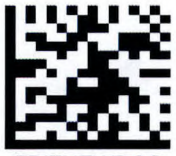

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ROSEN SITE
CORTLAND, NEW YORK

OPERATION AND SITE MAINTENANCE AND MONITORING PLAN

SEPTEMBER 2003

Barton & Loguidice, P.C.
Consulting Engineers

290 Elwood Davis Road
Box 3107
Syracuse, New York 13220

OPERATION AND SITE MAINTENANCE AND MONITORING PLAN

ROSEN SITE
CORTLAND, NEW YORK

PREPARED FOR:

ROSEN SITE JOINT DEFENSE GROUP

PREPARED BY:

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SEPTEMBER, 2003

PROJECT NO.: 617.001

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1.0 INTRODUCTION

Barton & Loguidice, P.C. has prepared this Operation and Site Maintenance and Monitoring Plan (O&M) Manual in accordance with the Statement of Work (SOW) for the Consent Decree (CD) for the Rosen Site, as well as applicable sections of 6 NYCRR Part 360. This O&M Manual has been prepared on behalf of the Rosen Site Joint Defense Group. The preparation of this manual is part of the completion of the Remedial Action (RA) for the site. This plan is intended to serve as the guide for all operation, maintenance and monitoring activities at the Rosen Site for a minimum of thirty years. The purpose of this plan is to verify that natural attenuation is successfully addressing groundwater contamination; and securing institutional controls restricting: 1) groundwater usage at and downgradient of the site, 2) excavation or other on-site activities which could compromise cap/cover integrity, and 3) public access and residential use of the property.

1.1 Site Location

The site occupies approximately 20 acres on the southern side of the City of Cortland, Cortland County, New York (Figure 1). The site is bordered on the north, east, and south by Perplexity Creek and Perplexity Creek tributary (Perplexity Creek and its tributary), and by a shallow swale on the west. The City of Cortland covers an area of approximately 4.1 square miles and, as of 1990, had an estimated population of approximately 20,000 individuals (United States Department of Commerce, 1990 and McComb, 1992). Access to the site is restricted from the surrounding environs by a 7-foot high fence with two locked gates. Features within approximately 1,000 feet of the site, such as surface waters, roads, schools, residential, commercial, and industrial areas, include:

- To the east, the parking lot of the former Kirby Company, Pendleton Street, a vacant lot, a small residential area consisting of approximately 13 apartment buildings, and GT Auto Finishers;

- To the west, a shallow swale, a vacant lot, several industries (as Heavy Duty Electric (Dowzer Electric), JTS Lumber, Inc., and Cortland Wholesale Lumber and Plywood), and South Main Street;

- To the north, Perplexity Creek, railroad tracks associated with the former Lehigh Valley Railroad, several industries (Acorn Products Company, Injection Molded Plastics, Tuscarora Plastics of New York, and the Marietta Packaging Company, Inc.), Huntington Street, a small residential area consisting of approximately 20 housed, and the Randall Elementary School; and

- To the south, Perplexity Creek Tributary, a former City of Cortland dump site, Valley View Drive, and the Cortland City Junior and Senior High Schools.

The remainder of the City of Cortland lies further to the west, north, and east of the aforementioned features and comprises residential, commercial, and industrial areas. The southern limit of the City of Cortland and residential, agricultural, and forested areas lie further south of the junior and senior high schools (Miller et al., 1981).

1.2 Training Requirements

All personnel that conduct intrusive on-site activities, (e.g., groundwater sampling, gas monitoring, etc.), shall have the OSHA 1910.120 40-Hour Hazardous Waste Operation Training Certification and/or current (8) hour refresher course. This training will not be required for site workers responsible for general site inspections or for mowing the vegetative cover.

2.0 ENVIRONMENTAL MONITORING PROGRAM

2.1 Location of Monitoring Points and Sampling Parameters

2.1.1 Groundwater

Nineteen groundwater-monitoring wells were installed during the remedial investigation conducted at the Rosen Site in 1991 (W-06 – W-24). These wells were supplemental to five existing wells installed by Wehran in 1986 (W-01 – W-05). Two additional wells were installed as a pumping and observation well for hydraulic conductivity at the perimeter of the site (W-25 & W-26). These monitoring wells were installed as part of the Remedial Investigation to help characterize groundwater chemistry and hydrogeology.

Fifteen of the twenty-six groundwater-monitoring wells will be sampled as part of the post-closure monitoring program (Figure 2). Site monitoring wells are identified in Table 4, along with the specific rationale for their inclusion or exclusion from the monitoring program. In general, the selection of wells for inclusion in the monitoring program was based on an evaluation of historical water quality data as to whether the individual well is strategically located to detect changes in plume geometry and geochemistry.

The groundwater monitoring program will include analysis for VOCs, as well as analysis for parameters which are diagnostic of natural attenuation processes (Table 1&2). The protocol for collection of groundwater samples is provided in section 2.3 of this report.

TABLE 1 ANALYTICAL PARAMETERS FOR REVIEW OF NATURAL ATTENUATION		
PARAMETER	**FREQUENCY**	**PURPOSE/SIGNIFICANCE**
VOCs	See Table 5	Determine concentrations of primary contaminants as well as daughter compounds.
Alkalinity	See Table 5	Measure of the buffering capacity of groundwater, also can serve as an indicator of aerobic biodegradation (carbon dioxide production).
pH	See Table 5	Tolerated pH range for most microbes is in the range of 5-9, with 6-8 being preferable.
Redox Potential	See Table 5	Measure of the electron activity of the groundwater indicating the relative ability to accept or transfer electrons, i.e. – oxidation or reduction.
Dissolved Oxygen	See Table 5	Strong electron acceptor, will be depleted (carbon dioxide production) in reducing environments – typically <0.5 mg/L.
Nitrate	See Table 5	Electron acceptor, will be depleted (ammonia production) in reducing environments – typically <1.0 mg/L.
Ammonia	See Table 5	Product of nitrate reduction may be elevated in reducing environments.
Sulfate	See Table 5	Electron acceptor will be depleted in reducing environments – typically <1.0 mg/L.
Sulfide	See Table 5	Product of sulfate reduction may be elevated in reducing environments.
Iron	See Table 5	Electron acceptor, reduced iron (+2) is fairly soluble and dissolved iron may be elevated in reducing environments.
Manganese	See Table 5	Electron acceptor, reduced manganese (+2) is fairly soluble and dissolved manganese may be elevated in reducing environments.
Total Organic Carbon/ Dissolved Organic Carbon	See Table 5	Organic carbon is the "food" source for reduction reactions which are controlled or catalyzed by microbes. The concentration of organic carbon assists in the evaluation of microbial activity.
Chloride	See Table 5	Dissolved chloride concentrations may be elevated in areas where reductive dechlorination is occurring.
Dissolved Gases (Hydrogen, Ethane and Methane)	See Table 5	Molecular hydrogen is an important intermediate product in anaerobic microbial metabolism. Ethane is the remnant organic molecule after complete dechlorination of TCA. Methane production is indicative of strong reducing conditions.

