Site Management Plan
Brownfield Environmental Restoration Project No. B00053-4
Riverside Technology Park – Lot 6, Schenectady, NY

This Site Management Plan applies to two parcels of land sub-divided from the subject parcel of Brownfield Environmental Restoration Project No. B00053-4. Riverside Technology Park – Lot 6, Schenectady, NY. The two parcels are referred to as the "Lot 6" parcel and the "sewer parcel." The original Lot 6 parcel was the subject of remediation of contaminated soil and ground water conditions and this Site Management Plan serves to provide environmental protections for future use of these properties.

The Site was remediated to the extent practicable under the New York State Environmental Restoration Program. The Site Management Plan specifies two areas of contamination of residual volatile organic (VOCs) and semi-volatile organic compounds (SVOCs) that remain in the subsurface soil (Area A and Area B shown in attached map/exhibit). Further, due to the former use of the property as a multiple oil storage facility, the potential for additional contamination exists. This Site Management Plan identifies and implements the institutional and engineering control required for the site, as well as any necessary monitoring and/or operations and maintenance of the remedy.

Site Description and History

Riverside Technology Park is a 40-acre tract of land that was donated to the City of Schenectady in 1982, and has been developed by the City of Schenectady Industrial Development Agency (COSIDA) for the establishment of light industrial businesses. An 11-acre portion of the 40-acre parcel at one time housed the Sousa Petroleum Bulk Storage Facility, which had an overall storage capacity of 8.8 million gallons.

The 11-acre parcel containing the former Sousa Petroleum Bulk Storage Facility was donated to the City of Schenectady in 1982. Ownership of the property was subsequently transferred from the City of Schenectady to COSIDA in May of 1987. The terminal was decommissioned in the late 1960's and early 1970's, and was subsequently razed in 1990 under the guidance and supervision of the NYSDEC. Evidence of subsurface petroleum contamination was discovered in September 1996 during the construction of Technology Drive in the vicinity of Lot No. 6.

Lot No. 6 consists of approximately 2.44 acres, is located on the north side of Technology Drive, and is wholly contained within the 11-acre former Sousa Bulk Storage Facility site area. Lot No. 6 is bordered to north by the City of Schenectady wastewater treatment facility on the south bank of the Mohawk River, and to the south by Lots No. 9 and 8 (across Technology Drive). Anthony Street forms the eastern site boundary of Lot No. 6, while Lot No. 6 is bordered to the west by a developed Lot No. 5.

Previous environmental investigations, that occurred in 1982 and 1991 and consisted of test borings, and groundwater samples, found evidence of petroleum impacts to the soil and groundwater. In 1996, test pits excavated at the Lot 6 site indicated petroleum impacts and subsequent sampling of monitoring wells on and adjacent to the site indicated impacts to groundwater.

Investigation completed under the NYSDEC Brownfield Restoration Program commenced in 1999 including soil borings, groundwater monitoring wells, soil gas survey, test pits, soil and groundwater sampling and testing, culminating in the generation of a Site Investigation / Remedial Alternatives Report in 2002, and followed by design of the selected remedial alternative and completion of the remedial work in 2005. In addition to the identified subsurface petroleum contamination, an area of contaminated dumped and spread debris and waste soil was discovered on the western portion of the site (the "Western Fill Soil") and removal of this material was included in the remediation activities.

Remediation Cleanup Goals

The DEC ROD identified the following cleanup goals (Remedial Action Objectives – RAOs):

"• Reduce, control, or eliminate to the extent practicable the petroleum contamination present within the soils on site.

- Eliminate the potential for direct human or animal contact with the contaminated soils during site redevelopment.
- Prevent, to the extent practicable, migration of contaminants in the subsurface to groundwater.
- Provide, to the extent practicable, for attainment of SCGs for soil and groundwater quality."

The property is restricted from residential use. In addition, the DEC ROD called for institutional controls to be applied as follows:

"Institutional controls in the form of existing use and development restrictions preventing the use of groundwater as a source of potable or process water without necessary water quality treatment as determined by the Schenectady County Department of Health."

