling Procedures

This section describes the sampling procedures to be utilized for each environmental medium that will be collected and analyzed in accordance with appropriate state and federal requirements. All procedures described are consistent with EPA sampling procedures as described in SW-846, third edition, September 1986. All samples will be delivered to the laboratory within 24 to 28 hours of collection.

6. Soil & Groundwater Investigation

The groundwater sampling plan outlined in this subsection has been prepared in general accordance with RCRA Groundwater Monitoring Technical Enforcement Guidance Document 9950.1 (September 1986), Office of Solid Waste and Emergency Response.

Prior to drilling, all drill sites will be cleared with appropriate utility companies to avoid potential accidents relating to underground utilities.

6.1. Test Borings and Well Installation

6.1.1. Drilling Equipment

Direct Push Geoprobe® Soil Borings:

Borings will be advanced with a Geoprobe® direct push sampling system. The use of direct push technology allows for rapid sampling, observation, and characterization of relatively shallow overburden soils. The Geoprobe® utilizes a four-foot macro-core sampler, with disposable polyethylene sleeves. Soil cores will be retrieved in four-foot sections, and can be easily cut from the polyethylene sleeves for observation and sampling. The macro-core sampler will be decontaminated between samples and borings using an alconox and water solution.

6.1.2. Drilling Techniques

Direct Push Geoprobe® Advanced Borings:

Prior to initiating drilling activities, the Geoprobe®, macro cores, drive rods, pertinent equipment, well pipe and screens will be steam cleaned or washed with an alconox and water solution followed by a clean water rinse. This cleaning procedure will also be used between each boring. Throughout and after the cleaning processes, direct contact between the equipment and the ground surface will be avoided. Plastic sheeting and/or clean support structures (e.g., pallets, sawhorses) will be used to create a designated decontamination area. The drilling rig and all equipment will be steam cleaned upon completion of the investigation and prior to leaving the site.

Test borings will be advanced with 2-inch direct push macro-cores through overburden soils. Drilling fluids, other than water from a NYSDEC-approved source, will not be allowed without special consideration and agreement from NYSDEC. The use of lubricants is also not allowed unless approved by the NYSDEC representative.

It will be the responsibility of the consultant to arrange for the appropriate drilling equipment to be present at the site. Standby time to arrange for additional equipment or a water supply will not be allowed

unless caused by unexpected site conditions.

During the drilling, a Photoionization detector (PID) will be used to monitor the gases exiting the hole. Macro-core cuttings will be contained if the PID meter readings are greater than 5 ppm above background or the cuttings show visible evidence of contamination, or as specified in the RI Work Plan.

6.1.3. Well Casing (Riser)

Direct Push Geoprobe® Groundwater Monitoring Wells:

Direct Push Geoprobe® advanced groundwater-monitoring wells will use 2.25-inch threaded flush joint PVC pipe.

6.1.4. Well Screen

Direct Push Geoprobe® Groundwater Monitoring Wells:

Direct Push Geoprobe® advanced groundwater-monitoring wells utilized 2.25-inch diameter well screen. Groundwater-monitoring wells will be set to intersect the top of the shallow overburden groundwater table. Each Geoprobe® advanced well will be equipped with 5 to 10 feet (based on anticipated groundwater level) of 0.020 inch slotted PVC screen connected to an appropriate length of PVC riser to complete the well installation.

6.1.5. Artificial Sand Pack

Granular backfill will be chemically and texturally clean (as determined using a 10x hand lens), inert, siliceous, and of appropriate grain size for the screen slot size and the host environment. Sand pack grain size will be selected based on sieve analyses of formation samples. The sand pack will be installed using a tremie pipe and the casing will be equipped with centralizers (wells 16 ft. or deeper only) to minimize the tendency for particle separation and bridging. Prior to casing and screen insertion, a minimum of 6-in of gravel-pack bedding will be placed in the bottom of the hole. The well screen and casing will be installed, and the sand pack placed around the screen and casing to a depth extending at least 25 percent of the screen length above the top of the screen, where possible.

6.1.6. Bentonite Seal

A minimum 2-foot thick seal of tamped bentonite pellets will be placed directly on top of the sand pack, and care will be taken to avoid bridging. The seal will be measured immediately after placement, without allowance for swelling. In the event that the bentonite seal cannot be 2-ft. thick due to a shallow water table, a seal at least 1-ft. thick will be set.

6.1.7. Grout Mixture

Upon completion of the bentonite seal, the well will be grouted with a non-shrinking cement grout (e.g., Volclay^{R}) mix to be placed from the top of the bentonite seal to the ground surface. The cement grout shall consist of a mixture of Portland cement (ASTM C 150) and water, in the proportion of not more than 7 gallons of clean water per bag of cement (1 cubic foot or 94 pounds). Additionally, 3% by weight of bentonite powder shall be added, if permitted.

6.1.8 Surface Protection

At all times during the progress of the work, precautions shall be used to prevent tampering with or the entrance of foreign material into the well. Upon completion of the well, a suitable lockable cap shall be installed to prevent material from entering the well. The PVC well riser shall be protected by a flush mounted road box set into a concrete pad. A concrete pad, sloped away from the well, shall be constructed around the flush mount road box at ground level.

Any well that is to be temporarily removed from service or left incomplete due to delay in construction shall be capped with a watertight cap and equipped with a "vandal-proof" cover, satisfying applicable NYSDEC regulations or recommendations.

6.1.9. Surveying

Coordinates and elevations will be established for each monitoring well and sampling location. Elevations to the closest 0.01 foot shall be used for the survey. These elevations shall be referenced to a regional, local, or project-specific datum. USGS benchmarks will be used whenever available. The location, identification, coordinates, and elevations of the wells will be plotted on maps with a scale large enough to show their location with reference to other structures at each site.

6.1.10. Well Development

After completion of the well, but not sooner than 24 hours after grouting is completed, development will be accomplished using pumping, bailing, or surge blocking. No dispersing agents, acids, disinfectants, or other additives will be used during development or introduced into the well at any other time. During development, water will be removed throughout the entire water column by periodically lowering and raising the pump intake (or bailer stopping point).

Well development will include washing the entire well cap and the interior of the well casing above the water table, using only water from the well itself. As a result of this operation, the well casing will be free of extraneous materials (grout, bentonite, and sand) inside the riser, well cap, and blank casing between top of the well casing and water table. This washing will be conducted before and/or during development; not after development. Development water will be either properly contained and treated as waste until the results of chemical analysis of samples are obtained or discharged on site as determined by the site-specific work plans and/or consultation with the NYSDEC representatives on site.

Development will be completed by removing the approximate volume of water introduced during drilling (if any) and an additional five (5) well volumes. Well development will be performed using dedicated bailers and/or pumping equipment (depending on volumes), and will continue until groundwater turbidity reaches 50 National Turbidity Units (NTUs), or lower. In the event that 50 NTUs is not reached after removing a reasonable number of well volumes (10), the NYSDEC will be contacted to request ceasing development. If dedicated equipment is not used, then the equipment will be decontaminated between each well (alconox wash with potable water rinse). If the NYSDEC Project Manager agrees that removal of this volume of water is impractical, then LaBella will work with NYSDEC to develop an alternate well development protocol.

7. Geologic Logging and Sampling

At each soil boring location, the boring will be advanced through overburden using either a drill rig and hollow-stem auger or direct push technology; soils will be visually inspected for stains and monitored with a PID to help determine potential for vertical migration of contaminants. Soil samples will be collected continuously in both the unsaturated soil zone and the saturated zone. Selected wells will be sampled continuously over the entire depth of the well. The sampling device will be decontaminated according to procedures outlined in the Decontamination section of this document. Soil samples will be screened in the field for volatile organic vapors using a PID, classified in accordance with Unified Soil Classification System (USCS) specifications, and logged. Samples will be stored in glass jars until they are needed for testing or the project is complete.

Hydrogeologic suitability for well emplacement will be determined by the supervising geologist in consultation with NYSDEC, based on thickness and estimated hydraulic conductivity of the saturated zone encountered. If necessary, the borehole will be advanced to water or abandoned.