TABLE 2 ANALYTICAL PARAMETERS FOR GROUNDWATER		
PARAMETER	**METHOD**	**DETECTION LIMIT**
GROUNDWATER SAMPLES		
Volatile Organic Compounds (VOCs)	Superfund Analytical Methods for Low Concentration Water for Organic Analysis EPA/540/R/94/675 December 1994	1 ug/L**
Alkalinity	*Method 310.1	10 mg/L
Ammonia	*Method 350.1, 350.2 or 350.3	0.05 mg/L
Chloride	*Method 325.1 or 325.2	1 mg/L
Nitrate	*Method 352.1	0.1 mg/L
Sulfate	*Method 375.1, 375.2 or 375.3	10 mg/L
Sulfide	*Method 376.1 or 376.2	1 mg/L
Dissolved Organic Carbon (DOC)	*Method 325.3	1 mg/L
pH	Field Method	N/A
Redox Potential	Field Method	N/A
Specific Conductance	Field Method	N/A
Dissolved Oxygen	Field Method	N/A
Dissolved Gases	Microseeps Method AM19G	N/A
Aluminum	USEPA CLP SOW for Inorganic Analysis	30 ug/L
Arsenic	USEPA CLP SOW for Inorganic Analysis	10 ug/L
Barium	USEPA CLP SOW for Inorganic Analysis	200 ug/L
Cadmium	USEPA CLP SOW for Inorganic Analysis	3 ug/L
Chromium	USEPA CLP SOW for Inorganic Analysis	10 ug/L
Copper	USEPA CLP SOW for Inorganic Analysis	4 ug/L
Iron	USEPA CLP SOW for Inorganic Analysis	100 ug/L
Lead	USEPA CLP SOW for Inorganic Analysis	3 ug/L
Manganese	USEPA CLP SOW for Inorganic Analysis	15 ug/L
Mercury	USEPA CLP SOW for Inorganic Analysis	0.2 ug/L
Nickel	USEPA CLP SOW for Inorganic Analysis	40 ug/L
Zinc	USEPA CLP SOW for Inorganic Analysis	20 ug/L

* *Methods for Chemical Analysis of Water and Wastes*
** Some compounds have slightly higher detection limits
Note: Most recently issued USEPA QA/QC Statements of Work (SOW) will be utilized for analytical methods.

2.1.2 Sediment

Sediment samples will be collected from six locations around the site in Perplexity Creek Tributary (SP-1, SP-2, SP-3, SP-4, SD-6 and SD-9) (Figure 2). Sampling will be conducted moving from the most downstream location moving to successively upstream locations.

Sediment samples will be collected using a trowel or core-type sampler, depending on field conditions (sediment texture, water column depth, etc.) and transferred to the sample containers. Samples will be collected from the top six inches of the sediment column. Sediment samples will be analyzed for selected Target Analyte List (TAL) metals, semi-volatile organic compounds (SVOCs) and PCBs (Table 3). Sediment samples will be collected on an annual basis for the first 2 years. If the results of the sediment samples meet soil standards, then no further sampling will be necessary.

Procedures for decontamination of sampling equipment, sample custody, quality control and record keeping will be the same as those discussed for collection of groundwater samples provided in Section 2.3.

TABLE 3
ANALYTICAL PARAMETERS FOR SEDIMENT SAMPLES

PARAMETER	METHOD	DETECTION LIMIT
SEDIMENT SAMPLES		
Aluminum	USEPA CLP SOW for Inorganic Analysis	30 ug/L
Arsenic	USEPA CLP SOW for Inorganic Analysis	10 ug/L
Barium	USEPA CLP SOW for Inorganic Analysis	200 ug/L
Cadmium	USEPA CLP SOW for Inorganic Analysis	3 ug/L
Chromium	USEPA CLP SOW for Inorganic Analysis	10 ug/L
Copper	USEPA CLP SOW for Inorganic Analysis	4 ug/L
Iron	USEPA CLP SOW for Inorganic Analysis	100 ug/L
Lead	USEPA CLP SOW for Inorganic Analysis	3 ug/L
Manganese	USEPA CLP SOW for Inorganic Analysis	15 ug/L
Mercury	USEPA CLP SOW for Inorganic Analysis	0.2 ug/L
Nickel	USEPA CLP SOW for Inorganic Analysis	40 ug/L
Zinc	USEPA CLP SOW for Inorganic Analysis	20 ug/L
PCBs and Semi-Volatile Organic Compounds	Superfund Analytical Methods for Low Concentration Water for Organic Analysis EPA/540/R/94/675 December 1994	1 ug/L**

* *Methods for Chemical Analysis of Water and Wastes*
** Some compounds have slightly higher detection limits
Note: Most recently issued USEPA QA/QC Statements of Work (SOW) will be utilized for analytical methods.

TABLE 4
IDENTIFICATION OF MONITORING WELLS AND RATIONALE FOR GROUNDWATER MONITORING

WELL NO.	DEPTH*	MONITOR	RATIONALE
W-01	24.0	Y	Downgradient well with historic VOC detections
W-02	25.0	Y	Downgradient well with historic VOC detections
W-03	24.5	Y	Downgradient well with historic VOC detections
W-04	19.0	Y	Upgradient well sample yearly for metals
W-05	19.0	N	Side gradient well – not critical to plume geometry
W-06	17.5	Y	"Hot spot" area well
W-07	19.5	Y	PCB detection, sample yearly for PCBs
W-08	41.5	Y	Downgradient well with historic VOC detections
W-09	72.5	Y	Deeper well, sample yearly for VOCs
W-10	20.0	Y	Downgradient well with historic VOC detections
W-11	51.3	Y	Downgradient well with historic VOC detections
W-12	50.5	Y	Downgradient well with historic VOC detections
W-13	19.0	N	Side gradient well with historic ND/trace VOC concentrations
W-14	69.0	N	Side gradient well with historic ND/trace VOC concentrations
W-15	89.5	N	Downgradient well with historic ND VOC concentrations
W-16	59.5	Y	Downgradient, off-site well with historic VOC detections
W-17	22.5	N	Downgradient, off-site well with historic ND/trace VOC concentrations
W-18	22.5	Y	Downgradient, off-site well with historic VOC detections
W-19	47.5	Y	Downgradient, off-site well with historic VOC detections
W-20	84.5	Y	Deeper well, sample yearly for VOCs
W-21	27.5	N	Upgradient well with historic ND/trace VOC concentrations
W-22	23.5	N	Upgradient well with historic ND/trace VOC concentrations
W-23	44.0	N	Upgradient well with historic ND/trace VOC concentrations
W-24	24.5	N	Upgradient well with historic VOC detections
W-25	51.2	N	Pumping well for hydraulic testing
W-26	49.3	N	Pumping observation well

* in feet below ground surface
ND = Not Detected

2.2 Sampling Schedule

Post-closure monitoring will be conducted quarterly for two years at the designated groundwater and sediment sampling locations indicated on Figure 2. Groundwater and sediment samples will be analyzed for the parameters and methods specified in table 2 & 3. Table 5 presents the proposed schedule of post-closure monitoring for the next five year period.

The established monitoring program should be evaluated annually and adjust accordingly in conjunction with the United States Environmental Protection Agency (USEPA). A complete evaluation of the entire post-closure monitoring program will be performed on five year intervals.

TABLE 5
POST-CLOSURE SAMPLING SCHEDULE

Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2003	Sample Event	Sample Event	Sample Event	Sample Event
2004	Sample Event	Sample Event	Sample Event	Sample Event
2005	--	Sample Event	--	Sample Event
2006	--	Sample Event	--	Sample Event
2007	--	Sample Event	--	Sample Event
2008	USEPA Review – Petition for elimination of sampling.			

2.3 Sampling Procedures

2.3.1 Monitoring Well Sampling

Each monitoring well will be equipped with a dedicated bailer or bladder pump used both for well purging and for sample collection. The following sampling procedures should be used:

- Sampling will be conducted in sequence from upgradient/ background wells to the downgradient wells, or from the potentially least contaminated to the potentially most contaminated in order to minimize any cross contamination.

- Inspect each well for any visible damage to the well casing or surface seal. Immediately notify the property owner if well damage is observed or suspected.

- Measure and record the groundwater level to the nearest 0.01-foot. The measuring device will be cleaned prior to initial use with a phosphate-free detergent (such as alconox), rinsed thoroughly with distilled water and finally wiped dry with a clean paper towel. Groundwater levels should be compared to past levels as a check.

- Field personnel will put on new disposable gloves at each sampling location.

- Purge each well of at least three volumes of water or evacuate completely at least once, depending on the well hydraulics. The volume of water contained in a 2-inch cased well may be determined by multiplying the height of water column by a volumetric conversion factor of 0.163 gallons per foot of water column height. Periodic measurements of specific conductance, temperature and pH during purging can, on the attainment of stabilized readings, indicate that all stagnant water has been removed and replaced by fresh formation water. Evacuation methods must create the least possible turbidity in the well and should not lower the water level below the top of the sand pack when feasible.

- When purging a well with a dedicated bailer, the rope will not touch the ground. During well purging, the dedicated bailer will be carefully lowered just below the surface of the water, retrieved and emptied, etc. The same dedicated bailer will be used to obtain the sample.

