

**Atlas Park Parcel B
Remedial Action Work Plan
Stipulation List**

1. This Remedial Action Work Plan (RAWP) will address the on-site soil, on- and off-site vapor, and on- and off-site groundwater.
2. The off-site vapor remedy consists of in-home vapor monitoring (sub-slab, indoor air, and ambient outdoor air). The details of the sampling program including procedures to be followed will be defined in the NYSDEC-approved Site Management Plan. Homes to be sampled will be approved by NYSDOH and NYSDEC. Pending evaluation of further monitoring results obtained under the Site Management Plan, further monitoring of soil vapor and/or mitigation of soil vapor under homes may be required and will be determined by NYSDOH and NYSDEC.
3. The Controlled Property has three primary engineering controls (ECs). These are: (1) a composite cover system consisting of asphalt or concrete pavement in walkways and driving surfaces, and concrete slabs under building structures; (2) soil vapor mitigation systems consisting of sub-slab depressurization systems under all occupied building structures; and (3) two groundwater air-sparging/soil vapor extraction systems. A series of institutional controls (ICs) are required to implement, maintain, and monitor these ECs, as defined in the NYSDEC-approved Site Management Plan. Adherence to these ICs is required under the environmental easement. These ICs are:
 - a) all ECs must be operated and maintained as specified in the NYSDEC-approved Site Management Plan;
 - b) all engineering controls on the Controlled Property must be inspected and certified at a frequency and in a manner defined in the NYSDEC-approved Site Management Plan;
 - c) groundwater, soil vapor and other environmental or public health monitoring must be performed as defined in the NYSDEC-approved Site Management Plan;
 - d) data and information pertinent to site management for the Controlled Property must be reported at the frequency and in a manner defined in the NYSDEC-approved Site Management Plan; and

e) on-site environmental monitoring devices, including but not limited to, groundwater monitor wells and soil vapor probes, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the NYSDEC-approved Site Management Plan.

The Controlled Property has a series of ICs in the form of site restrictions. Adherence to these institutional controls is required under the environmental easement. Site restrictions that apply to the Controlled Property are:

a) The Controlled Property may be used for restricted commercial use only;

b) The Controlled Property may be used for restricted commercial use as long as the long-term EC/ICs cited here and included in the Site Management Plan are employed;

c) vegetable gardens and farming on the Controlled Property are prohibited;

d) The use of the groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for intended purpose; and

e) All future activities on the Controlled Property that will disturb residual contaminated material protected under the environmental easement are prohibited unless they are conducted in accordance with the soil management provisions in the NYSDEC-approved Site Management Plan.

4. The remedy for on- and off-site groundwater contamination will consist of remediation through two separate air sparge/soil vapor extraction (AS/SVE) systems as further described in the RAWP. The first will be built in the vicinity of the core of the groundwater plume near Building 3 and the second, along the southern site boundary south of Building 8 (See Stipulation Appendix B). These AS/SVE systems are intended to prevent future off-site migration of contaminants in groundwater in excess of groundwater standards. Following evaluation of groundwater monitoring results performed under the Site Management Plan, NYSDEC may require additional remedial measures to be performed if remedial goals have not been met. The AS/SVE systems will be kept operable and will not be discontinued without approval by NYSDEC in writing. In addition,

monitored natural attenuation will be performed for off-site groundwater plume(s) in a manner to be fully addressed in the Site Management Plan. The monitoring program will include sampling, assessment of groundwater flow dynamics, water quality, and reporting. Pending review of data generated under the Site Management Plan, NYSDEC may require additional engineering control(s) if it determines that the planned AS/SVE systems are not sufficient to achieve remedial goals of preventing continued off-site migration of contaminated groundwater and soil vapor.

5. Track 4 soil cleanup objectives for the site are as follows:

arsenic: 23 mg/kg
mercury: 2.0 mg/kg
chromium: 43 mg/kg
zinc: 300 mg/kg
barium: 700 mg/kg
copper: 250 mg/kg
lead: 1,000 mg/kg
volatile organic compounds (individual): TAGM 4046
volatile organic compounds (total): 10 mg/kg
semi-volatile organic compounds (total): 500 mg/kg

In addition to the compounds listed above, the cPAH compound index (total of seven cPAHs) greater than 10 mg/kg will be removed from the Site.

The ranking tables to support the Track 4 Soil Cleanup Objectives are located in Stipulation Appendix C.