8. Hydraulic Conductivity Testing Procedures

If necessary, single-well, rising head tests will be performed in order to determine the in-place hydraulic conductivity of unconsolidated and/or consolidated geologic materials, which occur in the monitoring interval of newly installed wells. The tests will be performed by a qualified hydrogeologist. These tests involve lowering the water level in the well and measuring the change in head with respect to time as the well is allowed to recover. In wells which are slow to recover, the water level will be bailed down as described below. The measurements in these wells will be taken manually. Wells which recover too quickly for this method will be tested by removing one bailer of water and the recovery measured by means of a pressure transducer system.

The rising head tests for wells with rapid recovery rates will be conducted as follows:

- The static water level in the well to be tested is measured and recorded;
- A pressure transducer is placed in the well to a minimum depth of three feet below the static water level;
- Readings are made using the data logger until three consecutive readings are the same (equilibrium conditions);
- The data logger is then calibrated to read 0.00 feet at static conditions. A pre-cleaned bailer is then lowered into the well and placed just below the water surface.
- Water level measurements are made until the water level returns to static conditions following introduction of the bailer. If static conditions are not reached within 15 minutes following introduction of the bailer, the well will be tested using the procedures described below for slow recovery wells;
- Once static conditions are reestablished, the bailer is rapidly removed from the water column thereby creating an instantaneous decline of the water level in the well. Coincident with the withdrawal of the bailer, automatic logging of the water levels is initiated using the data logger. The primary goal in the recovery test is to "instantaneously" remove a volume of water that will result in a measurable head decline, the recovery of which (to static conditions) can be monitored over time. Such an instantaneous withdrawal results in recovery due to contributions of flow from the surrounding formation. This flow is controlled by its hydraulic conductivity and not by other factors such as storage effects;

- The water level measurements will continue until water levels recover to within a minimum of 10 percent of the original static water level (90 percent recovery), or an elapsed time of one hour. If the well has not recovered to static conditions after one hour at the discretion of the hydrogeologist, the transducer will be removed and the well will be tested at a later date using the procedures described below for slow recovery wells.
- Data stored in the data loggers will be "dumped" to a hard copy printout using a field printer or to a magnetic disk using a portable computer. If field printouts are used, they will be dated and signed by the hydrogeologist.

For wells with slow recovery rates, the following procedures will be used:

- The static water level is measured and recorded;
- The well is bailed by hand until the depth to water appears to stabilize based on the depth of travel of the bailer rope or to the top of the open or screened interval in wells which are screened below the standing water level;
- The bailer is then removed and water level measurements are collected by hand (measuring tape or electronic water level indicator) at a frequency, which will provide approximately 15 to 20 data, points during recovery (to within 10 percent of the total drawdown), if feasible. Water level measurements are recorded on the hydraulic conductivity testing report.
- A pre-cleaned bailer (one for each well) will be used in the rising head testing. All equipment entering the well, such as the transducer and transducer cable, will be cleaned prior to reuse in accordance with the Decontamination section below. All well water and rinse water generated by the tests will be collected in appropriate containers and disposed of in accordance with the Investigation Derived Materials section below.
- The data from both types of rising head tests will be reduces and evaluated.
- The following equation will be used to calculate the in-situ hydraulic conductivity of the formation opposite the interval of the piezometer (Hvorslev, 1951).

$$k = d^2 \ln \frac{\left[\frac{2mL}{D}\right]}{8L(t_2 - t_1)} \ln \frac{H_1}{H_2}$$

Where:

K = hydraulic conductivity (ft./min.)
d = casing diameter (ft.)
L = intake length (ft.)
D = intake diameter (ft.)
t_1 = time 1 from semilog graph (min.)
t_2 = time 2 from semilog graph (min.)
H_1 = residual head (ft.) corresponding to t_1
H_2 = residual head (ft.) corresponding to t_2
m = square root of the ratio of horizontal to vertical permeability (an estimated value)

9. Groundwater Sampling Procedures

The groundwater in all new and existing monitoring wells will be allowed to stabilize for 7 days following development and permeability testing. Water levels will be measured to within 0.01 feet prior to purging and sampling. A temporary staff gauge or other surface water elevation measuring device will be established on any nearby surface water body, which may significantly influence groundwater movement. The surface elevation of these water bodies will be checked whenever groundwater elevations are measured. Purging and sampling of each well will be accomplished using precleaned dedicated PVC bailers on new polypropylene line. Purging will be less aggressive than development to avoid turbidity problems (e.g., avoid "free-falling" bailers). In general, wells will be purged until the pH, conductivity, temperature, and turbidity of the water being pumped from the well have stabilized. All wells will be purged of at least three well-bore volumes or to dryness.

Groundwater samples will be collected according to the following procedures and in the volumes specified in Table 5-1:

- Water clarity will be quantified during sampling with a turbidity meter;
- When transferring water from the bailer or pump line to sample containers, care will be taken to avoid agitating the sample, since agitation promotes the loss of volatile constituents;
- Any observable physical characteristics of the groundwater (e.g., color, sheen, odor, turbidity) at the time of sampling will be recorded; and
- Weather conditions (i.e., air temperature, sky condition, recent heavy rainfall, drought conditions) at the time of sampling will be recorded.

All groundwater samples and their accompanying QC samples will be run for volatile organic chemicals using NYSDEC ASP 91-1.

10. Geotechnical Sampling

If necessary, a grain size analysis will be conducted by sieving for two non-cohesive units, and Atterberg limits for one cohesive unit, (ASTM methods D 4318-84 and D 422-63, respectively) in each borehole. Grain size analysis by hydrometer will be performed on soils where 20 percent of the sample is less than No. 200 sieve size (i.e., silt or clay). Site-specific work plans indicate specific sampling requirements for physical or geotechnical testing.

Remolded permeability samples will be analyzed in accordance with ASTM D-5084.

11. Management of Investigative-Derived Waste

Purpose:

The purposes of these guidelines are to ensure the proper holding, storage, transportation, and disposal of materials that may contain hazardous wastes. Investigation-derived waste (IDW) included the following:

- Drill cuttings, discarded soil samples, drilling mud solids, and used sample containers;
- Well development and purge waters and discarded groundwater samples;
- Decontamination waters and associated solids;
- Soiled disposable personal protective equipment (PPE);

- Used disposable sampling equipment;
- Used plastic sheeting and aluminum foil;
- Other equipment or materials that either contain or have been in contact with potentially-impacted environmental media.
- Because these materials may contain regulated chemical constituents, they must be managed as a solid waste. This management may be terminated id characterization analytical results indicate the absence of these constituents.

Procedure:

1. Contain all investigation-derived wastes in Department of Transpiration (DOT)-approved 55-gallon drums, roll-off boxes, or other containers suitable for the wastes.
2. Contain wastes from separate borings or wells in separate containers (i.e. do not combine wastes from several borings/wells in a single container, unless it is a container used specifically for transfer purposes, or unless specific permission to do so has been provided by the LaBella Project Manager. Unused samples from surface sample locations within a given area may be combined.
3. To the extent practicable, separate solids from drilling muds, decontamination waters, and similar liquids. Place solids within separate containers.
4. Transfer all waste containers to a staging area. Access to this area will be controlled. Waste containers must be transferred to the staging area as soon as practicable after the generating activity is complete.
5. Pending transfer, all containers will be covered and secured when not immediately attended,
6. Label all containers with regard to contents, origin, and date of generation. Use indelible ink for all labeling.
7. Collect samples for waste characterization purposes, use boring/well sample analytical data for characterization.
8. For wastes determined to be hazardous in character, be aware on accumulation time limitations. Coordinate the disposal of these wastes with the Owner and NYSDEC.
9. Dispose of investigation-derived wastes as follows;

    - Soil, water, and other environmental media for which analysis does not detect organic constituents, and for which inorganic constituents are at levels consistent with background, may be spread on-site or otherwise treated as a non0-waste material.
    - Soils, water, and other environmental media in which organic compounds are detected or metals are present above background will be disposed as industrial waste. Alternate disposition must be consistent with applicable State and Federal laws.

    - Personal protective equipment, disposable bailers, and similar equipment may be disposed as municipal waste, unless waste characterization results mandate disposal as industrial wastes

12. Decontamination

Sampling methods and equipment have been chosen to minimize decontamination requirements and to prevent the possibility of cross-contamination. Decontamination of equipment will be performed between discrete sampling locations. Equipment used to collect composite samples will not require decontamination between sub-sample collection; however decontamination of equipment will be performed between separate composite samples. All drilling equipment will be decontaminated prior to drilling, after drilling each monitoring well, and after the completion of all drilling. Special attention will be given to the drilling assembly, augers, and PVC casing and screens.