The Remedial Action activities were required to remove contaminated soils that exceeded the following concentrations of Volatile Organic compounds (VOCs), as determined by laboratory testing by EPA Method 8260:

Individual Target VOCs	10 ug/kg (ppm)
Total VOCs + 10 TICs:	100 ug/kg (ppm)

Remedial Action

Remedial action was carried out as a Brownfield Restoration Project in accordance with plans and activity approved by the NYSDEC. Remediation consisted of excavation and removal of petroleum contaminated soil with disposal at permitted landfill facilities or treatment by thermal destruction at a remote, permitted commercial facility.

Excavations were backfilled to pre-existing grades with imported granular fill soil. Also included was collection and treatment of groundwater from excavations, prior to discharge to the City of Schenectady POTW.

A total of 9,714.5 tons of contaminated soil was excavated and removed from the property. A total of 654,133 gallons of water was collected and discharged to the POTW. All remedial activity work was carried out from February through June, 2005.

The remediation cleanup goals were attained in all but two specific areas. These two areas, adjacent to the remedial operations access roadway and adjacent to the City sewer trunk line, were restricted by physical site limitations that did not permit complete excavation of soil to the limits of known contamination. These areas are identified as "Area A" in the central portion of Lot No. 6 and "Area B" in the western limit of Lot No. 6 along a portion of the existing City of Schenectady sewer lines. In these areas soil contaminated by petroleum products has been confirmed up to:

	Target VOCs (ppm)	VOC TICs (ppm)*
Area A	None	92.2
Area B	360.5	856.0

* Sum of top ten tentatively identified compounds (VOCs)

The Lot No. 6 property of the remediation project is subdivided into two separate parcels, the larger parcel being "Lot No. 6" containing Area A and the smaller parcel being the "sewer parcel" situated along the western edge of the project Lot No. 6 and containing Area B.

A property survey drawing titled "Map Showing Survey, Riverside Technology Park, Revised Lot 6" (by ABD Engineers & Surveyors, Dwg. No. 2447A-NEW6, Rev. 1, 10-3-05) is a part of this Plan and presents the property limits and the Areas A and B.

Reference Sources

All For: NYSDEC Brownfield Environmental Restoration Project No. B00053,
Riverside Technology Park – Lot 6,
Schenectady, NY

Owner: City of Schenectady Industrial Development Agency

Site Investigation / Remedial Alternatives Report, Holt Consulting, February 2002

Environmental Restoration, Record of Decision, Riverside Technology Park, NYSDEC, March 2003

Design Report (Bid Documents and Specifications), Holt Consulting, April 2004

Engineering Certification Report, Holt Consulting, March 2006

"Excavation Limit, Sub-Division & Soil Management Plan Areas," Holt Consulting, Dwg. No. 05-158.07-2, Rev. 1 (9-16-05)

"Subdivision Plan, Riverside Technology Park, Revised Lot 6," ABD Engineers & Surveyors, Dwg. No. 2447A-NEW6, Rev. 2 (3-19-08)

Property Use Restrictions

It is intended that the property be available for light industrial or commercial use, however the property shall be restricted from residential development, and shall be subject to an Environmental Easement referencing and including this Site Management Plan.

Institutional Controls

The Site was remediated to the extent practicable under the New York State Environmental Restoration Program. The institutional controls are necessary due to two areas of residual VOC and SVOC contamination that remain in the subsurface soil (Area A and Area B shown in attached map/exhibit). The conditions and site-use requirements set forth in this Site Management Plan are imposed upon the "Lot 6" and adjoining "sewer line" parcels. These institutional controls included in this Plan consider three aspects of control:

- Filed Environmental Easement on the property,
- General site use restrictions,
- Specific restrictions regarding handling and use of ground water, and
- Specific restrictions regarding soil disturbance.