- When purging a well with a dedicated bladder pump, the compressor engine exhaust should be positioned away from any open wells. The cycle and flow rate of the pumps should be adjusted to low flow conditions that create the least possible turbidity in the wells.

- After purging of the well, volatile organic samples must be collected first (when required).

- Measure and record the field-determined parameters: oxidation-reduction potential (ORP or Eh), specific conductance, temperature, turbidity, and pH. Measurement devices will be calibrated daily. Decontamination of meters will occur after each use. Also note the general sample appearance: color, sediment, immiscible components, and odor.

- Samples should be collected and containerized in the order of the volatilization sensitivity of the parameters. The general preferred order of collection is as follows:

  - Purgeable volatile organics
  - Total organic carbon (TOC)
  - Extractable organics
  - Total metals
  - Phenols
  - Cyanide
  - Sulfate and chloride
  - Nitrate and ammonia
  - Any other parameters

- Volatile organic sample bottles must be filled to capacity with no headspace for volatilization. Bottles must be gently filled, tightly capped, inverted and inspected. If any bubbles can be seen in the sample, the sample must be retaken. When a satisfactory sample has been obtained, it should be immediately chilled (4°C).

- The remaining sample containers should be filled leaving a ten percent void at the top of the container to prevent loss of preservatives and allow for potential expansion during transport.

- All sample containers and coolers will be supplied by the laboratory. Necessary preservatives will be pre-placed in the sample bottles by the laboratory.

- Pack the filled sample bottles in a cooler chest for transportation to the laboratory. All samples shall be shipped the same day they are obtained. Samples should be stored and transported at a temperature of approximately 4 degrees Celsius.

- Complete the field sampling data sheets, chain-of-custody form, and any other notes in the field-sampling logbook prior to leaving the site.

- All locations are to be cleaned up and the well locked before proceeding to the next well.

Field Sampling data sheets should be completed for each sampling locations. The sheets should include the measurements and observations outlined above and in Section 2.5. A sample Field Sampling Data Sheet is attached in Appendix A.

2.3.2 Sediment Sampling

Sediment samples will be collected from six locations around the site in Perplexity Creek Tributary (SP-1, SP-2, SP-3, SP-4, SD-6 and SD-9) (Figure 2). A stainless steel scoop will be utilized to extract the sediment samples in the following manner:

- Scoop sediments from the upper six inches of material from the ground surface.

- Place the sample into the parameter-specific sample container, label appropriately (sample ID number and preservative) and store in coolers with ice or ice packs as soon as possible.

- Complete the field sampling data sheets, chain-of-custody form, and any other notes in the field-sampling logbook prior to leaving the site.

- Thoroughly decontaminate sampling scoop using the procedures outlined in Section 2.3.4 below.

- At the end of the sampling day, the coolers will be taped shut with the custodian's initials placed on the tape at the points of entry. Samples will be delivered to the laboratory by field personnel upon departure from the site.

2.3.3 Sample Preservation

To ensure the integrity of the water quality samples during transportation from the field to the laboratory, the USEPA guidelines for sample containers, preservatives and maximum holding times should be observed. All requirements are summarized in Table 6.

TABLE 6
SAMPLE HANDLING AND LABORATORY GUIDELINES

Parameter/Test Method	Preservation	Hold Time (Extraction)	Hold Time (Analysis)
Alkalinity	Chill at 4°C, Zero Headspace	--	14 days
Ammonia	H_2SO_4, pH<2; Chill at 4°C	--	28 days
Chloride	Chill at 4°C	--	28 days
Nitrate	Chill at 4°C	--	48 hours
Sulfate	Chill at 4°C	--	28 hours
Sulfide	Zinc Acetate, Sodium Hydroxide	--	7 days
Metals	HNO_3, pH<2	--	6 months
VOC's	Chill at 4°C	--	7 days
SVOC's	Chill at 4°C	5 days	40 days
PCB's	Chill at 4°C	5 days	40 days

2.3.4 Decontamination Procedures

All reusable sampling equipment (bailers, scoops, beakers, trowels, etc.) will be decontaminated prior to field entry and following each use. The decontamination procedures are outlined below:

1. Alconox detergent and potable water scrub;
2. Deionized water rinse;
3. Methanol rinse;
4. Deionized water rinse; and
5. Air dry

Following this decontamination procedure, equipment will be stored in airtight polyethylene wrap or bags for future on-site use. Whenever possible, pre-cleaned equipment will be used; however, if the need arises, equipment will be cleaned in the field according to the general procedures described above.

2.4 Water Quality Analyses

All of the scheduled water quality analyses will be performed in accordance with the 1998 NYSDEC 6 NYCRR Part 360 Regulations. The values for field determined physical and chemical parameters (i.e., specific conductance, temperature, pH, ORP-Eh and dissolved oxygen) will be reported to the analytical laboratory when samples are submitted, and both sets of data (field and laboratory parameters) will be included on the analytical report. All laboratory analytical data will be reported in accordance with USEPA Analytical Services Protocol (ASP) guidelines.

2.4.1 Leachate Seeps

There is no leachate collection system installed as a component of this closure, and therefore, collection and analysis of the landfill leachate is not necessary or required during the post-closure period. However, in the event that leachate seeps are observed during a sampling event or inspection, provisions should be made to report and repair the seep area in accordance with the Site Maintenance Plan presented in Section 3.

2.4.2 Explosive Gas Monitoring (Methane)

A post-closure gas-monitoring program will be initiated at the Rosen Site to document the presence of any decomposition gases (primarily methane). The methane gas surveys will be conducted semi-

annually during sample collection site visits. Ideally, the gas survey will be conducted when the ground is frozen or wet, and wind velocities and atmospheric pressure are low.

A portable methane gas detection instrument will be utilized to take gas headspace readings at each of the designated groundwater monitoring points included as part of the post-closure monitoring program. The exposed ends of the monitoring points will be sealed with parafilm tape at least one hour prior to taking the explosive gas reading. This will allow gases that are normally vented to accumulate in the well's headspace. A sample explosive gas monitoring log is attached in Appendix B. The parafilm tape will be punctured and the gas meter probe will be immediately inserted into the gas monitoring location for direct readings.

If methane gas concentrations at a specific location are detected greater than 25% of the Lower Explosive Limit (L.E.L.), the results will be documented in the field and then evaluated regarding potential action during the preparation of the biannual post-closure monitoring report.

If methane gas concentrations are non-detectable or below standards than monitoring will be discontinued after 1 year.

2.5 Documentation and Reporting

2.5.1 Water Quality Sampling Records

A field logbook or field sampling sheet must be maintained as a written record of the sample collection process at each monitoring point. The following minimum information should be recorded (see Appendix A):

- Project ID; sampling point ID; sampling personnel; date and time; weather conditions; sampling sequence.

- Well depth; casing diameter; reference datum; static water level; well volume; well condition.

- Purging method; purging time/duration; well recovery/recharge rate; volume purged.

- Sample withdrawal method; sampling time; number and type of containers; field measured parameters; sample filtration; sample appearance/field observations.

- Sample storage and transportation method; delivery date and time; analytical parameters requested.

Each sample bottle should be legibly and indelibly labeled with the following minimum information:

- Sampling point ID; project ID; collection data and time; parameters requested (if space permits).

The delivery of samples to the analytical laboratory must be accompanied by a completed chain-of-custody record, on which the following minimum information should be recorded:

- Project ID; sampling point ID; collection date and time; parameters requested; number and type of containers; signature of collector; signature of persons maintaining custody; inclusive dates of possession.

2.5.2 Gas Monitoring Records

A field logbook or field sampling sheet must be maintained as a written record of the gas monitoring. The following minimum information should be recorded (see Appendix B):

- Project ID; sampling point ID; sampling personnel; date and time; weather conditions including wind velocity and barometric pressure; sampling sequence, and reading in Lower Explosive Limit (L.E.L) or percent gas.

2.5.3 Quality Control

The analytical laboratory must be ASP/CLP certified by the DOH's Environmental Laboratory Approval Program (ELAP), and must maintain and utilize proper analytical Quality Assurance/Quality Control (QA/QC) procedures.