Drilling decontamination will consist of:

- Steam cleaning;
- Scrubbing with brushes, if soil remains on equipment; and
- Steam rinse.

Split spoons and other non-disposable equipment will be decontaminated between each sampling event. The sampler will be cleaned prior to each use, by one of the following procedures:

- Initially cleaned of all foreign matter;
- Sanitized with a steam cleaner;

OR

- Initially cleaned of all foreign matter;
- Scrubbed with brushes in trisodium phosphate or alconox solution;
- Rinsed with deionized water;
- Rinsed with pesticide grade methanol;
- Triple rinsed with deionized water; and
- Allowed to air dry.

13. Sample Containers

The volumes and containers required for the sampling activities are included in pre-washed sample containers will be ordered directly from a firm, which prepares the containers in accordance with EPA bottle washing procedures.

Table 1
Water Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Maximum Holding Time
Volatile Organics	40-ml glass vial with Teflon-backed septum	Two (2); fill completely, no air space	Cool to 4° C (ice in cooler), Hydrochloric acid to pH <2	7 days
Semivolatile Organics	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Pesticides	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
PCBs	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Metals	500-ml polyethylene	One (1); fill completely	Cool to 4° C (Nitric acid to pH <2	6 months

* Holding time is based on verified time of sample receipt at laboratory.

Note: All sample bottles will be prepared in accordance with USEPA bottle washing procedures. These procedures are incorporated in LaBella Associates Quality Control Procedures Manual, January, 1992

TABLE 2
Soil Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Maximum Holding Time
Volatile Organics, Semivolatile Organics, PCBs, and Pesticides	8-oz, glass jar with Teflon-lined cap	Two (2), fill as completely as possible	Cool to 4° C (ice in cooler)	7 days
RCRA Characterization	8-oz. glass jar with Teflon-lined cap	One (1); fill completely	Cool to 4° C (ice in cooler)	Must be extracted within 10 days; analyzed with 30 days

* Holding time is based on the times from verified time of sample receipt at the laboratory.

Note: All sample bottles will be prepared in accordance with USEPA bottle washing procedures. These procedures are incorporated in LaBella Associates Quality Control Procedures Manual, January, 1992.

TABLE 3
List of Major Instruments for Sampling and Analysis

- MSA 360 0_2 /Explosimeter
- S.E. International Radiation Monitor Model 4C
- Photovac Micro Tip FID or PID
- Organic Vapor Analyzer Foxboro (128)
- Hollige Series 963 Nephlometer (turbidity meter)
- EM-31 Geomics Electromagnetic Induction Device
- pH/Temperature/Conductivity Meter - Portable
- Hewlett Packard (HP) 1000 computer with RTE-6 operating system; and HP 9144 computer with RTE-4 operating system equipped with Aquarius software for control and data acquisition from gas chromatograph/mass spectrometer (GC/MS) systems; combined wiley and National Bureau of Standards (NBS) mass spectral library; and data archiving on magnetic tape
- Viriam 6000 and 37000 gas chromatrographs equipped with flame ionization, electron capture, photoionization and wall detectors as appropriate for various analyses,, and interfaced to Variam DS604 or D5634 data systems for processing data.
- Spectra-Physics Model SP 4100 and SP 4270 and Variam 4270 cam puting integrators
- Perkin Eimer (PE) 3000% and 3030% fully Automated Atomic Absorption Spectrophotometers (AAS) with Furnace Atomizer and background correction system
- PE Plasma II Inductively Coupled Argon Plasma (ICAP) Spectre meter with PE7500 laboratory computer
- Dionex 20001 ion chromatograph with conductivity detector for anion analysis, with integrating recorder

14. Sample Custody

This section describes standard operating procedures for sample identification and chain-of-custody to be utilized for all Phase II field activities. The purpose of these procedures is to ensure that the quality of the samples is maintained during their collection, transportation, and storage through analysis. All chain-of-custody requirements comply with standard operating procedures indicated in EPA sample handling protocol.

Sample identification documents must be carefully prepared so that sample identification and chain-of-custody can be maintained and sample disposition controlled. Sample identification documents include:

- Field notebooks,
- Sample label,
- Custody seals, and
- Chain-of-custody records.

15. Chain-of-Custody

The primary objective of the chain-of-custody procedures is to provide an accurate written or computerized record that can be used to trace the possession and handling of a sample from collection to completion of all required analyses. A sample is in custody if it is:

- In someone's physical possession;
- In someone's view;
- Locked up; or
- Kept in a secured area that is restricted to authorized personnel.

15.1. Field Custody Procedures

- As few persons as possible should handle samples.
- Sample bottles will be obtained precleaned from a source such as I-Chem. Coolers or boxes containing cleaned bottles should be sealed with a custody tape seal during transport to the field or while in storage prior to use.
- The sample collector is personally responsible for the care and custody of samples collected until they are transferred to another person or dispatched properly under chain-of-custody rules.
- The sample collector will record sample data in the notebook.
- The site manager will determine whether proper custody procedures were followed during the fieldwork and decide if additional samples are required.

15.2. Sample Tags

Sample tags attached to or affixed around the sample container must be used to properly identify all samples collected in the field. The sample tags are to be placed on the bottles so as not to obscure any QC lot numbers on the bottles; sample information must be printed in a legible manner using waterproof ink. Field identification must be sufficient to enable cross-reference with the logbook. For chain-of-custody purposes, all QC samples are subject to exactly the same custodial procedures and documentation as "real" samples.

15.3. Transfer of Custody and Shipment

- The coolers in which the samples are packed must be accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving them must sign, date, and note the time on the chain-of-custody record. This record documents sample custody transfer
- Shipping containers must be sealed with custody seals for shipment to the laboratory. The method of shipment, name of courier, and other pertinent information are entered in the "Remarks" section of the chain-of-custody record and traffic reports.
- All shipments must be accompanied by the chain-of-custody record identifying their contents. The original record accompanies the shipment. The other copies are distributed appropriately to the site manage.

- If sent by mail, the package is registered with return receipt requested. If sent by common carrier, a bill of lading is used. Freight bills, Postal Service receipts, and bill of lading are retained as part of the permanent documentation.

15.4. Chain-of-Custody Record

The chain-of-custody record must be fully completed in duplicate, using black carbon paper where possible, by the field technician who has been designated by the project manager as responsible for sample shipment to the appropriate laboratory for analysis. In addition, if samples are known to require rapid turnaround in the laboratory because of project time constraints or analytical concerns (e.g., extraction time or sample retention period limitations, etc.), the person completing the chain-of-custody record should note these constraints in the "Remarks" section of the record.

15.5. Laboratory Custody Procedures

A designated sample custodian accepts custody of the shipped samples and verifies that the sample identification number matches that on the chain-of-custody record and traffic reports, if required. Pertinent information as to shipment, pickup, and courier is entered in the "Remarks" section.

15.6. Custody Seals

Custody seals are preprinted adhesive-backed seals with security slots designed to break if the seals are disturbed. Sample shipping containers (coolers, cardboard boxes, etc., as appropriate) are sealed in as many places as necessary to ensure security. Seals must be signed and dated before use. On receipt at the laboratory, the custodian must check (and certify, by completing the package receipt log and LABMIS entries) that seals on boxes and bottles are intact. Strapping tape should be placed over the seals to ensure that seals are not accidentally broken during shipment.

16. Documentation

16.1. Sample Identification

All containers of samples collected from the project will be identified using the following format on a label or tag fixed to the sample container (labels are to be covered with Mylar tape):

XX-YY-O/D

- XX This set of initials indicates the specific Phase II sampling project
- YY These initials identify the sample location. Actual sample locations will be recorded in the task log.
- O/D An "O" designates an original sample; "D" identifies it as a duplicate.

Each sample will be labeled, chemically preserved, if required and sealed immediately after collection. To minimize handling of sample containers, labels will be filled out prior to sample collection. The sample label will be filled out using waterproof ink and will be firmly affixed to the sample containers and protected with Mylar tape. The sample label will give the following information:

- Name of sampler,
- Date and time of collection,

- Sample number,
- Analysis required,
- pH, and
- Preservation.