The NYSDEC Brownfield Cleanup Program requires that this Site Management Plan and accompanying property survey drawing titled "Subdivision Plan, Riverside Technology Park, Revised Lot 6" (by ABD Engineers & Surveyors, Dwg. No. 2447A-NEW6, Rev. 2, 3-19-08), must be included with a duly filed environmental easement on the site property deed, filed with the appropriate governmental offices.

Any future, proposed actions that are subject to the provisions of this Site Management Plan must be submitted to the appropriate Division of the NYSDEC in writing for review and acceptance prior to implementation.

Specific institutional controls are presented below:

General Property Use Restrictions

GU-1. Any type of residential use of the Controlled Property including housing, daycare, hospitals, agricultural use and schools shall be specifically prohibited. An application to the City of Schenectady Zoning Board of Appeals for a land use variance for the Controlled Property must include documentation of a waiver of the use prohibition from the NYSDEC.

GU-2. Any proposed excavation deeper than either one foot below existing grade in areas that do not receive any new construction or grading fill, or beneath existing grade that is defined by a demarcation layer of permeable non-degradable synthetic material in areas that receive new construction or grading fill, or any erection of a structure or roadway that exposes subsurface soil below existing grade on the Controlled Property, requires prior notification of and approval by, the NYSDEC and compliance with the approved Site Management Plan. The owner of the Controlled Property must submit a written description of any future, proposed actions to the NYSDEC (at least 60 days) in advance of anticipated implementation, if such notification is required pursuant to this § GU-2.

GU-3. Any future construction of buildings on the property must include preventative measures to address the potential for soil vapor intrusion and include confirmation that those measures are effective and remain effective as needed to eliminate the potential for exposures that may result from contaminated soil vapor.

GU-4. Periodic certification by the owner of the Controlled Property or City of Schenectady Industrial Development Agency (COSIDA), be prepared and submitted to the NYSDEC by a professional engineer or an environmental professional acceptable to the NYSDEC, certifying that the institutional controls and engineering controls installed on the Controlled Property pursuant to the SAC # C 302580 are unchanged from the previous certification, are being operated and maintained in conformance with the provisions of the NYSDEC-approved Site Management Plan for the Controlled Property and all NYSDEC-approved amendments to that Site Management Plan, and have not been impaired.

Ground Water and Surface Water Use Restrictions

GW-1. Use of groundwater as a source of potable, process, or irrigation water shall be prohibited, without necessary water quality treatment as determined by the Schenectady County Health Department.

GW-2. Withdrawal, collection, or drainage of groundwater related to construction or other site alteration, shall be tested and monitored in accordance with an appropriate Site management Plan written by a licensed environmental or industrial hygiene professional (and determined to be acceptable to the NYSDEC) which includes consideration of the contaminants of record which are petroleum constituents and derivatives, Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs).

General Soil Management Restrictions

SMR-1. Soil disturbance, grading or excavation greater than one foot will proceed under an appropriate Site Management Plan (Plan), as per § GW-2 which shall include provisions for appropriate screening for the contaminants of record performed by an environmental professional during soil disturbance activities, and shall define threshold conditions that will require implementation of additional levels of monitoring, testing or site security to protect worker and community health and shall describe contingency activities in the event that currently unknown contaminated conditions should be discovered.

SMR.-2. This Plan shall include provisions for an environmental professional to perform appropriate screening for petroleum constituents. VOCs, and SVOCs during all soil excavation or soil disturbance activities, and shall define threshold conditions that will require implementation of additional levels of monitoring, testing, odor controls, site security to protect worker and community health and shall describe contingency activities in the event currently unknown contaminated conditions are discovered.

SMR-3. The HASP (§ SDMA-1) must include and refer to the NYSDOH Generic Community Air Monitoring Plan. If contaminated soil or groundwater is encountered during future excavation work, the GCAMP must be followed to limit the off-site migration of VOCs in air, dust, or odors that might affect nearby workers or community.

SMR-4. All wastes generated by actions regulated under this Site Management Plan will be properly characterized, managed, reused or disposed of as per applicable state and federal requirements.