All equipment used for field determinations must be calibrated at least daily prior to and after use. After use at each monitoring point, the probes and apparatus must be thoroughly cleaned and rinsed prior to contacting any water from the next sampling point.

2.5.4 Data Validation

Analytical results obtained throughout the implementation of this plan will be subject to third-party data validation on an annual basis to ensure that the resulting data were generated in accordance with the QA/QC guidelines specified by the NYSDOH ASP/CLP programs. Analytical data will be validated during one event per year when the fourth quarter sample analysis is performed. Validation deficiencies, if any, will

be provided to the contract laboratory so data in subsequent reports will be consistent with QA/QC guidelines. The third-party data validation contractor will be pre-approved by the site owner's consultant and selected prior to the initial sampling event. The selected validator will be required to document his/her qualifications to meet the NYSDEC specifications and criteria for validation.

2.5.5 Monitoring Reports

The semi-annual monitoring report will consist of the field sampling data sheets or transcriptions from the field logbook for each monitoring point, the field inspection form, the chain-of-custody record, and the laboratory analysis report. The latter should include:

- Project ID; sample point ID; sampling data and time; date of analysis, analytical results including field-determined parameters.

All analytical and field data will be reviewed and compiled in a database of historical results. Excursions over applicable NYSDEC Part 703 water quality standards or guidance values will be evaluated and presented. Field observations during a sampling event concerning the cap system, drainage system, gas vent system and other noted deficiencies will be included as well.

In addition, an annual summary report will be prepared as part of the Fourth Quarter report. Observations as to well access and maintenance conditions will be noted, and recommendations for any necessary improvements will be made. Conclusions will also be drawn about the status of the site and the general groundwater quality.

2.6 Contingency Water Quality Monitoring

In the unlikely event that groundwater quality demonstrates a significant statistical variance from the historical water quality or exhibits the presence of other indicators which have been historically absent or present at low levels, all of the affected monitoring points will be re-sampled following review and/or recommendations by USEPA and the site owner's consultant.

3.0 POST-CLOSURE SITE MAINTENANCE ACTIVITIES

Following closure, specific maintenance activities will be performed routinely to monitor the integrity of the landfill cover, drainage, and gas systems. The following section identifies the maintenance activities to be conducted:

3.1 Routine Inspections

Routine inspections should be performed on the landfill site to identify any problems that might have developed with the cap system, drainage system and gas vent system. This inspection should also identify the presence of any vectors on the site. Since the site has limited access, the inspection will be performed at the same time as the semi-annual water quality-sampling round associated with the Environmental Monitoring Program during the Second and Fourth Quarters of each year. A sample inspection form is attached in Appendix C.

3.2 Cap System

Problems with the landfill cap could include cracking, settlement, erosion or loss of vegetation in the cover soils on the top of the landfill or on the side slopes. If the cover soils contain cracks or settlements, the barrier layer (i.e., geomembrane) should be exposed to determine if it is still operational. If this layer has been damaged, it should be repaired prior to replacing the cover soils and reseeding. All activities associated with the repair of the barrier layer (e.g., construction, testing, etc.) will be performed under the supervision of a licensed professional engineer. Any erosion in the cover soil should be repaired by replacing the eroded soil and compacting it prior to re-establishing the vegetative cover. Any loss of vegetation should be repaired by reseeding, fertilizing and

mulching the unprotected area. In order to prevent excessive vegetative growth and trees which may damage the protective barrier layer and the restoration area, the vegetative cover should be mowed bi-annually.

3.3 Drainage System

The drainage system inspection should identify any erosion of the ground surface in the area of the toe of slope where water discharges from the lateral drainage layer. Additionally, all perimeter swales, check dams, toe-of-slope drainage pipes and culverts should be inspected to ensure proper performance. All eroded areas should be repaired and reseeded to prevent additional erosion.

3.4 Gas Venting System

Inspection of the gas venting system should include checking the vents for any physical damage or plugging, and checking the cap adjacent to the vents for any settlement. All plugs or clogs in the vents should be cleared, and any damaged vents should be repaired or, if necessary, replaced.

3.5 Vectors

The presence of any vectors on the site should be identified. If vectors are identified, actions will be taken to remove or eliminate them from the site.

3.6 Access Roads

All access roads should be inspected quarterly for signs of erosion or excessive wear, and reported to the City of Cortland for repairs.

3.7 Emergency Contacts

The following is a list of emergency contacts applicable to health, safety and environmental emergencies and/or issues:

City of Cortland:

Engineer's Contact:	William Southern, P.E. (Barton & Loguidice, P.C.)	(315) 457-5200
USEPA:	Mark Granger	(212) 637-3351
NYSDEC:	Jim Drumm	(518) 402-9814
Cortland County Health Department:		(607) 753-5035
Personal Injury, Accident or Fire: (Emergency)		911

APPENDICES

APPENDIX A

FIELD SAMPLING DATA SHEET

Barton & Loguidice, P.C.
Consulting Engineers

FIELD SAMPLING DATA SHEET

SITE: _____ **SAMPLE LOCATION:** _____

CLIENT: _____ **JOB #:** _____

Weather Conditions: _____ Temp: _____

SAMPLE TYPE: Groundwater ☐ Surface Water ☐ Other (specify):_____

Sediment ☐ Leachate ☐ _____

WATER LEVEL DATA

Static Water Level (feet)*:	
Measured Well Depth (feet)*:	
Well Casing Diameter (inches):	
Volume in Well Casing (gallons):	

*depth from measuring point

Measuring Point: Top of Riser ☐
Other (specify): _____
Measured by:
Time: Date

PURGING METHOD

Equipment:

Bailer ☐ Submersible Pump ☐ Air Lift System ☐
Bladder Pump ☐ Foot Valve ☐ Peristaltic Pump ☐
Dedicated ☐ *Non-dedicated* ☐

Volume of Water Purged (gallons):

Did well purge dry? No ☐ Yes ☐
Did well recover? No ☐ Minimal Recovery Recovery time:

SAMPLING METHOD

Equipment:

Bailer ☐ Submersible Pump ☐ Air Lift System ☐
Bladder Pump ☐ Foot Valve ☐ Peristaltic Pump ☐
Dedicated ☐ *Non-dedicated* ☐

Sampled by: Time: Date:

SAMPLING DATA

Sample Appearance

Color: Sediment:
Odor:

Field Measured Parameters

pH (Standard Units)		Sp. Conductivity (umhos/cm)	
Temperature (F)		Eh-Redox Potential (mV)	
Turbidity (NTUs)		Dissolved Oxygen (mg/L)	

Samples Collected (Number/Type)

_____

Samples Delivered to: _____ Time:_____ Date:_____

COMMENTS:

_____

APPENDIX B

EXPLOSIVE GAS MONITORING LOG

ROSEN SITE

GAS SURVEY LOG

Date:

Logged By:

Instrument Model:

Barometric Pressure:

Wind Velocity (mph):

Temperature(F):

GAS MONITORING POINT LOCATION	GAS READING (%VOLUME) or (%LEL)	COMMENTS
W-01		
W-02		
W-03		
W-04		
W-06		
W-07		
W-08		
W-09		
W-10		
W-11		
W-12		
W-16		
W-18		
W-19		
W-20		

Notes:
NIR= No Instrument Response
LEL= Lower Explosive Limit

Barton & Loguidice, P.C.
Consulting Engineers

APPENDIX C

LANDFILL INSPECTION FORM

Barton & Loguidice, P.C.
Consulting Engineers

LANDFILL WALKOVER
POST - CLOSURE INSPECTION FORM

____ Quarter 20___

Site: _____ **Date:** _____

Client: _____ **Inspector:** _____

Proj.#: _____ **Weather:** _____

Site Security

Access Locked? _____

Perimeter Fencing? _____

Monitoring Wells

Well I.D.'s: _____

Well locks: _____

Surface Seals: _____

Gas Vents

Vent Conditions: _____

_____

Maintenance Buildings

Condition (If Applicable):

_____

_____

Landfill Cap

Vegetation: _____

General Condition: _____

_____

Additional Comments:

_____

_____

_____

_____

APPENDIX D

HEALTH AND SAFETY

HEALTH AND SAFETY PLAN

CLIENT:	Rosen Site Joint Defense Group
SITE NAME:	Rosen Site
SITE ADDRESS:	Cortland, New York
PROJECT NUMBER:	617.001
DATE PREPARED:	
DATE(S) REVISED:	
DATE EXPIRES:	

HEALTH AND SAFETY PLAN APPROVALS

PROJECT MANAGER:

Andrew Barber	_____	_____
Name	Signature	Date

FIELD CONSTRUCTION INSPECTOR/SITE SAFETY OFFICER:

TBD	_____	_____
Name	Signature	Date

HEALTH & SAFETY MANAGER:

TBD	_____	_____
Name	Signature	Date

ACKNOWLEDGMENTS:

TBD	_____	_____
Subcontractor	Name	Date
TBD	_____	_____
Subcontractor	Name	Date

TABLE OF CONTENTS

TABLE OF CONTENTS - Continued

1.0 GENERAL INFORMATION

1.1 Introduction

This Health and Safety Plan (HASP) addresses those activities associated with the scope of work described in this plan and the Remedial Design (RD) and Remedial Action (RA) Work Plan for the Rosen Site. HASP will be used by Barton & Loguidice employees.