16.2. Daily Logs

Daily logs and data forms are necessary to provide sufficient data and observations to enable participants to reconstruct event that occurred during the project and to refresh the memory of the field personnel if called upon to give testimony during legal proceedings. All daily logs will be kept in a bound waterproof notebook containing numbered pages. All entries will be made in waterproof ink, dated, and signed. No pages will be removed for any reason. Corrections will be made according to the procedures given at the end of this section. The daily logs will include a site log and task log.

The site log is the responsibility of the site manager and will include a complete summary of the day's activity at the site.

The **Task Log** will include:

- Name of person making entry (signature).
- Names of team members on-site.
- Levels of personnel protection:
  - Level of protection originally used;
  - Changes in protection, if required; and
  - Reasons for changes.
- Time spent collecting samples.
- Documentation on samples taken, including:
  - Sampling location and depth station numbers;
  - Sampling date and time, sampling personnel;
  - Type of sample (grab, composite, etc.); and
  - Sample matrix.
- On-site measurement data.
- Field observations and remarks.
- Weather conditions, wind direction, etc.
- Unusual circumstances or difficulties.
- Initials of person recording the information.

17. Corrections to Documentation

17.1. Notebook

As with any data logbooks, no pages will be removed for any reason. If corrections are necessary, these must be made by drawing a single line through the original entry (so that the original entry can still be read) and writing the corrected entry alongside. The correction must be initialed and dated. Most corrected errors will require a footnote explaining the correction.

17.2. Sampling Forms

As previously stated, all sample identification tags, chain-of-custody records, and other forms must be

written in waterproof ink. None of these documents are to be destroyed or thrown away, even if they are illegible or contain inaccuracies that require a replacement document.

If an error is made on a document assigned to one individual, that individual may make corrections simply by crossing a line through the error and entering the corrected information. The incorrect information should not be obliterated. Any subsequent error discovered on a document should be corrected by the person who made the entry. All corrections must be initialed and dated.

17.3. Photographs

Photographs will be taken as directed by the site manager. Documentation of a photograph is crucial to its validity as a representation of an existing situation. The following information will be noted in the task log concerning photographs:

- Date, time, location photograph was taken;
- Photographer (signature);
- Weather conditions;
- Description of photograph taken;
- Reasons why photograph was taken;
- Sequential number of the photograph and the film roll number; and
- Camera lens system used.

After the photographs have been developed, the information recorded in the field notebook should be transferred to the back of the photographs

18. Sample Handling, Packaging, and Shipping

The transportation and handling of samples must be accomplished in a manner that not only protects the integrity of the sample, but also prevents any detrimental effects due to the possible hazardous nature of samples. Regulations for packaging, marking, labeling, and shipping hazardous materials are promulgated by the United States Department of Transportation (DOT) in the Code of Federal Regulation, 49 CFR 171 through 177. All samples will be delivered to the laboratory with 24 to 48 hours from the day of collection.

All chain-of-custody requirements must comply with standard operating procedures in the EPA sample handling protocol. All sample control and chain-of-custody procedures applicable to the Consultant are presented in the Field Personnel Chain-of-Custody Documentation and Quality Control Procedures Manual, January 1992.

18.1. Sample Packaging

Samples must be packaged carefully to avoid breakage or contamination and must be shipped to the laboratory at proper temperatures. The following sample packaging requirements will be followed:

- Sample bottle lids must never be mixed. All sample lids must stay with the original containers.
- The sample volume level can be marked by placing the top of the label at the appropriate sample height, or with a grease pencil. This procedure will help the laboratory to determine if any leakage occurred during shipment. The label should not cover any bottle preparation

QC lot numbers.

- All sample bottles are placed in a plastic bag to minimize the potential for vermiculite contamination.
- Shipping coolers must be partially filled with packing materials and ice when required, to prevent the bottles from moving during shipment.
- The sample bottles must be placed in the cooler in such a way as to ensure that they do not touch one another.
- The environmental samples are to be cooled. The use of "blue ice" or some other artificial icing material is preferred. If necessary, ice may be used, provided that it is placed in plastic bags. Ice is not to be used as a substitute for packing materials.
- Any remaining space in the cooler should be filled with inert packing material. Under no circumstances should material such as sawdust, sand, etc., be used.
- A duplicate custody record and traffic reports, if required must be placed in a plastic bag and taped to the bottom of the cooler lid. Custody seals are affixed to the sample cooler.

18.2. Shipping Containers

Shipping containers are to be custody-sealed for shipment as appropriate. The container custody seal will consist of filament tape wrapped around the package at least twice and custody seals affixed in such a way that access to the container can be gained only by cutting the filament tape and breaking a seal.

Field personnel will make arrangements for transportation of samples to the lab. When custody is relinquished to a shipper, field personnel will telephone the lab custodian to inform him of the expected time of arrival of the sample shipment and to advise him of any time constraints on sample analysis. The lab must be notified as early in the week as possible, and in no case later than 3 p.m. (EST) on Thursday, regarding samples intended for Saturday delivery.

18.3. Marking and Labeling

- Use abbreviations only where specified.
- The words "This End Up" or "This Side Up" must be clearly printed on the top of the outer package. Upward pointing arrows should be placed on the sides of the package. The words "Laboratory Samples" should also be printed on the top of the package.
- After a sample container has been sealed, two chain-of-custody seals are placed on the container, one on the front and one on the back. The seals are protected from accidental damage by placing strapping tape over then.
- If samples are designated as medium or high hazard, they must be sealed in metal paint cans, placed in the cooler with vermiculite and labeled and placarded in accordance with DOT regulations.
- In addition, the coolers must also be labeled and placarded in accordance with DOT regulations if shipping medium and high hazard samples.

19. Calibration Procedures and Frequency

All instruments and equipment used during sampling and analysis will be operated, calibrated, and maintained according to the manufacturer's guidelines and recommendations as well as criteria set forth in the applicable analytical methodology references. Operation, calibration, and maintenance will be performed by personnel properly trained in these procedures. Documentation of all routine and special maintenance and calibration information will be maintained in an appropriate logbook or reference file, and will be available on request. Table 7-1 lists the major instruments to be used for sampling and analysis. Brief descriptions of calibration procedures for major field and laboratory instruments follow.

20. Field Instrumentation

20.1. Photovac Micro Tip Flameionizer (FID)

Standard operating procedures for the FID require that routine maintenance and calibration be performed every six months. Field calibration will be performed on a daily basis. The packages used for calibration are non-toxic analyzed gas mixtures available in pressurized containers.

20.2. Photovac/MiniRea Photoionization Detector (PID)

Standard operating procedures for the PID require that routine maintenance and calibration be performed every six months. Field calibration will be performed on a daily basis. The packages used for calibration are non-toxic analyzed gas mixtures available in pressurized containers.

20.3. Organic Vapor Analyzer

Organic vapor analyzers (OVAs) are calibrated and routine maintenance performed every six months when the units are not in use. Calibration is performed and the major system checks are performed prior to the instrument being released for field use.

Calibration of the OVA 128 GC must be performed by a factory-authorized service representative. The instrument is removed from its protective case and the probe is connected to the base unit. After checking for an airtight seal in the sample line (plugging the sample inlet to stop the pump), the hydrogen supply is turned on and the pressure is set to 10 psi. The electronics are turned on and the instrument is allowed to warm up for at least 5 minutes. After warm up, the instrument is zeroed on the "X10" scale using the adjust knob. The flame is then lit and a gas-tight sample bag is filled with a mixture of 100 ppm methane in air. The sample bag is then attached to the probe inlet and the internal pump is allowed to draw in as much sample as is needed. R32 on the control board is adjusted to read 100 ppm on the "X10" scale and then the hydrogen supply is shut down. The pump can now be turned off and the sample bag removed. Using the adjust knob, the meter is set to read 4 ppm on the "X1" scale. Switching back to the "X10" scale the adjust knob is again used to set the meter to 40 ppm. The scale is then set to "X100" and R33 is adjusted until the meter reads 40 ppm on the "X100" scale.