6. The Final Engineering Report will include a table of all data for soil remaining in place and highlighting all exceedances of TAGM 4046 criteria. A map with data postings will also show all exceedances of TAGM 4046.
7. All references to draft Part 375 regulations as a basis for remedial decision making in this RAWP are hereby withdrawn.
8. The estimated quantity of soil/fill to be removed from the site for remedial purposes is approximately 2,000 cubic yards. No soil is expected to be imported into the site for backfill or cover soil. The estimated quantity of soil/fill expected to be relocated on site is approximately 150 cubic yards.

9. The sub-slab depressurization systems are considered an engineering control for purposes of this remedy and will be appropriately addressed in the Site Management Plan, environmental easement and Final Engineering Report.
10. Annual inspection and certification of all sub-slab depressurization systems will be required under the Site Management Plan.
11. The sub-slab depressurization systems (SSDS) for all buildings on Parcel A are, in full, included as an engineering control in this Remedial Action Work Plan for Parcel B. All requirements for engineering controls will apply, including inclusion in the Site Management Plan, environmental easement, and Final Engineering Report and Certificate of Completion
12. The site has been deemed a significant threat site by the NYSDEC and NYSDOH. All requirements pertinent to significant threat sites will apply to Parcel B, including those for citizen participation.
13. A full description of the second AS/SVE system to be installed along the southern boundary of the Site is included in Stipulation Appendix B. The purpose of this system is to intercept and prevent potential off-site migration of contamination in groundwater and soil vapor from the Atlas Park Parcel B Site.
14. Due to the dynamic nature of groundwater flow caused by recent installation of a stormwater recharge system on Parcel A, the Site Management Plan will contain provisions for enhanced monitoring of hydraulic head and groundwater quality. This will address potential for new groundwater flow paths toward the north, northwest and west. Where necessary, based on results of such testing, additional monitoring may be required.
15. Groundwater monitor well MW-63 has been replaced.
16. Groundwater monitoring for both hydraulic head and chemical quality will continue on a quarterly basis through the approval of the Site Management Plan.
17. Chemical data for sampling of the underground storage tanks (USTs) removed from Parcel B is included in Stipulation Appendix D.
18. An itemized and detailed summary of estimated costs for the remedial activity is attached as Stipulation Appendix E. This will be revised based

on actual costs and submitted as an appendix to the Final Engineering Report

19. The details for all surface cover designs proposed for use at the site are shown in Stipulation Appendix F. The details include the type of material and thickness of material used. The Final Engineering Report will include a site plan that illustrates the as-built design details and cover design layout.
20. A description of the sequence and chronology of changes to the site boundary for Parcel B is included in Stipulation Appendix G of this report. The Parcel B site boundary is consistent with the Parcel B site boundary map and metes and bounds description attached to the Parcel B BCA Amendment.
21. A complete list of all local, regional and national governmental permits, certificates or other approvals or authorizations required to perform the remedial and development work is attached in Stipulation Appendix H. This list includes a citation of the law, statute or code to be complied with, the originating agency, and a contact name in that agency and contact phone number. This list will be updated in the Final Engineering Report.
22. All trucks loaded with site materials will exit the site using only approved truck routes. Truck routes are presented in Stipulation Appendix I.
23. This Remedial Action Work Plan has been P.E. certified to be in conformance with DER-10 and stamped by the Remedial Engineer. [Certification is attached in Stipulation Appendix J]
24. The DEC-approved BCP project sign will be placed at the primary entrance to Parcel B located at the intersection of 80th Street and 80th Drive West.
25. A detailed description of the Soil Erosion and Sediment Control Plan can be found in Stipulation Appendix K. See section 3.9 of the Parcel B RAWP for the Stormwater Pollution Prevention Plan.
26. The Final Engineering Report will be prepared in accord with DER-10.
27. The entire stormwater drainage system located on Parcel B is newly constructed and contains no components of the former system on Parcel B.

Agency Approvals

28. The hours for operation of remedial construction will conform to the New York City Department of Buildings construction code requirements or otherwise according to specific variances issued by that agency. DEC will be notified by Participant of any variances issued by the Department of Buildings. NYSDEC reserves the right to deny alternate remedial construction hours.
29. The planned end use for the site is in conformance with the current zoning for the property as determined by New York City Department of Planning.

Construction Activities

30. The Participant and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work and the structural integrity of excavations and structures that may be affected by those excavations (such as building foundations).
31. Site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this Remedial Action Work Plan.
32. Each hotspot and structure to be remediated (USTs, vaults and associated piping, transformers, etc.) will be removed or closed in place and end-point remedial performance samples collected. All sample results will be included in the Final Engineering Report.
33. Development-related grading cuts and fills will not be performed without NYSDEC approval, and will not interfere with, or otherwise impair or compromise, the performance of remediation required by this plan.
34. The presence of utilities and easements on the site has been investigated by the Participant. It has been determined that no risk or impediment to the planned work under this Remedial Action Work Plan is posed by utilities or easements on the site.
35. Silt fencing and hay bales will be installed around the entire perimeter of the remedial construction area.