Any subcontractors working at the site will either adopt this plan for their employees or provide their own plan, which meets or exceeds the requirements of HASP. Any other health and safety plans proposed to be used on the site must be reviewed by EPA. The content of HASP may change or undergo revision based on additional information, monitoring results or changes in the scope of work.

This specific HASP has been prepared for the use of Barton & Loguidice and its employees and supplements the Health and Safety training that each Barton & Loguidice employee receives. Due to the potentially hazardous nature of the site covered by this plan and the activity occurring on the site, it is not possible to discover, evaluate, and provide protection for all possible hazards, which may be encountered. This plan is written for the specific site conditions, purposes, dates, and personnel specified, and must be amended if these conditions change.

Barton & Loguidice, therefore, cannot and does not assume any liability by the use or reuse of the plan by any client, contractor or their employees or agents in any another location. Any reliance on the HASP will be at the sole risk and liability of such party.

1.2 Acknowledgment

I acknowledge having reviewed this Health and Safety Plan, understand its contents and agree to abide by it. Additionally, I am current in the training and medical surveillance requirements specified in 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response.

(Please Print Clearly)

NAME	DATE	COMPANY AFFILIATION
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

2.0 PROJECT INFORMATION

2.1 Site Description

The Rosen Site is approximately 20 acres in size, and is located on the southern side of the City of Cortland, New York. The site was used from roughly 1908 until 1971 for a wire mill operation. From 1971 to 1980, the site was used for the processing of scrap, primarily for the crushing and recycling of cars.

See the Remedial Action Work Plan for further detail and Site Map

2.2 Background Information

See the Remedial Action Work Plan for background information.

2.3 Purpose of Site Work

The objectives of the work to be conducted for the Rosen Superfund Site are to control the source of contamination at the site, to reduce and minimize the downgradient migration of contaminants in the and to minimize any potential future health and environmental impacts.

2.4 Scope of Work *(by task in order of execution)*

1. Excavation and re-location of TCA-contaminated soil;
2. Stabilization of the banks of Perplexity Creek and its tributary;
3. Design and construction of a cap on the former cooling pond;
4. Installation of a site-wide surface cover; and
5. Implementation of a sediment-monitoring program.

2.5 Utility Clearance

Will be performed by Underground Facility Protective Organization (UFPO) 1-800-962-7962:

1. Date to be performed: 72-hours prior to excavating and/or subsurface drilling.
2. Methods utilized: UFPO contacts local utilities.

3.0 HEALTH AND SAFETY RISK ANALYSIS

3.1 Chemical Hazards

Different classes of contaminants have been detected in soil at the site, including metals, volatile organic compounds (VOCs) polychlorinated biphenyls and polynuclear aromatic hydrocarbons (PAHs). The principal routes of exposure to these contaminants are by ingestion of contaminated soil or groundwater, and by inhalation of contaminated soil (dust). Site-specific and chemical-specific information is provided in the following tables.

TABLE 3-1
KNOWN AND/OR PROBABLE CONTAMINANTS*

CONTAMINANT	SOURCE OF CONTAMINATION	SOURCE OF SAMPLE DATA (soil/water)	RANGE OF CONCENTRATION
Arsenic	Disposal	Soil	
Chromium	Disposal	Soil	
Manganese	Disposal	Soil	
Lead	Disposal	Soil	
Benzo(a)pyrene	Disposal	Soil	
PCBs	Disposal	Soil	
Toluene	Disposal	Soil	>1 mg/kg
Xylenes	Disposal	Soil	>1 mg/kg
Ethylbenzene	Disposal	Soil	>1 mg/kg
1,1,1-Trichloroethane	Disposal	Soil	>1 mg/kg
1,1,1-Trichloroethane	Disposal	Groundwater	ND-5000 ug/L
1,1-Dichloroethene	Disposal	Groundwater	
1,2-Dichloroethane	Disposal	Groundwater	
Trichloroethene	Disposal	Groundwater	ND-200 ug/L

*Source of data: Feasibility Study, Rosen Site, Cortland, New York; Blasland, Bouck & Lee, April 1997

TABLE 3-2
ASSESSMENT OF CHEMICALS OF CONCERN

Chemical Name (or class)	PEL/TLV	Other Pertinent Limits (Specify)	Warning Properties - Odor Threshold	Potential Exposure Pathways	Acute Health Effects	Chronic Health Effects
Arsenic	0.010 mg/m3	IDLH = 5 mg/m3	Metal	Inhalation, Absorption, Ingestion, Contact	Eye, skin & respiratory irritation	Liver, kidney damage; lungs, lymphatic system
Chromium	0.5 mg/m3	IDLH = 25 mg/m3	Metal	Inhalation, Ingestion, Contact	Eye, skin & respiratory irritation	Eye, skin & respiratory system
Manganese	1 mg/m3	IDLH = 500 mg/m3	Metal	Inhalation, Ingestion	Confusion, fatigue, fever, vomit	Respiratory system; CNS; blood; kidneys
Lead	0.1 mg/m3 (NIOSH) 0.05 mg/m3 (OSHA)	IDLH = 100 mg/m3	Metal	Inhalation, Ingestion, Contact	Eye irritation; abdominal pain	Eyes, CNS, GI tract, CNS, gums, kidneys, blood,
Benzo(a)pyrene	0.1 mg/m3 (NIOSH) 0.2 mg/m3 (OSHA)	IDLH = 80 mg/m3	Hydrocarbon/ asphalt odor	Inhalation, Contact	Skin, lung irritation	Respiratory system, skin, bladder, kidneys
PCBs	0.001 mg/m3 (NIOSH)	IDLH = 5 mg/m3	Mild hydrocarbon odor	Inhalation, Absorption, Ingestion, Contact	Eye irritation, chloracne	Skin, eyes, kidneys, liver, reproductive system
Toluene	200 ppm (OSHA) / 100 ppm (NIOSH)	STEL = 150 ppm C = 300 ppm IDLH = 500 ppm	Colorless liquid with a sweet, pungent, benzene-like odor	Inhalation, Absorption, Ingestion, Contact	Eye, skin & respiratory irritation; confusion dizziness, headache	CNS effects; liver, kidneys, dermatitis
Total Xylenes	100/100 ppm	STEL = 150 ppm IDLH = 900 ppm	Colorless liquid with an aromatic odor	Inhalation, Absorption, Ingestion, Contact	Eye, skin & respiratory irritation; dizziness, drowsiness, nausea, vomit, headache, abdominal pain	Dermatitis, CNS effects, liver/kidney damage, blood
Ethylbenzene	100/100 ppm	STEL = 125 ppm IDLH = 800 ppm	Colorless liquid with an aromatic odor	Inhalation, Absorption, Ingestion, Contact	Eye, skin & respiratory irritation; CNS effects; headache	Dermatitis, CNS effects
1,1,1-Trichloroethane	10 ppm (OSHA) / 10 ppm (NIOSH)	IDLH = 100 ppm	Colorless, oily liquid with a chloroform-like odor	Inhalation, Absorption, Ingestion, Contact	Eye, skin & respiratory irritation	Eyes, respiratory system, CNS, liver, kidneys