The OVA has a detection limit of 0.1 ppm in methane equivalents and a working range of 0 to 1,000 ppm. During daily field use, system checks are performed which involve calibration and maintenance of the pump systems, gases, and filters. Care is taken to check for and prevent clogging or leaks. Quad rings and the burner chamber are examined on a weekly basis. Routine biannual maintenance includes a thorough cleaning as well as a re-examination of the pump system for leaks and wear. Parts are replaced as necessary. Instrument operation is verified by calibrating and running the OVA for 4 to 6 hours. An

instrument specific logbook is maintained with the OVA to document its use and maintenance.

20.4. Conductance, Temperature, and pH Tester

Temperature and conductance instruments are factory calibrated. Temperature accuracy can be checked against an NBS certified thermometer prior to field use if necessary. Conductance accuracy may be checked with a solution of known conductance and recalibration can be instituted, if necessary.

To recalibrate conductance, remove the black plug revealing the adjustment potentiometer screw. Add standard solution to cup, discard and refill. Repeat procedure until the digital display indicates the same value twice in a row. Adjust the potentiometer until the digital display indicates the known value of conductance. To increase the digital display reading, turn the adjustment potentiometer screw counter-clockwise (clockwise to decrease).

To standardize the pH electrode and meter, place the pH electrode in the 7.0 buffer bottle. Adjust the "ZERO" potentiometer on the face of the tester so that the digital display indicates 7.00.

Then place the pH electrode in the 4.0 or 10.0 buffer bottle (depending on where you expect the actual measurement to be). Adjust the "SLOPE" potentiometer on the face of the tester so that the digital display indicates the value of the buffer chosen.

Note: There is interaction between the "ZERO" and "SLOPE" adjustments, so the procedure should be repeated several times.

Do not subject the pH electrode to freezing temperatures.

It is good practice to rinse the electrode in distilled water when going from one buffer to another. When not in use the cap should be kept on the electrode. Keeping the cotton in the cap moist will keep the electrode ready to use. Moisten the cotton frequently (once a week, usually).

20.5. 0_2/Explosimeter

The primary maintenance item of the Model 260 is the rechargeable 2.4 volt (V) nickel cadmium battery. The battery is recharged by removing the screw cap covering receptacle and connecting one end of the charging cable to the instrument and the other end to a 115V AC outlet.

The battery can also be recharged using a 12V DC source. An accessory battery charging cable is available, one end of which plugs into the Model 260 while the other end is fitted with an automobile cigarette lighter plug.

Recommended charging time is 16 hours.

Before the calibration of the combustible gas indicator can be checked, the Model 260 must be in operating condition. Calibration check-adjustment is made as follows:

1. Attach the flow control to the recommended calibration gas tank.
2. Connect the adapter-hose to the flow control.
3. Open flow control valve.

4. Connect the adapter-hose fitting to the inlet of the instrument; after about 15 seconds the LEL meter pointer should be stable and within the range specified on the calibration sheet accompanying the calibration equipment. If the meter pointer is not in the correct range, stop the flow; remove the right hand side cover. Turn on the flow and adjust the "S" control with a small screwdriver to obtain a reading as specified on the calibration sheet.
5. Disconnect the adapter-hose fitting from the instrument.
6. Close the flow control valve.
7. Remove the adapter-hose from the flow control.
8. Remove the flow control from the calibration gas tank.
9. Replace the side cover on the Model 260.

CAUTION: Calibration gas tank contents are under pressure. Use no oil, grease, or flammable solvents on the flow control or the calibration gas tank. Do not store calibration gas tank near heat or fire or in rooms used for habitation. Do not throw in fire, incinerate, or puncture. Keep out of reach of children. It is illegal and hazardous to refill this tank. Do not attach the calibration gas tank to any other apparatus than described above. Do not attach any gas tank other than MSA calibration tanks to the regulator.

20.6. Nephelometer (Turbidity Meter)

The Series 95 nephelometer is calibrated before each use. Allow the instrument to warm up for approximately 2 hours. Using turbidity-free deionized water, zero the meter. Set the scale to 100, fill with a 40 NTU standard (AEPA-1 turbidity standard from Advanced Polymer Systems, Inc.), and insert into the instrument. Adjust the standardize control to give a readout of 200. Re-zero the instrument and repeat these steps with the scale set at 10 and 1 using 4.0 and 0.4 NTU standards, respectively. These standards are prepared by diluting aliquots of the 40 NTU standard.

20.7. S.E. International Radiation Monitor Model 4EC

This radiation monitor detects alpha, beta, gamma, and X-rays. The analog meter is scaled in CPM (counts per minute) or mR/hr (milli-Roentgens per hour), and the X1, X10, X100 switch extends the effective measurement range. This handheld unit is powered by a single 9-volt battery that offers up to 2,000 hours of operation.

21. Internal Quality Control Checks

QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of field equipment. Field-based QC will comprise at least 10% of each data set generated and will consist of standards, replicates, spikes, and blanks. Field duplicates and field blanks will be analyzed by the laboratory as samples and will not necessarily be identified to the laboratory as duplicates or blanks. For each matrix, field duplicates will be provided at a rate of one per 10 samples collected or one per shipment, whichever is greater. Field blanks which consist of trip, routine field, and rinsate blanks will be provided at a rate of one per 20 samples collected for each parameter group, or one per shipment, whichever is greater.

Calculations will be performed for recoveries and standard deviations along with review of retention times, response factors, chromatograms, calibration, tuning, and all other QC information generated. All QC data, including split samples, will be documented in the site logbook. QC records will be retained

and results reported with sample data.

21.1. Blank Samples

Blank samples are analyzed in order to assess possible contamination from the field and/or laboratory so that corrective measures may be taken, if necessary. Field samples are discussed in the following subsection:

21.2. Field Blanks

Various types of blanks are used to check the cleanliness of field handling methods. The following types of blanks may be used: the trip blank, the routine field blank, and the field equipment blank. They are analyzed in the laboratory as samples, and their purpose is to assess the sampling and transport procedures as possible sources of sample contamination. Field staff may add blanks if field circumstances are such that they consider normal procedures are not sufficient to prevent or control sample contamination, or at the direction of the project manager. Rigorous documentation of all blanks in the site logbooks is mandatory.

- **Routine Field Blanks** or bottle blanks are blank samples prepared in the field to access ambient field conditions. They will be prepared by filling empty sample containers with deionized water and any necessary preservatives. They will be handled like a sample and shipped to the laboratory for analysis.
- **Trip Blanks** are similar to routine field blanks with the exception that they are **not** exposed to field conditions. Their analytical results give the overall level of contamination from everything except ambient field conditions. For the RI/FS, one trip blank will be collected with every batch of water samples for volatile organic analysis. Each trip blank will be prepared by filling a 40-ml vial with deionized water prior to the sampling trip, transported to the site, handled like a sample, and returned to the laboratory for analysis without being opened in the field.
- **Field Equipment Blanks** are blank samples (sometimes called transfer blanks or rinsate blanks) designed to demonstrate that sampling equipment has been properly prepared and cleaned before field use, and that cleaning procedures between samples are sufficient to minimize cross contamination. If a sampling team is familiar with a particular site, they may be able to predict which areas or samples are likely to have the highest concentration of contaminants. Unless other constraints apply, these samples should be taken last to avoid excessive contamination of sampling equipment.

21.3. Field Duplicates

Field duplicate samples consist of a set of two samples collected independently at a sampling location during a single sampling event. In some instances the field duplicate can be a blind duplicate, i.e., indistinguishable from other analytical samples so that personnel performing the analyses are not able to determine which samples are field duplicates. Field duplicates are designed to assess the consistency of the overall sampling and analytical system.

21.4. Quality Control Check Samples

Inorganic and organic control check samples are available from EPA free of charge and are used as a means of evaluating analytical techniques of the analyst. Control check samples are subjected to the

entire sample procedure, including extraction, digestion, etc., as appropriate for the analytical method utilized.