36. Mechanical processing of historical fill and contaminated soil on-site is prohibited.
37. All primary contaminant sources (including but not limited to tanks and hotspots) identified during site characterization, remedial investigation, and remedial action will be surveyed by a surveyor licensed to practice in the State of New York. The location of these sources will be reported in the Final Engineering Report.

Truck Management

38. All trucks containing or encountering soils, sediments, and/or liquids from the Parcel B Site will be washed prior to leaving the site. Truck wash waters will be collected and disposed off site in an appropriate manner.
39. Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.
40. Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing of trucks is prohibited.

Stockpile Management

41. Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.
42. Soil stockpiles will be continuously encircled with silt fences. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Odor Controls

43. Odor control methods will be capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Remediation Engineer that will sign the certification of the Final Engineering Report.

44. All necessary means will be employed to control odors and eliminate associated nuisances on- and off-site. The means to be considered for odor control when odors are caused by remedial actions or associated work include, but are not limited to: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; (c) use of foams to cover exposed odorous soils; (d) use of chemical odorants in spray or misting systems; and, (e) use of staff to monitor odors in surrounding neighborhoods. If these and other methods are not successful, enclosures will be erected around remedial work areas to control odors.

Residual Contamination Demarcation

45. The Site Management Plan will include a description of the location of the residual contamination zone to be addressed under the soil management plan

Underground Tank Management

46. UST closures will, at a minimum, conform to criteria defined in DER-10.

Contractor Management

47. Remedial Engineer will be responsible to insure compliance with all provisions of the approved remedial work plan, including those performed by contractors.

48. All contractor documents related to remedial work have been or will be submitted to NYSDEC and NYSDOH. These will be included in the Final Engineering Report.

Contingency Plans

49. If underground tanks or other previously unidentified contaminant sources are identified during on-site remedial excavation or development related construction at the site, sampling will be performed on product, sediment and surrounding soils, etc., with chemical analytical work for full scan parameters (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs). These analyses will not be limited to STARS parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.

50. Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's project manager. These findings will be also included in daily or periodic electronic media reports.

Off-Site Disposal

51. All soil/fill excavated and removed from the site will be treated as contaminated and regulated material and will be disposed in accordance with all local, state and federal laws. If disposal of soil/fill from this site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's project manager. Unregulated offsite management of materials from this site will not be performed without formal NYSDEC approval.
52. If materials derived from the site are planned to be disposed off-site in an unregulated manner, these materials must meet TAGM 4046 criteria and must receive NYSDEC approval prior to unregulated disposal off site.
53. Letters will be provided to NYSDEC that fully demonstrate and document that the disposal of material derived from the site conforms with all applicable laws. This will include, at minimum: (a) a letter from the Participant to the facility providing all pertinent soil chemistry data and noting that the soil/fill is a contaminated media being removed from a Brownfield site in New York State as part of an environmental remediation project; (b) a letter from the receiving facility stating that they understand the source and that the material is acceptable under the all appropriate permits.
54. Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6 NYCRR Part 360-1.2
55. Historical fill and contaminated soils from the site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).
56. Soils that are contaminated but non-hazardous and are being removed from the site are considered by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC to be Construction and Demolition (C/D) materials with contamination not typical of virgin soils. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C/D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DSHM. This material is prohibited from being redirected to a Part 360-16 Registration Facility. In this case, as dictated by DSHM, special procedures will include, at a minimum, written correspondence to the C/D facility that provides detailed explanation that

- the material is derived from a DER remediation site, that the soil material is contaminated and that it will not be redirected to on-site or off-site Soil Recycling Facilities. The chemical data for the soil will be attached to the correspondence.
57. The Final Engineering Report will include an accounting of the destination of all material removed from the site, including excavated contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material will also include records and approvals for receipt of the material.
 58. Waste Manifests will be used for off-site movement of non-hazardous wastes and contaminated soils. This information will be reported in the Final Engineering Report.
 59. Hazardous wastes derived from on-site will be stored, transported, and disposed in full compliance with applicable local, state, and federal regulations.
 60. All liquids to be removed from the site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, state, and federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by NYCDEP.
 61. Dewatered fluids will not be recharged back to the land surface or subsurface of the site. Dewatering fluids will be managed off-site
 62. Appropriately licensed haulers will be used for material removed from this site and their handling of the material from the site will be in full compliance with all applicable local, state and federal laws.