TABLE 3-2 – Continued
ASSESSMENT OF CHEMICALS OF CONCERN

Chemical Name (or class)	PEL/TLV	Other Pertinent Limits (Specify)	Warning Properties - Odor Threshold	Potential Exposure Pathways	Acute Health Effects	Chronic Health Effects
1,1-Dichloroethane	100/100 ppm	IDLH = 3,000 ppm	Colorless, oily liquid with a chloroform-like odor	Inhalation, Absorption, Ingestion, Contact	Eye, skin & respiratory irritation; depression; CNS effects	Dermatitis, CNS effects, liver, kidneys, lungs
1,2-Dichloroethene	200 ppm	IDLH = 1,000 ppm	Colorless liquid with a slightly acrid chloroform-like odor	Inhalation, Absorption, Ingestion, Contact	Eye, skin & respiratory irritation; depression; CNS effects	Eyes, respiratory system, CNS
Trichloroethene	100 ppm OSHA)	IDLH = 1,000 ppm	Colorless, oily liquid with a chloroform-like odor	Inhalation, Absorption, Ingestion, Contact	Eye, skin & respiratory irritation; dizziness, drowsiness, nausea, vomit, headache, abdominal pain	Eyes, skin, respiratory system, heart; liver, CNS

PEL = OSHA Permissible Exposure Limit; represents the maximum allowable 8-hr.Time Weighted Average (TWA) exposure concentration.
TLV = ACGIH Threshold Limit Value; represents the maximum recommended 8-hr. TWA exposure concentration.
STEL = OSHA Short-term Exposure Limit; represents the maximum allowable 15 minute TWA exposure concentration.
TLV-STEL = ACGIH Short-term Exposure Limit; represents the maximum recommended 15 minute TWA exposure concentration.
C = OSHA Ceiling Limit; represents the maximum exposure concentration above which an employee shall not be exposed during any period without respiratory protection.
IDLH = Immediately Dangerous to Life and Health; represents the concentration at which one could be exposed for 30 minutes without experiencing escape-impairing or irreversible health effects.
TPH = Total Petroleum Hydrocarbons
VOC = Volatile Organic Compounds
() = ACGIH TLV Intended Change
OSHA = Occupational Safety and Health Administration
ACGIH = American Conference of Governmental Industrial Hygienists
CNS = Central Nervous System

3.2 Non-Chemical Hazards

Non-chemical hazards are associated with:

1. Slip, trip, and fall during all activities (uneven terrain);
2. Moving parts of heavy equipment;
3. Noise from heavy equipment;
4. Utility hazards;
5. Heat or cold stress depending on the season of work activity.

4.0 HEALTH AND SAFETY FIELD IMPLEMENTATION

4.1 Personal Protective Equipment (PPE) Requirements

PPE may be upgraded or downgraded by the Field Supervisor based upon site conditions and air monitoring results.

See Table 4-2 for PPE requirements.

4.2 Monitoring Equipment Requirements

Monitoring is conducted by the Field Supervisor or designee. Conduct contaminant source monitoring initially. Complete breathing zone monitoring if source concentrations are near or above contaminant action level concentrations. Log direct reading monitoring as specified in the Table 4-1 Monitoring Protocol, and record results on Direct Reading Report form. Direct reading instrumentation must be calibrated daily, prior to use, and results of the calibration shall be documented on Field Log. Field-screening instrumentation will be capable of quantifying TCA and all field instrumentation will be calibrated daily prior to use.

Table 4-1 also discusses the use of action levels to halt site work, based on the requirements of New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) 4031 and New York State Dept. of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP). Copies of the TAGM and CAMP are contained in Appendix D of the RAWP. The requirements of these documents are incorporated in this HSP by reference and as specifically identified in Table 4-1.

TABLE 4-1
MONITORING PROTOCOLS AND CONTAMINANT ACTION LEVELS

CONTAMINANT/ ATMOSPHERIC CONDITION	MONITORING EQUIPMENT	MONITORING PROTOCOL	BREATHING ZONE* ACTION LEVEL CONCENTRATIONS	
			MONITORED LEVEL FOR MANDATORY RESPIRATOR USE	MONITORED LEVEL** FOR MANDATORY WORK STOPPAGES
VOCs	Photoionization Detector (PID) such as an Organic Vapor Monitor (OVM)	Continuous monitoring. Initially, readings will be recorded every 15 minutes at beginning of task. If no sustained readings are obtained in the breathing zone, readings will be recorded every 30 minutes.	10 ppm	5 ppm over background at work zone perimeter, per New York State Dept. of Health (NYSDOH) Community Air Monitoring Plan (CAMP)
Flammable Organics	Combustible Gas Indicator (CGI)	Prior and during initial soil disturbance. Periodically to check monitoring wells and gas vents.		Work will be discontinued if the CGI readings are 10 percent of the LEL. Work will not resume until the readings drop below 10 percent of the LEL.
Particulates	MiniRam or equivalent	Three times daily when work is being conducted which can generate dust, e.g. – waste exhumation, movement and placement of cap construction materials (sand, soil, etc.).	150 ug/m3 per NYSDEC TAGM 4031	150 ug/m3 at fenceline per NYSDEC TAGM 4031 and NYSDOH CAMP

* Monitoring performed at operator's breathing zone. Monitor at the source first; if the source concentration is near or above the action level concentration, monitor in the breathing zone.
** Call the Project Manager and Health and Safety Manager for consultation.

TABLE 4-2
PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS

JOB TASKS	PPE							LEVEL OF PROTECTION	LEVEL OF UPGRADE	ADDITIONAL PPE FOR UPGRADE	MONITORING EQUIPMENT
	SUIT	GLOVES	FEET	HEAD	EYE	EAR	RESPIRATOR				
1. 1 & 3	Std.	Work	Steel	HH	Glass/ Goggles	Plugs	N/A	D	C	Full APR	PID
2. 2	Std.	V/N	Steel	N/A	N/A	N/A	N/A	D	C	Full APR	PID

Personal Protective Equipment (PPE):

SUIT:

Std	=	Standard work clothes
Tyvek	=	Uncoated Tyvek disposable coverall
PE Tyvek	=	Polyethylene-coated Tyvek
Chemrel	=	Chemrel coverall with hood
Saranex	=	Saranex-laminated Tyvek
Lt PVC	=	Light wt. PVC rain gear
Med PVC	=	Medium wt. PVC suit
Hvy PVC	=	Heavy wt. PVC coverall with hood
Road	=	Roadwork vest
Nomex	=	Nomex coveralls

GLOVES:

Work	=	Work gloves (canvas, leather)
Neo	=	Neoprene gloves
PVC	=	PVC gloves
N	=	Nitrile gloves
V	=	Vinyl gloves
L	=	Latex gloves

Personal Protective Equipment (PPE):

FEET:

Steel	=	Steel-toe boots
Steel+ boots	=	Steel-toe Neoprene or PVC
Booties	=	PVC or Latex booties

HEAD:

HH	=	Hard hat

EYE:

Glass	=	Safety glasses
Goggle	=	Goggles
Shield	=	Face shield

EAR:

Plugs	=	Earplugs
Muff	=	Ear muffs

Personal Protective Equipment (PPE):

RESPIRATOR:

APR	=	Air-purifying respirator
Full APR	=	Full face APR
Half APR	=	Half face APR
PAPR	=	Powered Air-purifying Respirator
SAR	=	Airline supplied air respirator
SCBA	=	Self contained breathing apparatus
Escape	=	Escape SCBA
OV	=	Organic vapor cartridge
AG	=	Acid gas cartridge
OV/AG	=	Organic vapor/acid gas cartridge
AM	=	Ammonia cartridge
D/M	=	Dust/mist pre-filter and cover for cartridge
HEPA	=	High efficiency particulate air filter cartridge

OTHER:

*	=	Use if contact with wet soil or water
**	=	Optional use except if specific hazard present

Return all completed Health and Safety plan forms to the Project Manager for review and signature and then to the Health and Safety Manager.