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APPENDIX 4

Health & Safety Plan

Site Health and Safety Plan

Location:

Former Michelsen Furniture Co. Site
182 Avenue D and 374 Conkey Avenue
Rochester, New York

Prepared For:

Urban League of Rochester
Economic Development Corporation
312 State Street
Rochester, New York 14614

LaBella Project No. 214539

June 2014

Site Health and Safety Plan

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June 2014

LaBella Associates, D.P.C.
300 State Street
Rochester, New York 14614

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SITE HEALTH AND SAFETY PLAN

Project Title:	Former Michelsen Furniture Co. Site - Brownfield Cleanup Program
Project Number:	214539
Project Location (Site):	182 Avenue D & 374 Conkey Ave Rochester, New York
Environmental Director:	Gregory Senecal, CHMM
Project Manager:	Dave Engert, CHMM
Plan Review Date:	_____
Plan Approval Date:	_____
Plan Approved By:	_____ Mr. Richard Rote, CIH
Site Safety Supervisor:	Jennifer Gillen
Site Contact:	To Be Determined
Safety Director:	Rick Rote, CIH
Proposed Date(s) of Field Activities:	To Be Determined
Site Conditions:	Level, encompassing approximately 0.62 acres
Site Environmental Information Provided By:	• Phase I Environmental Site Assessment, LaBella, 2011 • Phase II ESA, LaBella, 2012 • Follow Up Subsurface Investigation Activities, LaBella, 2014
Air Monitoring Provided By:	LaBella Associates, D.P.C.
Site Control Provided By:	Contractor(s)

EMERGENCY CONTACTS

	Name	Phone Number
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Rochester General Hospital	585-922-8000
Poison Control Center:	Upstate New York Poison Control Center	1-800-222-1222
Police (local, state):	Rochester Police Department	911
Fire Department:	Rochester Fire Department	911
Site Contact:	John Dubikas	585-342-4700
Agency Contact:	NYSDEC – Todd Caffoe, P.E. NYSDOH – TBD	585-226-5350
Environmental Director:	Greg Senecal, CHMM	Direct: 585-295-6243 Cell: 585-752-6480
Project Manager:	Dave Engert, CHMM.	Direct: 585-295-630 Cell: 585-737-3293
Site Safety Supervisor:	Jennifer Gillen	Direct: 585-295-6648 Cell: 315-402-6480
Safety Director	Rick Rote, CIH	Direct: 585-295-6241

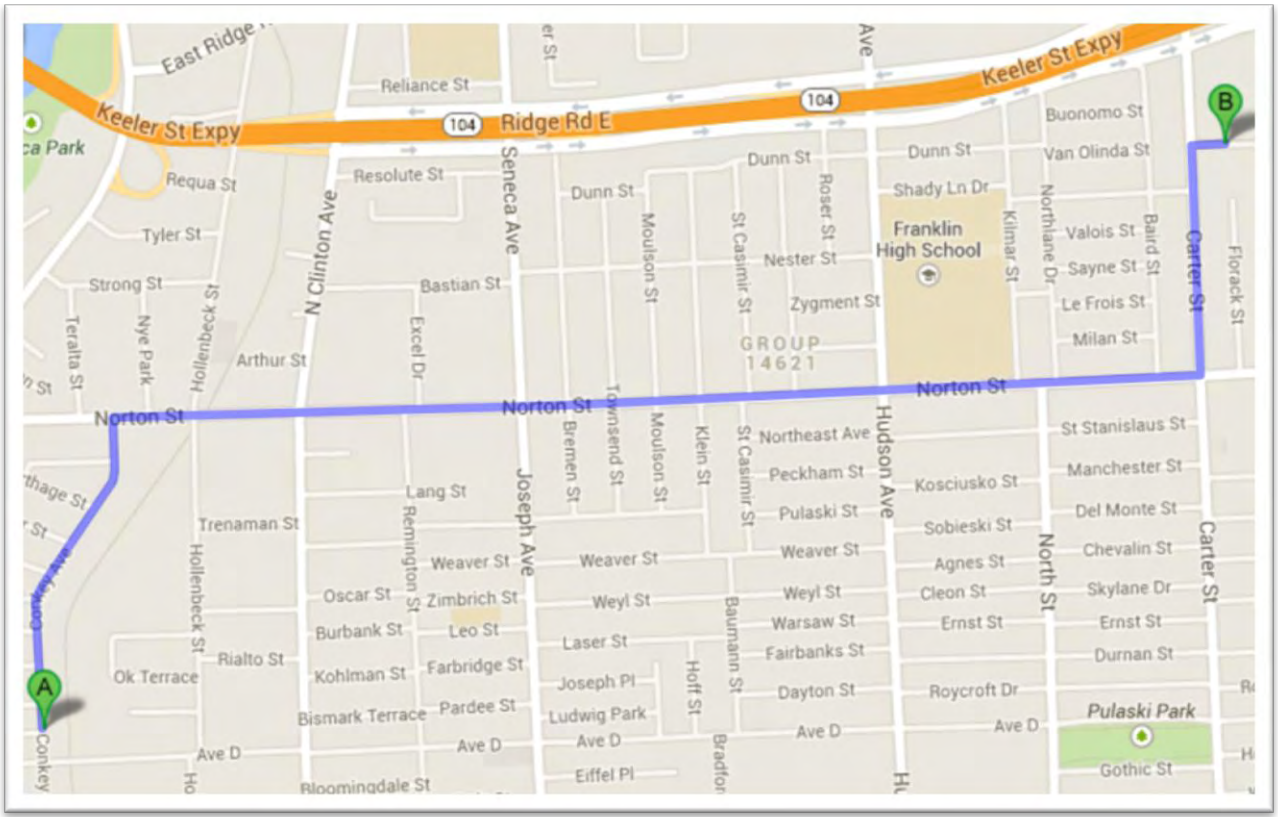
MAP AND DIRECTIONS TO THE MEDICAL FACILITY
ROCHESTER GENERAL HOSPITAL

Total Time: 6 minutes
Total Distance: 2.1 miles

Directions:

1. Turn Right onto Conkey Avenue, travel north 0.4 miles
2. Turn Right onto Norton Street, travel east 1.3 miles
3. Turn Left onto Carter Street, travel north 0.3 miles
4. Turn Right into Rochester General Hospital

Map:



1.0 Introduction

The purpose of this Health and Safety Plan (HASP) it to provide guidelines for responding to potential health and safety issues that may be encountered during the Remedial Investigation (RI) at the Former Michelsen Furniture Site, located at 182 Avenue D and 374 Conkey Avenue in the City of Rochester, Monroe County, New York. This HASP only reflects the policies of LaBella Associates D.P.C. The requirements of this HASP are applicable to all approved LaBella personnel at the work site. This document's project specifications and the Community Air Monitoring Plan (CAMP) are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP were developed in general accordance with 29 CFR 1910 and 29 CFR 1926 and do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or and other regulatory body.

2.0 Responsibilities

This HASP presents guidelines to minimize the risk of injury to project personnel, and to provide rapid response in the event of injury. The HASP is applicable only to activities of approved LaBella personnel and their authorized visitors. The Project Manager shall implement the provisions of this HASP for the duration of the project. It is the responsibility of LaBella employees to follow the requirements of this HASP, and all applicable company safety procedures.

3.0 Activities Covered

The activities covered under this HASP are limited to the following:

- Management of environmental investigation and remediation activities
- Environmental Monitoring
- Collection of samples
- Management of excavated soil and fill.

4.0 Work Area Access and Site Control

The contractor(s) will have primary responsibility for work area access and site control. However, a minimum requirement for work area designation and control will consist of:

- Drilling (Geoprobe®/Rotary) – Orange cones to establish at least a 10-foot by 10-foot work area
- Test Pitting – Orange cones and orange temporary fencing to establish at least 10-feet of distance between test pit and fencing.

5.0 Potential Health and Safety Hazards

This section lists some potential health and safety hazards that project personnel may encounter at the project site and some actions to be implemented by approved personnel to control and reduce the associated risk to health and safety. This is not intended to be a complete listing of any and all potential health and safety hazards. New or different hazards may be encountered as site environmental and site work conditions change. The suggested actions to be taken under this plan are not to be substituted for good judgment on the part of project personnel. At all times, the Site Safety Officer has responsibility for site safety and his or her instructions must be followed.

5.1 Hazards Due to Heavy Machinery

Potential Hazard:
Heavy machinery including trucks, excavators, backhoes, etc will be in operation at the site. The presence of such equipment presents the danger of being struck or crushed. Use caution when working near heavy machinery.