On-site Materials Reuse

63. Concrete crushing or processing on site is prohibited.
64. Organic matter (wood, roots, stumps, etc.) or other solid waste derived during clearing and grubbing of the site is prohibited for reuse on-site.
65. Contaminated on-site material, including historic fill and contaminated soil, removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. This will be expressed in the final Site Management Plan.

Import of Soil

66. All imported soils will meet TAGM 4046 standards. Non-compliant soils will not be imported onto the site without prior approval by NYSDEC. Nothing in the approved Remedial Action Work Plan or its approval by NYSDEC will be construed as an approval for this purpose.
67. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet TAGM 4046 RSCOs, will not be imported onto the site without prior approval by NYSDEC. Nothing in the approved Remedial Action Work Plan should be construed as an approval for this purpose.
68. Solid waste will not be imported onto the site.
69. Trucks entering the site with imported soils will be securely covered with tight fitting covers.

Screening

70. Screening of soils and fill will be performed (i.e. visual, olfactory, FID/PID, etc.) during all excavations and invasive work that may penetrate residual contamination, including excavations for remediation and development. This will be performed regardless of when the invasive work is done and includes all excavation and invasive work performed after the remedy and during the development phase, such as excavations for foundations and utility work.
71. Resumes will be provided for all personnel responsible for field screening (i.e. those representing the Remedial Engineer) of invasive work during remediation and development work for unknown contaminant sources. Copies of these resumes will be provided in the Final Engineering Report.

Remedial Performance Monitoring

72. Chemical labs used for all end-point sample results and contingency sampling will be NYSDOH ELAP certified.
73. End point sampling, including bottom and sidewall sampling, will be performed in accordance with DER-10 sample frequency requirements. Sidewall samples will be collected a minimum of every 30 linear feet. Bottom samples will be collected at least one for every 900 square feet.

Project Oversight

74. The Remedial Engineer is Joel B. Landes, P.E., of Langan Engineering and Environmental Services PC. In addition to other duties specified in these stipulations, the Remedial Engineer will be responsible for providing all required P.E. certifications listed in this Remedial Action Work Plan.
75. All invasive work performed during remedy or subsequent development on this site until a Certificate of Completion is issued will be witnessed by the Remedial Engineer or his/her qualified representative.
76. The Remedial Engineer will review all pre-remedial plans submitted by contractors for compliance with this Remedial Action Work Plan and will certify compliance in the Final Engineering Report.

Remedial Engineer Certifications

77. The Final Engineering Report will include a P.E. certification by the Remedial Engineer that all remedial work was performed according to the approved Remedial Action Work Plan.
78. The Final Engineering Report will include a P.E. certification by the Remedial Engineer that all invasive work done during the remediation and development (i.e. grading cuts, utility trenches, footings, etc.) was performed in accordance with the contaminant field screening methodology defined in the approved Remedial Action Work Plan.
79. The Final Engineering Report will include a P.E. certification by the Remedial Engineer that all import of soils from off site, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the approved Remedial Action Work Plan.
80. The Final Engineering Report will include a P.E. certification by the Remedial Engineer that all invasive work completed during the remediation (including IRMs) and all invasive development work was done in accordance with dust and odor suppression methodology defined in the approved Remedial Action Work Plan.

Health and Safety

81. All remedial work performed under this plan will be in full compliance with governmental requirements, including site and worker safety requirements mandated by federal OSHA.
82. The Participant and associated parties preparing the remedial documents submitted to the State and those performing the construction work, are completely responsible for the preparation of an appropriate Health and Safety Plan and for the appropriate performance of work according to that plan and applicable laws.
83. The Health and Safety Plan (HASP) and requirements defined in this Remedial Action Work Plan will pertain to all work performed until the issuance of a Certificate of Completion.
84. The Site Safety Coordinator is identified as John M. Gavras. A resume is attached in Stipulation Appendix L.
85. Exceedances observed in the CAMP will be reported in the Final Engineering Report to the NYSDEC and NYSDOH Project Manager.
86. Confined space entry will comply with all OSHA requirements to address the potential for combustible gasses.