4.3 Decontamination Procedures

Depending on the specific job task, decontamination may include personnel themselves, sampling equipment, and/or heavy equipment. The specified level of protection for a task (A, B, C, or D) does not in itself define the extent of personal protection or equipment decontamination. For instance, Level C without dermal hazards will require less decontamination than Level C with dermal hazards. Heavy equipment will always require decontamination to prevent cross-contamination of samples and/or facilities. The following sections summarize general decontamination protocols.

4.3.1 Heavy Equipment

Heavy equipment will be decontaminated following episodes of working with heavily contaminated soil/debris or prior to removal from the site. Decontamination of heavy equipment will be done prior to personnel decontamination at a location to be determined by the Field Supervisor. Containment systems will be set-up, if appropriate. Heavy equipment decontamination will be primarily accomplished by washing with a high-pressure water spray. If needed, detergent solution will be used along with scrubbing to remove dirt and contaminants from equipment surfaces.

4.3.2 Personnel

Use steps and procedures outlined below as guidelines for personnel decontamination:

- Brush loose soil from body;
- Suit removal (where appropriate);

- Respirator/hard hat removal (where appropriate);
- Respirator wash (where appropriate);
- Glove removal;
- Field wash hands; and
- Boot removal (where appropriate).

4.3.3 Samples and Sampling Equipment

The decontamination of sampling equipment will be accomplished by using the following procedures:

- Detergent/water wash;
- Tap water rinse;
- 10% nitric acid (ultra pure) rinse (if sampling is metals);
- Deionized/distilled water rinse;
- Acetone only or methanol/hexane rinse (pesticide grade or better);
- Deionized/distilled water rinse;
- Air dry.

During periods of transportation and non-use, decontaminated sampling equipment will be wrapped on aluminum foil. The same contamination line will be used for sampling equipment decon as is used for personnel decon.

4.3.4 Decon Wastes

Spent decon solutions may be required to be drummed and disposed of as hazardous waste, and/or solvent solutions may be required to be segregated from water rinses. Decontamination shall be performed

in a manner that minimizes the amount of waste generated. If needed, decontamination derived wastes will be drummed; drums will be properly labeled and staged on pallets.

4.4 Medical Monitoring

Medical monitoring of employees engaged in hazardous waste operations is conducted consistent with the requirements of 29 CFR 1910.120. The medical monitoring program consists of minimum yearly physicals, including the following:

- Physical examination
- Blood pressure
- Vision Urinalysis
- Pulmonary Fitness Test
- Blood analysis CBC/CP
- Chest x-ray
- EKG

5.0 SITE OPERATING PROCEDURES

5.1 Initial Site Entry Procedures

- Locate nearest available telephone.
- Prior to working on-site, conduct an inspection for physical and chemical hazards.
- Conduct or review utility clearance prior to start of work, if appropriate.
- Note any specialized protocols particular to work tasks associated with the project.

5.2 Daily Operating Procedures

- Hold Tailgate Safety Meetings daily prior to work start and as needed thereafter.
- Use monitoring instruments and follow designated protocol and contaminant action levels.
- Use personal protective equipment (PPE) as specified.
- Use hearing protection when working around heavy equipment.
- Remain upwind of operations and airborne contaminants, if possible.
- Establish a work/rest regime when ambient temperatures and protective clothing create a potential heat stress hazard.
- Do not carry cigarettes, gum, etc. into contaminated areas.
- Refer to Field Supervisor for specific safety concerns for each individual site task.
- Be alert to your own physical condition.
- All accidents, no matter how minor, must be reported immediately to the Field Supervisor.

5.3 Site Control

The exclusion zone for RA Construction Activities is shown on Figure C-1. Access to this area will be limited to authorized personnel from Nixon Peabody, the Rosen Site Joint Defense Group, B&L, Clean Harbors, regulatory agencies and contractors/ subcontractors to B&L or Clean Harbors. Decontamination (personnel and equipment) will be conducted within the work zone, as shown on Figure C-2. Based on the current site configuration and anticipated work activities, movement of these zones is not planned.

6.0 EMERGENCY RESPONSE PROCEDURES

6.1 Emergency Incident Procedures

The nature of work at contaminated or potentially contaminated work sites makes emergencies a continual possibility. Although emergencies are unlikely and occur infrequently, a contingency plan is required to assure timely and appropriate response actions. The contingency plan is reviewed at tailgate safety meetings. Based on the type of work to be conducted and the concentrations of contaminants at the site, the capabilities of local emergency service providers (e.g. – fire department, hospital) are anticipated to be fully sufficient to address site-related emergencies. A copy of this document will be put into the public repository to apprise the public of health and safety procedures at the site.

6.1.1 Emergency Incident Procedures

If an emergency incident occurs, the following actions will be taken by Field Construction Inspector:

Step 1: The situation will be sized-up based on the available information.

Step 2: Field Construction Inspector will notify the Project Manager.

Step 3: As appropriate, Field Construction Inspector will evacuate site personnel and notify emergency response agencies (police, fire, etc.).

Step 4: As necessary, Field Construction Inspector will request assistance from outside sources, and/or allocate personnel and equipment resources for response.

Step 5: Field Construction Inspector will Consult the posted emergency phone list, and contact key project personnel.

Step 6: Field Construction Inspector will prepare an incident report and forward this report to Project Manager or Health and Safety Manager within 24 hours.

6.1.2 Medical Emergencies

If a medical emergency occurs, the following actions will be taken by Field Construction Inspector:

Step 1: Field Construction Inspector will assess the severity of the injury.

Step 2: Field Construction Inspector or his designee will perform life-saving first aid/CPR as necessary to stabilize the injured person.

Step 3: Field Construction Inspector will get medical attention for the injured person immediately. (Call 911 or consult the Emergency Contacts list which must be posted at the site).

Step 4: Depending on the type and severity of the injury the injured employee will be transported to the nearest hospital emergency room or nearby medical clinic.

Step 5: Field Construction Inspector will prepare an incident report and forward this Report to Project Manager or Health and Safety Manager within 24 hours.

6.1.3 Emergency Routes

Refer to Field Construction Inspector for specific procedures.

6.2 Emergency Routes

1. Hospital route (*TO BE POSTED*) see Figure C-3.
2. Emergency contacts see Attachment 1.

6.3 Site-Specific Requirements in Event of an Emergency:

6.3.1 Notifications (*Name, Title, Phone*)

Cortland Fire Department	911 or (607) 756-5613
NY State Police	(607) 756-5604
Cortland Ambulance Service	911
Cortland Memorial Hospital	(607) 756-3500