Soil Disturbance In Soil Management Areas
(Soil Management Plan Area A and Soil Management Plan Area B)

SDMA-1. Soil Disturbance shall proceed only in accordance with the above general site management restrictions, SMR-1, SMR-2, SMR-3 and SMR-4. In addition, any soil disturbance occurring in the defined Soil Management Plan Area A or Area B shall proceed only in accordance with a Health and Safety Plan (HASP) specifically prepared for the nature and depth of excavation anticipated and specifically cognizant of site history and conditions described in the ERP documents prepared by Holt Consulting: the Site Investigation/Remedial Alternatives Report and the Engineering Certification Report.

SDMA-2. All excavated soil shall be screened by an environmental professional. If contaminated conditions are indicated, excavated soil samples shall be tested by an ELAP-certified environmental laboratory. Excavated, contaminated soil shall be analyzed, managed and disposed of as per applicable state and federal requirements.

Soil Management in Emergency Situations

Notwithstanding the provisions set forth above, solely with respect to the Sewer Parcel, in the event an emergency situation requires the disturbance of soil greater that 1 foot below the existing surface within the Sewer Parcel, the emergency work can proceed without pre-notification or pre-approval of the NYSDEC, AND the emergency work shall proceed without the advanced preparation of a Site Management Plan as called for by the General Soil Management Restrictions of this SMP. The NYSDEC shall be notified of the emergency work within 48-hours of the occurrence of the emergency situation.

In such emergency situation any and all soil or other excavated material shall be contained in a manner providing all reasonably available environmental safeguards to prevent loss or migration of excavated material. These shall include:

a.) Excavated material shall be staged and stored in an area equipped with an impermeable surface lining (e.g. polyethylene sheeting, HDPE), and containment berms shall be constructed to prevent excavated material or contained water or material-contacted storm water from coming into contact with underlying soils. Individual piles shall not exceed a size of 50 cubic yards of material.

b.) Excavated materials staged and stored shall be securely covered with impermeable sheeting (e.g. polyethylene) to prevent material contact with storm water.

c.) All work shall be performed in accordance with all regulations and requirements protecting worker safety. All work shall be completed utilizing appropriate health and safety procedures to include at least Level D Personal Protective Equipment for sub-surface and material pile contact workmen and laborers, and shall include work area air monitoring and assessment for volatile organic compounds (VOCs) by a professional engineer or environmental or occupational health and safety professional.

d.) Staged or stored material piles will be monitored, screened and characterized by a professional engineer or environmental professional for indications of contaminated conditions including un-natural coloration, odor, and VOCs as indicated by PID or other suitable field screening instrument.

e.) A written record shall be kept of all work-area environmental and worker safety monitoring (e.g. monitoring of VOCs by PID during work progress) and material handling procedures.

Concurrent with, or at the conclusion of, the emergency activity the excavated material shall be characterized, the appropriate means of use or disposal determined, and a material characterization and disposition report shall be prepared by the professional engineer or environmental professional. This report shall be included in the next scheduled periodic certification submitted to the NYSDEC (§ GU-4). Characterization shall consider:

f.) Excavated material exhibiting VOC screening levels of less of 10 ppm or less above back ground levels shall be considered suitable for return to on-site excavations or common unclassified disposal.

g.) Excavated material exhibiting visual indication of petroleum contamination, petroleum odor, or VOC screening levels of greater than 10 ppm above back ground levels shall be sampled for testing by a NYSDOH ELAP-certified laboratory for Target Compound List (TCL) VOCs and SVOCs (semi-volatile organic compounds) at a frequency of one composite sample and one grab sample per 100 cubic yards of staged material. The composite sample shall be collected from five individual samples from the staged material. The grab sample shall be from material of the highest PID level observed or the most significant visual/odor indication.

h.) Excavated material that is determined by the environmental professional to exhibit obvious indication of contamination, or is found by laboratory testing to exceed established VOC or SVOC constituent concentration guidelines for on-site re-use, shall be identified and designated for appropriate disposal.

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