Protective Action:
Make sure that operators are aware of your activities, and heed operator's instructions and warnings. Wear bright colored clothing and walk safe distances from heavy equipment. A hard hat, safety glasses and steel toe shoes are required.

5.2 Excavation Hazards

Potential Hazard:
Excavations and trenches can collapse, causing injury or death. Edges of excavations can be unstable and collapse. Toxic and asphyxiant gases can accumulate in confined spaces and trenches. Excavations that require working within the excavation will require air monitoring in the breathing zone (refer to Section 9.0).

Excavations left open create a fall hazard which can cause injury or death.

Protective Action:
Personnel must receive approval from the Project Manager to enter an excavation for any reason. Subsequently, approved personnel are to receive authorization for entry from the Site Safety Officer. Approved personnel are not to enter excavations over 4 feet in depth unless excavations are adequately sloped. Additional personal protective equipment may be required based on the air monitoring.

Personnel should exercise caution near all excavations at the site as it is expected that excavation sidewalls will be unstable. All excavations will be backfilled by the end of each day. Additionally, no test pit will be left unattended during the day.

Fencing and/or barriers accompanied by "no trespassing" signs should be placed around all excavations when left open for any period of time when work is not being conducted.

5.3 Cuts, Punctures and Other Injuries

Potential Hazard:
In any excavation or construction, work site there is the potential for the presence of sharp or jagged edges on rock, metal materials, and other sharp objects. Serious cuts and punctures can result in loss of blood and infection.

Protective Action:
The Project Manager is responsible for making First Aid supplies available at the work site to treat minor injuries. The Site Safety Officer is responsible for arranging the transportation of authorized on-site personnel to medical facilities when First Aid treatment in not sufficient. Do not move seriously injured workers. All injuries requiring treatment are to be reported to the Project Manager. Serious injuries are to be reported immediately to the Site Safety Officer

5.4 Injury Due to Exposure of Chemical Hazards

Potential Hazards:
Volatile organic vapors from petroleum products, chlorinated solvents or other chemicals may be encountered during excavation activities at the project work site. Inhalation of high concentrations of organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis.

Protective Action:
The presence of organic vapors may be detected by their odor and by monitoring instrumentation. Approved employees will not work in environments where hazardous concentrations of organic vapors are present. Air monitoring (refer to Section 9.0 and to the Modified CAMP in Appendix 7) of the work area will be performed at least every 60 minutes or more often using a Photoionization Detector (PID). Personnel are to leave the work area whenever PID measurements of ambient air exceed 25 ppm consistently for a 5 minute period. In the event that sustained total volatile organic compound (VOC) readings of 25 ppm is encountered personnel should upgrade personal protective equipment to Level C (refer to Section 8.0) and an Exclusion Zone should be established around the work area to limit and monitor access to this area (refer to Section 6.0).

5.5 Injuries Due to Extreme Hot or Cold Weather Conditions

Potential Hazards:
Extreme hot weather conditions can cause heat exhaustion, heat stress and heat stroke or extreme cold weather conditions can cause hypothermia.

Protective Action:
Precaution measures should be taken such as dress appropriately for the weather conditions and drink plenty of fluid. If personnel should suffer from any of the above conditions, proper techniques should be taken to cool down or heat up the body and taken to the nearest hospital if needed.

5.6 Potential Exposure to Asbestos

Potential Hazards:
During ground intrusive activities (e.g., test pitting or drilling) soil containing asbestos may be encountered. Asbestos is friable when dry and can be inhaled when exposed to air.

Protective Action:
The presence of asbestos can be identified through visual observation of a white magnesium silicate material. If encountered, work should be halted and a sample of the suspected asbestos should be collected and placed in a plastic sealable bag. This sample should be sent to the asbestos laboratory at LaBella Associates for analysis.

5.7 Potential Exposure to Thorium^{232}

Potential Hazards:
During ground intrusive activities (e.g., test pitting or drilling) soil containing ^{232}Thorium may be encountered. ^{232}Thorium is a radioactive substance and poses an exposure risk to humans once encountered.

Protective Action:
Each test pit, soil sample, or other soil from the subsurface should initially be screened with the Ludlum meter to check the level of radiation on the soil as compared to the Site background level of radiation. Should the level of radiation on the soil sample exceed 2 times the Site background level, then work should be halted at the specified location and Mr. Rick Rote of LaBella Associates, P.C. should be contacted immediately (see page ii Emergency Contacts).

6.0 Work Zones

In the event that conditions warrant establishing various work zones (i.e., based on hazards - Section 5.4), the following work zones should be established:

Exclusion Zone (EZ):
The EZ will be established in the immediate vicinity and adjacent downwind direction of site activities that elevate breathing zone VOC concentrations to unacceptable levels based on field screening. These site activities include contaminated soil excavation and soil sampling activities. If access to the site is required to accommodate non-project related personnel then an EZ will be established by constructing a barrier around the work area (yellow caution tape and/or construction fencing). The EZ barrier shall encompass the work area and any equipment staging/soil staging areas necessary to perform the associated work. The contractor(s) will be responsible for establishing the EZ and limiting access to approved personnel. Depending on the condition for establishing the EZ, access to the EZ may require adequate PPE (e.g., Level C).

Contaminant Reduction Zone (CRZ):
The CRZ will be the area where personnel entering the EZ will don proper PPE prior to entering the EZ and the area where PPE may be removed. The CRZ will also be the area where decontamination of equipment and personnel will be conducted as necessary.

7.0 Decontamination Procedures

Upon leaving the work area, approved personnel shall decontaminate footwear as needed. Under normal work conditions, detailed personal decontamination procedures will not be necessary. Work clothing may become contaminated in the event of an unexpected splash or spill or contact with a contaminated substance. Minor splashes on clothing and footwear can be rinsed with clean water. Heavily contaminated clothing should be removed if it cannot be rinsed with water. Personnel assigned to this project should be prepared with a change of clothing whenever on site.

Personnel will use the contractor's disposal container for disposal of PPE.

8.0 Personal Protective Equipment

Generally, site conditions at this work site require level of protection of Level D or modified Level D. However, air monitoring will be conducted to determine if up-grading to Level C PPE is required (refer to Section 9.0). Descriptions of the typical safety equipment associated with Level D and Level C are provided below:

Level D:
Hard hat, safety glasses, rubber nitrile sampling gloves, steel toe construction grade boots, etc.

Level C:
Level D PPE and full or ½-face respirator and tyvek suit (if necessary). [*Note: Organic vapor cartridges are to be changed after each 8-hours of use or more frequently.*]

9.0 Air Monitoring

According to 29 CFR 1910.120(h), air monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection required for personnel working onsite. Air monitoring will consist at a minimum of the procedures described in Appendix 7 "Site Specific CAMP". Please refer to the Site Specific CAMP for further details on air monitoring at the Site.

The Air Monitor will utilize a photoionization Detector (PID) to screen the ambient air in the work areas for total Volatile Organic Compounds (VOCs) and a DustTrak tm Model 8520 aerosol monitor or equivalent for measuring particulates. Work area ambient air will generally be monitored in the work area and downwind of the work area. Air monitoring of the work areas and downwind of the work areas will be performed at least every 60 minutes or more often using a PID, and the DustTrak meter.

If sustained PID readings of greater than 25 ppm are recorded in the breathing zone, then either personnel are to leave the work area until satisfactory readings are obtained or approved personnel may re-enter the work areas wearing at a minimum a ½ face respirator with organic vapor cartridges for an 8-hour duration (i.e., upgrade to Level C PPE). Organic vapor cartridges are to be changed after each 8-hours of use or more frequently, if necessary. If PID readings are sustained, in the work area, at levels above 25 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered or additional PPE will be required (i.e., Level B).

If dust concentrations exceed the upwind concentration by 150 $\mu g/m^3$ (0.15 mg/m^3) consistently for a 10 minute period within the work area or at the downwind location, then LaBella personnel may not re-enter the work area until dust concentrations in the work area decrease below 150 $\mu g/m^3$ (0.15 mg/m^3), which may be accomplished by the construction manager implementing dust control or suppression measures.

10.0 Emergency Action Plan

In the event of an emergency, employees are to turn off and shut down all powered equipment and leave the work areas immediately. Employees are to walk or drive out of the Site as quickly as possible and wait at the assigned 'safe area'. Follow the instructions of the Site Safety Officer.