6.3.2 Evacuation Route

Identify Evacuation Route: Pendleton Street Gate

Identify Meeting Area (Perform Head Count): Pendleton Street Gate

6.3.3 Spill Containment Plan (*Specify*)

1. Not Applicable

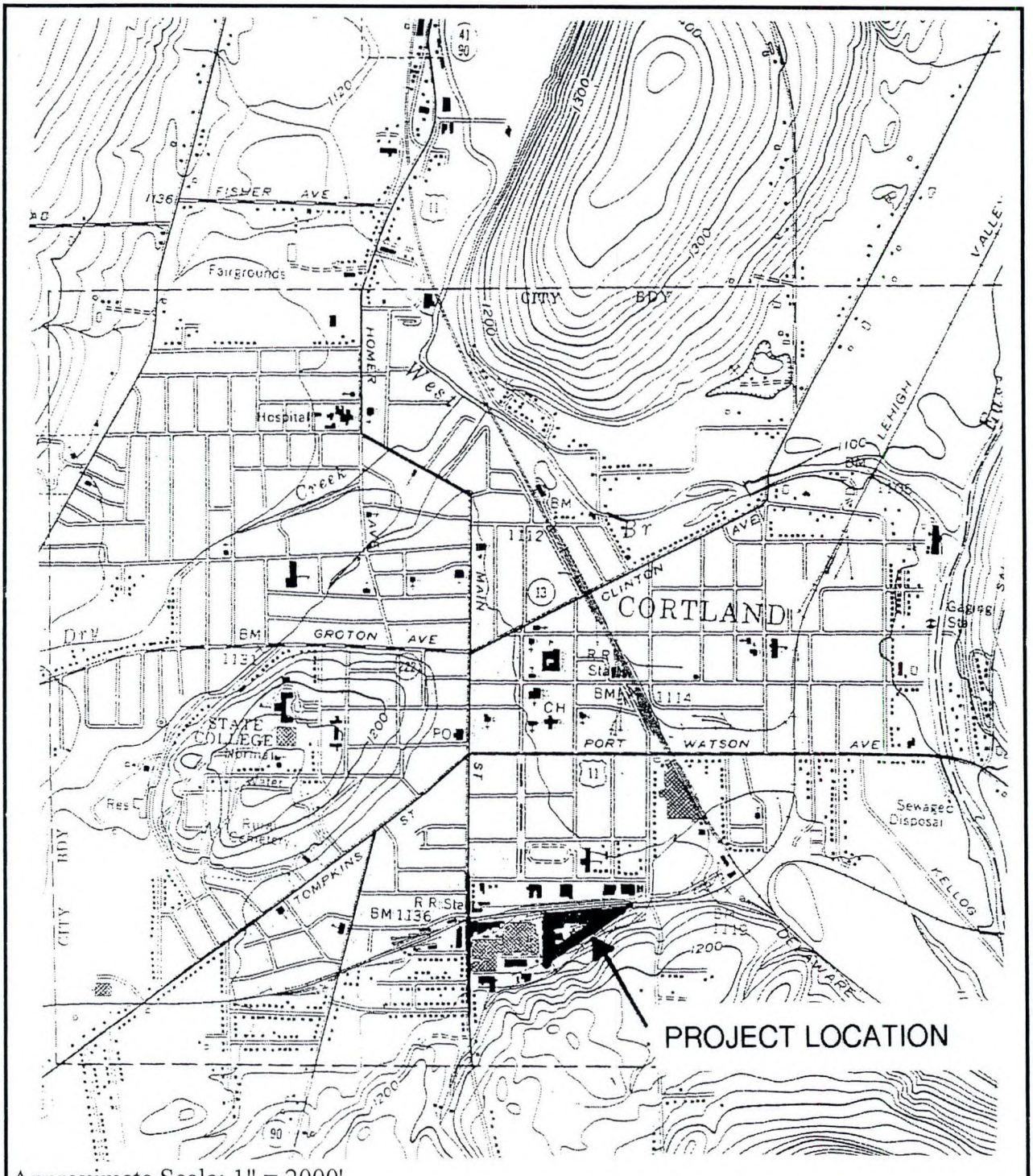
ATTACHMENT 1

EMERGENCY CONTACTS

EMERGENCY CONTACTS (To Be Posted)		
TITLE	**NAME**	**PHONE NUMBER**
EMERGENCY		
Police	NY State Police	**911** (607) 756-5604
Fire	Cortland Fire Department	**911** (607) 756-5613
Local Hospital	Cortland Memorial Hospital	(607) 756-3500
Local Ambulance/Rescue	Cortland Ambulance Service	**911**
Poison Control Center		(800) 336-6997
Hazardous Waste National Response Center	HAZMAT	(800) 424-8802
PROJECT/BUSINESS		
Project Manager	Andrew Barber	(518) 218-1801
Health and Safety Manager	TBD	(315) 457-5200
Field Supervisor	TBD	(315) 457-5200
Client Contact	David Armanini	(716) 263-1577
Site Contact		
Subcontractor		
Subcontractor		

FIGURE 1

SITE LOCATION MAP



Approximate Scale: 1" = 2000'

ROSEN SITE
FIGURE 1
SITE LOCATION MAP

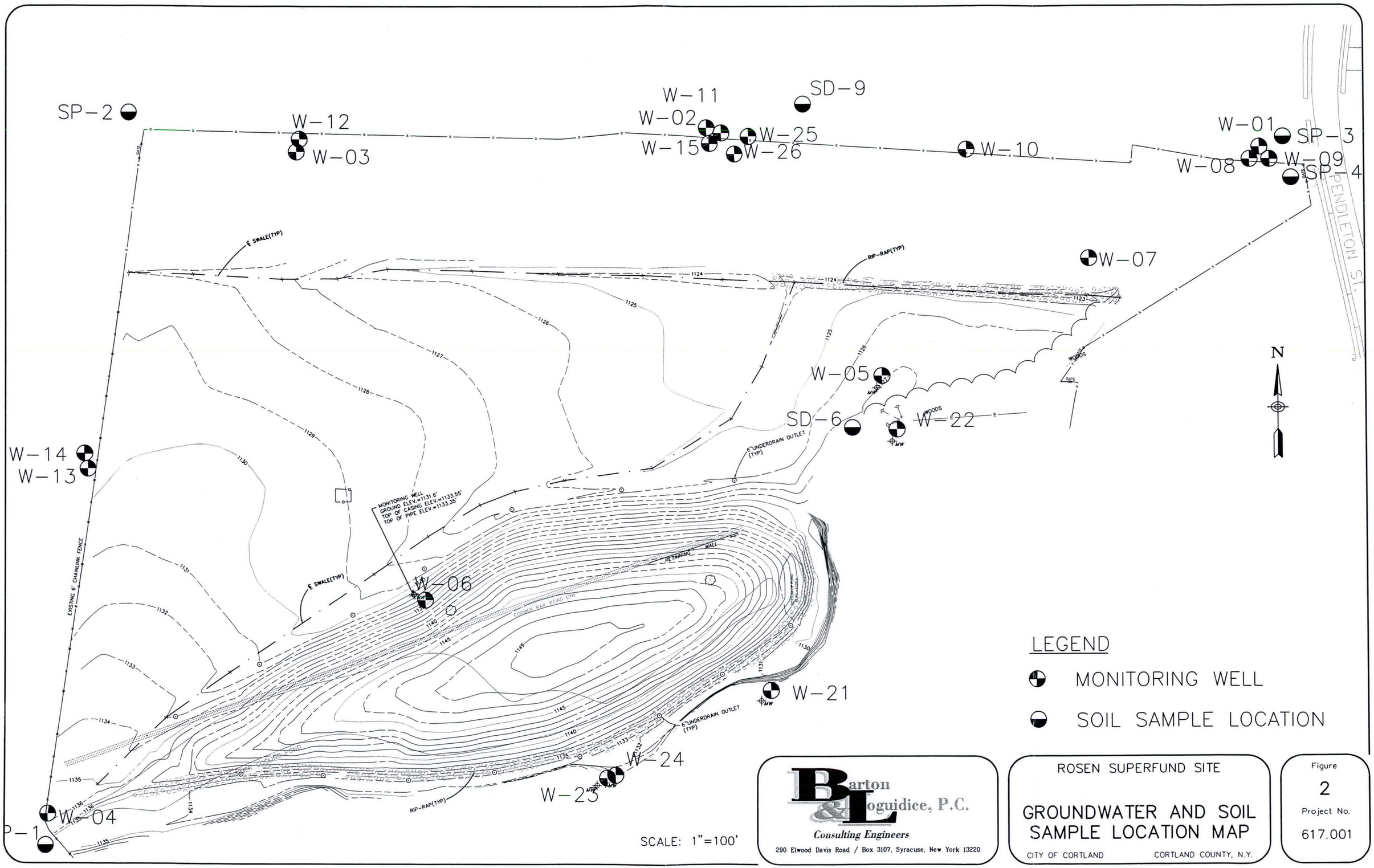
Cortland County New York

Barton & Loguidice, P.C.
Consulting Engineers

Base Map: NYSDOT 7 1/2 Minute Topographic Quadrangle (Cortland, 1955)

FIGURE 2

GROUNDWATER AND SOIL SAMPLE LOCATION MAP



LEGEND

- MONITORING WELL
- SOIL SAMPLE LOCATION

Barton & Loguidice, P.C.
Consulting Engineers
290 Elwood Davis Road / Box 3107, Syracuse, New York 13220

ROSEN SUPERFUND SITE

GROUNDWATER AND SOIL SAMPLE LOCATION MAP

CITY OF CORTLAND CORTLAND COUNTY, N.Y.

Figure 2

Project No. 617.001

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