Reporting

87. A metes and bounds description of the site with a global positioning system coordinate for the starting point will be included in the Final Engineering Report.
88. Daily Reports will be provided to the Project Managers for NYSDEC and NYSDOH by email during all periods of major invasive activity for this project. These reports will include description of daily activities keyed to an alphanumeric map for the site that identifies work areas. These reports will include a summary of air sampling results, odor and dust problems and corrective actions, and all complaints received from the public.
89. Daily reports are not intended as the primary means to convey sensitive or time-critical information (i.e. notification of an accident, spill or emergency) or notification of changes to approved plans. These communications will be made directly with project managers.

90. Monthly reports will be submitted to NYSDEC and NYSDOH and will include a summary with quantities for all work performed during the reporting period. These will also be included in the Final Engineering Report.
91. An emergency contact sheet will be submitted to NYSDEC's Project Manager. That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.
92. Before completion of a project (before approval of a Final Engineering Report and issuance of a Certificate of Completion), all project reports will be submitted to NYSDEC in digital form (PDF).
93. Photographs will be taken of all remedial action activities and submitted to NYSDEC in digital form. Photos will illustrate all remedial program elements and will be of acceptable quality. Representative photos of the site prior to any remedial actions will be provided. Representative photos will be provided of each contaminant source and source area, and structures before, during and after remediation. Photos will be submitted to NYSDEC on CD and will be sent to NYSDEC's project Manager (two copies) and to NYSDOH Project Manager (one copy). CDs should have a label and a general file inventory structure that separates photos into directories and sub-directories according to logical lines. A photo log keyed to photo file ID numbers should be prepared to provide explanation for all representative photos. For larger and longer projects, photos should be submitted on a monthly basis or other agreed upon time interval.
94. Mandatory job-site record keeping will be performed. These records will be maintained on-site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.
95. All digital and hard copy submittals will be made to assigned project managers for both the NYSDEC and the NYSDOH.
96. Project numbers will appear on the cover and face page of all reports.

Fact Sheets and Repositories

97. A certification of mailing will be sent by the Participant to the NYSDEC project manager following distribution of all Fact Sheets and notices, providing certification that the Fact Sheets were mailed, when they were

mailed, a copy of the Fact Sheet, a list of recipients (contact list) and a statement that the repository was inspected and contained all of the applicable project documents.

98. No changes will be made to approved Fact Sheets authorized for release by NYSDEC without the consent of the NYSDEC in writing. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

Site Management Plan

99. The Site Management Plan will include provisions for, at a minimum: an institutional and engineering control plan; a monitoring plan, an operation and maintenance plan, and a reporting plan.
100. No exclusions for handling of residual contaminated soils will be provided in the Site Management Plan (SMP). All handling of residual contaminated material will be subject to provisions contained in the SMP.

Environmental Easement

101. An Environmental Easement as defined in Article 71 Title 36 of the Environmental Conservation Law will be required to address residual contamination left on-site after the remedial action is complete. Registration of the Environmental Easement will be documented in the Final Engineering Report.
102. The Environmental Easement will include reference to the Site Management Plan and a listing of all institutional controls, engineering controls, operation, monitoring and maintenance requirements, and annual remedial inspection and certification requirements for the site.
103. The Environmental Easement will be submitted as part of the Final Engineering Report.

Final Engineering Report

104. The Final Engineering Report will include as-built drawings for all constructed elements, certifications, manifests and bills of lading, and the Site Management Plan.
105. The Final Engineering Report will include an accounting of the destination of all material removed from the site, including excavated

contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material will also include records and approvals for receipt of the material.

106. An itemized and detailed summary of actual costs for the remedial activity will be submitted as an appendix to the Final Engineering Report.

Miscellaneous/Errata

107. Figure 3, which is a PCE/TCE groundwater isoconcentration map, was revised to show the location of Sentinel Well – OSW-5. The revised Figure 3 can be found in Stipulation Appendix A.
108. Reference to “Figures 4, 5 and 6” and “Figure 3” in the last paragraph on Page 3, Section 2.1 refer to specific figures in the July 2006 SRI Report.
109. Reference to the following text “Figure 3 of this RAWP presents the SRI groundwater and soil findings, and Figures 4 and 5 present the SRI soil vapor findings for Buildings 3 and 8, respectively.” On Page 10, second paragraph of Section 1.5.4 should read as follows: “Figure 3 of this RAWP presents the SRI groundwater findings, and Figures 6 and 7 present the SRI soil vapor findings for Buildings 3 and 8, respectively.”
110. Reference to “Appendix E” at the top of Page 15 should refer to “Appendix D”.
111. References to “Figure 3” at the bottom of Page 15 and in the third bullet on Page 16 should refer to “Figure 4”.
112. References to “Figure 6” on Pages 37 and 41 should refer to “Figure 7”.

END OF STIPULATIONS