Employees are not authorized or trained to provide rescue and medical efforts. Rescue and medical efforts will be provided by local authorities.

11.0 Medical Surveillance

Medical surveillance will be provided to all employees who are injured due to overexposure from an emergency incident involving hazardous substances at this site.

12.0 Employee Training

Personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the Site.

Individuals involved with the remedial investigation must be 40-hour OSHA HAZWOPER trained with current 8-hour refresher certification.

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Table 1
Exposure Limits and Recognition Qualities

Compound	PEL-TWA (ppm)(b)(d)	TLV-TWA (ppm)(c)(d)	STEL	LEL (%)(e)	UEL (%)(f)	IDLH (ppm)(g)(d)	Odor	Odor Threshold (ppm)	Ionization Potential
Acetone	750	500	NA	2.15	13.2	20,000	Sweet	4.58	9.69
Anthracene	0.2	0.2	NA	NA	NA	NA	Faint aromatic	NA	NA
Benzene	1	0.5	5	1.3	7.9	3000	Pleasant	8.65	9.24
Benzo (a) pyrene (coal tar pitch volatiles)	0.2	0.1	NA	NA	NA	700	NA	NA	NA
Benzo (a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (k) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	10.88
Carbon Disulfide	20	1	NA	1.3	50	500	Odorless or strong garlic type	0.096	10.07
Chlorobenzene	75	10	NA	1.3	9.6	2,400	Faint almond	0.741	9.07
Chloroform	50	2	NA	NA	NA	1,000	ethereal odor	11.7	11.42
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethylene	200	200	NA	9.7	12.8	400	Acrid	NA	9.65
1,2-Dichlorobenzene	50	25	NA	2.2	9.2		Pleasant		9.07
Ethylbenzene	100	100	NA	1	6.7	2,000	Ether	2.3	8.76
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	500	50	NA	12	23	5,000	Chloroform-like	10.2	11.35
Naphthalene	10, Skin	10	NA	0.9	5.9	250	Moth Balls	0.3	8.12
n-propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethane	NA	NA	NA	NA	NA	NA	Sweet	NA	NA
Toluene	100	100	NA	0.9	9.5	2,000	Sweet	2.1	8.82
Trichloroethylene	100	50	NA	8	12.5	1,000	Chloroform	1.36	9.45
1,2,4-Trimethylbenzene	NA	25	NA	0.9	6.4	NA	Distinct	2.4	NA
1,3,5-Trimethylbenzene	NA	25	NA	NA	NA	NA	Distinct	2.4	NA
Vinyl Chloride	1	1	NA	NA	NA	NA	NA	NA	NA
Xylenes (o,m,p)	100	100	NA	1	7	1,000	Sweet	1.1	8.56
Metals									
Arsenic	0.01	0.2	NA	NA	NA	100, Ca	Almond	NA	NA
Cadmium	0.2	0.5	NA	NA	NA	NA	NA	NA	NA
Chromium	1	0.5	NA	NA	NA	NA	NA	NA	NA
Lead	0.05	0.15	NA	NA	NA	700	NA	NA	NA
Mercury	0.05	0.05	NA	NA	NA	28	Odorless	NA	NA
Selenium	0.2	0.02	NA	NA	NA	Unknown	NA	NA	NA
Other									
Asbestos	0.1 (f/cc)	NA	1.0 (f/cc)	NA	NA	NA	NA	NA	NA

Table 1 Notes:

(a) Skin = Skin Absorption
(b) OSHA-PEL Permissible Exposure Limit (flame weighted average, 8-hour): NIOSH Guide, June 1990
(c) ACGIH – 8 hour time weighted average from Threshold Limit Values and Biological Exposure Indices for 2003.
(d) Metal compounds in mg/m3
(e) Lower Exposure Limit (%)
(f) Upper Exposure Limit (%)
(g) Immediately Dangerous to Life or Health Level: NIOSH Guide, June 1990.

Notes:

1. All values are given in parts per million (PPM) unless otherwise indicated.
2. Ca = Possible Human Carcinogen, no IDLH information.

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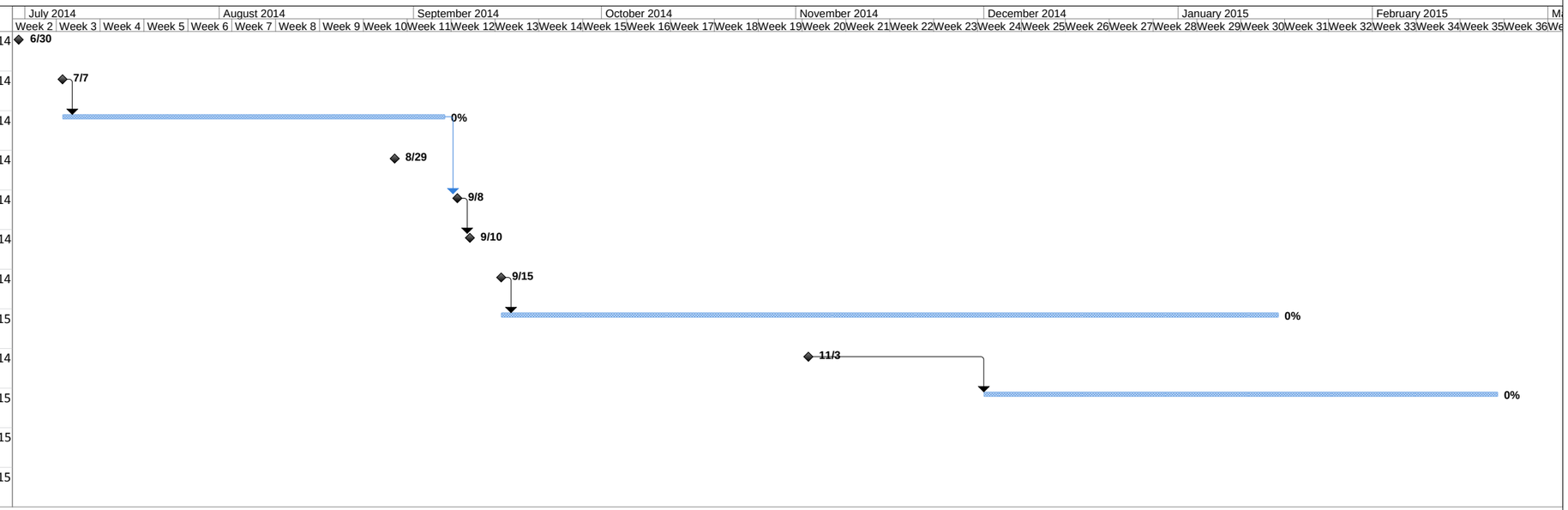
APPENDIX 5

Anticipated Project Schedule

Michelsen BCP Schedule

ID	Task Name	Start	Finish
1	BCP Aplication & Draft RIWP Submitted	Mon 6/30/14	Mon 6/30/14
2	Application Deemed Complete by NYSDEC	Mon 7/7/14	Mon 7/7/14
3	45 Day Public Comment Period - Application & F	Mon 7/7/14	Fri 9/5/14
4	Draft Citizen Participation Plan (CPP) Submissior	Fri 8/29/14	Fri 8/29/14
5	BCP Agreement Sent to Applicant	Mon 9/8/14	Mon 9/8/14
6	BCP Agreement Executed	Wed 9/10/14	Wed 9/10/14
7	RIWP Approval	Mon 9/15/14	Mon 9/15/14
8	Implementation of RIWP	Mon 9/15/14	Fri 1/16/15
9	Submission of IRM Workplan	Mon 11/3/14	Mon 11/3/14
10	Implementation of IRM Field Work	Mon 12/1/14	Fri 2/20/15
11	Submission of RI Report & Remedial Alternative	Wed 4/1/15	Wed 4/1/15
12	Submission of SMP & EE	Mon 6/1/15	Mon 6/1/15



Critical	Task	Manual Task	Duration-only	Baseline Milestone	Summary	External Tasks	Inactive Milestone
Critical Split	Split	Start-only	Baseline	Milestone	Manual Summary	External Milestone	Inactive Summary
Critical Progress	Task Progress	Finish-only	Baseline Split	Summary Progress	Project Summary	Inactive Task	Deadline